

**Strategy and
Action Plan
for
Bio-diversity
Conservation
(District - Jashpur)**

[Part of Bilaspur sub-State site, Chhattisgarh]



Prepared By

[**Bio-Diversity Conservation Work Group, Jashpur**]

PREFACE

Under the umbrella of union government, Sub-state Bilaspur was also selected to be center of Biodiversity Conservation. Eastern extremity of Chhota Nagpur Plateau - Jashpur, being a combination of hills, plateau and plains, owes a versatile assemblage of vegetation and animals. This combination facilitates to be ideal place for habitats of various faunal entity, ranging right from mammals up to micro- organisms. This must be one of the reasons, why Jashpur was selected as one of the three pilot phase districts. (Viz. Sarguja, Raigarh, Jashpur) of the sub-state site Bilaspur for biodiversity Conservation. Not only Biodiversity Conservation Committee but also Biodiversity Conservation work group was constituted in Jashpur, as soon as sub-state status of Bilaspur was declared.

Commissioner, Bilaspur is appointed ex-officio President of the sub-state site, and the State Programme Director IFAD as its member Secretary .BD conservation workgroups in various district worked, right under the guidance of corresponding District Magistrate as their President and the DFO as Member Secretary. Coordinators of work group worked to facilitate appropriate for gathering the information, filling it into standard format and fabricating strategies suited to site.

As far as the status and preference for Biodiversity Conservation is concerned, after a thick stewing of facts, interactions, pooling of primary and secondary data, the fact surfaced that in Jashpur some very important Biodiversity Components need immediate attention of forces, which can influence highest level of management. One of the examples is benefit-sharing coming out of resources to local healers of herbs and herpato faunal entities.

Second matter of deep concern is global. The IPR, and allied arrangements is gripping the bio-resource banks of developing countries. There also, union government has a moral mandate for its pupil to protect their Biodiversity in terms of physical entity and also related knowledge from bio-pirates.

Parallel, the initial preparation of Biodiversity Registers in all the villages of the district is already on. This register includes present status of all sorts of bio-resources within the gambit of village. It talks of traditions, culture and other practices too.

The time with the workgroup Jashpur was very short, it ran short of requisite manpower and financial support. Strategy and action plan is completed in about 7 months. This was a stupendous completed by the team involved. Lets hope Biodiversity register works to its fullest pace with throttles of knowledge full open and we succeed in ensuring livelihood security of pupil of Jashpur through sustainable management of available bio-resources.

District Collector,
Ex-officio President,
District Bio-Diversity Conservation Committee,
Jashpur (C. G.)

FOREWORD

Bio-diversity strategy and action plan for Jashpur has been prepared by BD conservation workgroup, Jashpur, with the necessary guidance of BD conservation committee, Jashpur. The total time taken was though just six months, in which the workgroup members worked really hard, but release of the report took a bit of time owing to writing, editing, compilation and the addition suggested by experts time to time. BD conservation work group which is solely comprising of civil society members except for the co-ordinator and one more official, facilitated for various village-level meetings, and workshops which ultimately led to the fabrication of strategies suiting to the area. Community which was contacted for its valuable suggestions included professors of universities, scientists from IIFM, a museum director, administrators and members of civil society. Even the local farmers and other stake-holders were touched. Work group initiated for a two- day workshop of the local healers in which 42 healers not only made their appearance, but also shared their knowledge with one-another.

The local healers attending the workshop were asked to explain just one specimen they had with them, and the knowledge of other species- assemblage were also discussed.

Their discussions were recorded, and a strategy was formulated. In another workshop presided by President, Distt. BD conservation committee, was held in which stake-holders, NGOs, work group members, locals participated. In the workshop after heavy brain-storming, discussions- four areas were selected as the focus of conservation of BD.

After this workshop, workgroup members visited many villages, in order to sensitise them for the task of conservation after sharing knowledge of existing bio-resource in the village, and the possible ways of performing it.

Part of Gap analysis, identifying actors and formulating best suited strategy was the result of marathon discussions with villagers, officials, scientists stake holders people with potential bioresource in the vesinity and NGO's. Eminent anthropologists and even members of TPCG were also contacted. Mid term review workshop of eastern zone at Kolkata was also useful in acheving the target.

Workgroup has made honest attempts heal to top, to incorporate all concerns expressed by local people as well as the demands of the site, I have a strong fellling of strategies being implemented properly to conserve the biodiversity.

(Ashutosh Mishra)

Co-ordinator

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Jashpur, Chhattisgarh

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CHAPTER - I

INTRODUCTION

*i) **Brief background to the SAP:-***

Global Environment Facility (GEF) through UNDP sponsors NBSAP. NGO- Kalpvriksh (which is a part of Technical Policy & Core Group (TPCG) consisting of 15 Govt. and independent expert) has been given the responsibility of coordination.

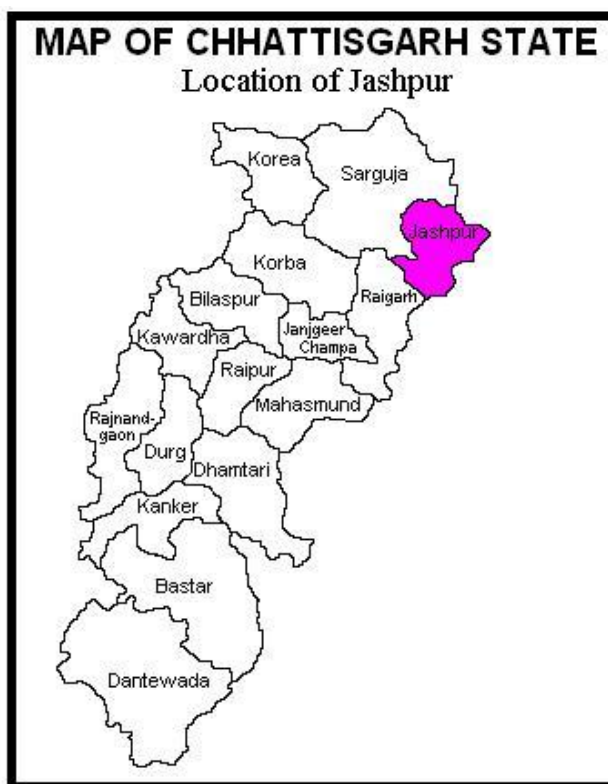
Responsibility of technical execution of the plan is given to 'Kalpvriksh' (NGO) who have decided to touch every corner, not letting any stone unturned. There are 74 plans to be prepared; inclusive of 17

plans for already selected sub-state sites, one of which is Bilaspur. This site covers most of North portion of Chhattisgarh State. Out of 7 districts, two are being taken in pilot project, and later whole of the area will be covered. They are, Jashpur and Surguja, Present plan is for Jashpur.

ii) Scope of SAP:-

The total geographical area of the district of Jashpur is 6457.410 Sq. km of which total forest area is 2752.285 Sq. km. which is 42.622% of the total geographical area.

Topographically the area has three distinct agro-ecological zones: **Upper Ghat** (hills), gentle rolling lowland locally known as **Niche Ghat** and north western portion which has risen to from a plateau, commonly known as **Khudia highland**. The transition zone between the Upper ghat and Niche ghat lies in the northern portion of the Badalkhol and Kunkuri forest ranges. The northwestern portion of the Upper ghat has further elevated to form plateau, locally known as PATS.



GEOLOGY AND CLIMATE

The rocks are of Cretaceous, Precambrian and Archean age but most of the area is covered by granite series. Soil in Upper ghat is lateritic, while in Niche ghat it is sandy & sandy loam.

With three distinct seasons hot (April-mid-June), rainy (Mid-June-September) and cold (November-March), average rainfall

is 1692 mm. In the Upper ghat the climate is mild with heavy rainfall. The ground frost occurs regularly on parts during the months of December and January every year. In Niche-ghat the temperature is comparatively high and the rainfall is less, frost rarely occurs in this area. Sal forests cover major portion of the district. The pat areas of the Upper ghat, which form the khudia highlands in are mostly covered with grasses.

The state of Madhya Pradesh possesses nearly 21% of India's total forest cover. Legally designated forest lands comprising about 34% of its geographical area are under the control of the Madhya Pradesh Forestry Department. These forests, in addition to meeting needs of the urban and industrial establishment, are an important source of livelihood for at least 30,000 villages (42% of total villages in the state) located on the fringe of forest areas. Which are home to 90% of the tribal population in the state.

Apart from the forests meeting 50% of fodder demand of the state. The nationalized NTFPs (Tendu leaf, Sal seed, Harra and Gum) contributed annual revenue of around Rs. 750 million to the State government. In terms of wages paid to collectors for tentu leaf, harra and sal seed. The total disbursement in 1996-97 stood at Rs. 1700 million, with an average of Rs. 1360 million annually for the period 1992-97. Since 1995, the Madhya Pradesh Minor Forest Produce Federation has been given the task for collecting non-nationalized NTFPs through its Primary Co-operative Societies. The wages paid in 1996-97 amounted to Rs. 28 million for 35 species.

Source:- (Madhya Pradesh Human Development Report 1998 Govt. of Madhya Pradesh, Bhopal)

Multiethnic groups inhabit in this district. The traditional communities living in the region include Oraon, Kanwar, Korwa, Rawotia, Lohar, Ghasi, Khariwar, Cherwa, Painka, Gasiya, Domra, Tori, Nagesiya, Mahakur and Barga oraon. Korwas occupy the Upper ghat and Khudia highlands. The oraon usually farm in valleys where as the korwas are generally

confined to hill tops and slopes for this purpose. Rowtia, Kanwar, Nagesiya and Mahkuls inhabit the Niche ghat. The Mahkuls are professional graziers who graze their cattle on the Khudia highland during the summer and rains. When farmer sow crops , Mahkurs start wandering with their cattles.

There are many tribal groups in the area, residing within good forests and unique topography. Combination of all these, create a fair degree of variation in the ratio of BD components. Exercise was done to prioritise the area for BD conservation in Jashpur. Many tools of prioritisation were used. Task of pooling the knowledge (Either from primary as well as secondary sources) was done.

After pooling of knowledge through local healers from all over the distt., Anganbadi workers from all parts of the distt., views of teachers, rural people and by Govt. employees, rough zonation of prioritization of area was done, priority component was also identified. Mainly four dominant BD conservation prioritized sites surfaced : 1. Agrobiodiversity area 2. Herpatofaunal BD area 3. Unique bio-diversity area 4. Badalkhol WL sanctuary, with wide range of herbs and other vegetation. Geographical entities of them were Kansabel area (Pathalgaon Block) Fashabahar Block, Bhadia area (Bagicha Block) PA area (Bagicha Block) respectively. One component - herbal diversity is spread all over the district and is very important from the view of socio-economy of locals. So, this will be over lapping priority zone, extended to the whole district.

iii) Objective of SAP(why is it prepared):-

In Jashpur, topographical variation is sharp enough, to permit a large range of flora & faunal species to co-exist. More over, we have some

known spp. of *Saphora bakeri*, *Dai-droviun formossum* and *Lespedeza*, which are endemic to the area.

In a report released by registrar general of India, New Delhi, under the name 'Primary Abstract Census of India 1991' it is clearly depicted that the percentage of farm employment in Jashpur is 88.8. We can understand easily that thus, farm is the sector to be addressed properly. Also, it gives an idea of why the plan be made on priority.

To add, the latest bio-diversity bill which is presented in parliament long back in 1998 (yet not passed) envisages one of the Objectives of inventorisation of bio-diversity- to know what we have today, identify area of vulnerability and the protection of rights of rural resident of India.

To fulfill these objectives, and to keep Civil Societies and departments (Govt.) the same platform, it is necessary to have a firm broad based practical strategy and specific action plan to be implemented in the area.

So with the objectives :

- i. To inventories the whole bio-resource.
- ii. Prioritisation of hotspots in the area, and
- iii. Ensuring sustainable utilization with proper sharing of benefit.

This plan (with strategies proposed chronologically) is being presented hereby.

iv) Contents of SAP: -

Strategy and Action plan of Jashpur is prepared in accordance to the national bio-diversity strategy and action plan. So, it is not only a tool to assess the present bio-inventory, but also suggests some strategy and specific action regarding conservation of bio-resources, which are under threat or are in excessive use.

The strategy and action plan for Jashpur suggests the conservation of bio-cultural heritage of the area.

The report (Action plan) has three main sections- first one is statement of facts (what we have today). This section is covered in chapters 1 to 6. It covers the area in question, profile of the area, the bio-bank up-to-date (Though not complete), causes of loss of BD, the actors, whose acts effect bio-diversity in any way, and the ongoing initiatives to conserve BD. Chapter 7 appraise about the gaps in information, vision, legal structures, in institutional and human capacity. Chapters 8 and 9 are dealt in tandem, suggesting the actions to be executed.

Root causes of loss of BD, with actors and ongoing initiatives are dealt in the chapter of gap analysis, where the shortcomings are underlined, streamlining for the strategy and specific ground level actions. There is yet another appraisal of ongoing initiations at work already, on different fronts which creates another platform of norm of formulation of strategy, is explained in chapter 6.

v) **Methodology:-**

Division level Bio-diversity Conservation Committee was formed as soon as Bilaspur was declared selected as component of NBSAP on sub-state level. Programme Director IFAD for Chhattisgarh Jharkhand region, was appointed the member secretary, and the Commissioner Bilaspur, as the President of the Committee. Later, this Committee formed the district level Bio-diversity conservation committees in the districts of Surguja and Jashpur. In Jashpur, this committee is headed by district Collector of Jashpur, and DFO Jashpur is appointed as member Secretary. This BDconservation committee, then formed a bio-diversity conservation work group comprising of 12 members. Most of them belong to civil-socities.

This group under- went 1week training in Bilaspur in the first/second week of Nov.,2001, All the work groups of districts participated in the training, and had a good exposure to the subject. Programme director IFAD and his team, explained every component of bio-diversity to them.

After the training, members of bio-diversity conservation workgroup had to gather knowledge of local Bio-diversity. For that, meeting of the district officers was held at the office of the Chief Executive Officer of Zila panchayat Jashpur on December 12th 2000. After that, the work group met many times. On December 18th & 19th 2000, a 2 - day workshop of local healers was organized by work group of Jashpur. There were two mottos of it. One was gathering first hand priliminary information and at the same time intra personnel devt. Of these people, who are expected to be the first BD Soldiers in rural ares. 42 healers Attented the workshop, and explained about one of herbs they brought with them. In this workshop, every corner of the district had at least one representative. Registration form, filled by the healers had a column of naming an herb, which was getting lost in their area.

The co-ordinator of bio-diversity conservation workgroup Jashpur created a questionnaire regarding bio-diversity status. This questionnaire was distributed among all the primary schools, which are part of Rajiv Shiksha Mission and are situated in every corner of the district.

Questionnaire was also given to Anganbadi training center situated in Jashpur. This center trains the Anganbadi workers and supervisors regarding various task performed by Anganbadis. This center has opportunity of getting workers from every part of district. This questionnaire was given to the workers who are coming for training at the center, and this way knowledge from every sector of society was pooled. Local kissan union held one kissan Sammelan at Jashpur. Workgroup members attended that, gathered knowledge about varieties of various crops, and agriculture diversity was talked of. Members, along with

the co-ordinator, met departmental heads, regarding how their works was effecting BD. Perceptions were also collected.

To expedite every thing in a good way, all the government officers of local level, were involved in the process. They are

- a) Revenue department of Jashpur district
- b) Forest -----,,-----
- c) Fisheries -----,,-----
- d) Agriculture -----,,-----
- e) Horticulture -----,,-----
- f) Veterinary -----,,-----
- g) Tribal development -----,,-----
- h) Public Health department -----,,-----
- i) Proff. of Botany , NES College of Jaspur
- j) Proff. of Zoology -----,,-----

Other than these are NGOs, NGIs, local vaidyas, Religious groups are also involed. Some public meeting were also held to gather first hand information. Details of Public meetings are:

<u>Place</u>	<u>Main Participants</u>
a) Madhupur 29-05-2001	i. Shri B.M.S. Rathore ii. Shri Ashutosh Mishra, Coordinator WorkGroup iii. Dr. M.K. Mishra, Member, Work Group iv. Shri Etwa Ram, Member, Work Group v. Shri Temba Ram, Member, Work Group
b) Purainbandh 01-06-2001	i. Shri Ashutosh Mishra, Coordinator ii. Dr. Ajay Sharma, Member iii. Shri Ramdayal Majhi, Member

- iv Shri Temba Ram, Member
- v. Shri Rajesh Tripathi, Member
- c) Tangargaon i. Shri Ashutosh Mishra, Coordinator
- 18/19-04-01 ii. Shri Rajesh Tripathi, Member
- iii. Shri Ramdayal Majhi, Member

(Attendance of people was 50,350 and 85 respectively).

After gathering the information, (sometimes when information was technical) some resource persons (who is authority of the component) were also contacted, to check the norms used to gain the knowledge, and to collect expert comments on future planning. Gathering information quantity wise, quality wise and collecting informations on selected lines (also perceptions) were some of the criteria Till today, work group of Jashpur is in contact of some. They are

- 1) Dr. P.C. Kotwal (Ecologist IIFM Bhopal)
- 2) Dr. A.K. Pati (Zoologist, Ravishankar University, Raipur)
- 3) Shri Mutua Bahadur, NGI (Director, Mutua Museum, Imphal)
- 4) Shri Rajesh Gopal, IFS (Director, Tiger Project, Republic of India, New Delhi)
- 5) Dr. S.C. Naithani, (Seed Biology Lab, Indira Gandhi Agriculture University, Raipur)

For the stocking of certain valuable spp. of the area, like reptiles of Farsabahar, some RP will be invited. Probable expenditure to be incurred is predicted in Annexure

In SAP preparation BD conservation workgroup, has stressed more on direct observations, compiled with sensitization of Government and other

relevant people/group, who are concerned with Bio-diversity at any level.

Attempts were as follows: -

- 1) One to one discussion with district officers – Work group people gathered it and noted.
- 2) Information collected by filling the gaps of information – A questionnaire was circulated in all the primary level schools, teachers were asked to act as facilitator for gathering knowledge. Questionnaire attached Annexure
- 3) Public Meeting – dated 18/19-04-2001 at Tangargaon, dated 29-05-2001 at Madhupur, and dated 01-06-2001 Purainbandh.
- 4) Informal Talks – When ever on official tour.
- 5) Oral information/written information by Government officials Annexure
- 6) By way of Meeting
 - a) Headed by Collector – 12-06-2001
 - b) Headed by DFO – 01-03-2001
 - c) Headed by Work Group Coordinator – 12-04-2001
 - d) Headed by CEO –
 - e) Headed by Programme Director, IFAD – 19-12-2000
- 7) Workshop – dated 19-02-2001 headed by Collector and chaired by IFAD Programme Director. In the workshop very relevant two-way interaction took place. All the departments gave their views, and a common consensus on searching their role by themselves was reached on.
- 8) RPs were contacted – Dr. Pati, RSU Raipur, Dr. P.C. Kotwal, Shri Mutua Bahadur, Impahal, Shri Rahul Singh Archeological Survey, Bilaspur.

- 9) Workshop on Herbal plants used in Medicine – was conducted on 18/19-12-2000 and 42 Local healers were invited, who told about the herbs they were using.
- 10) Trainees of Anganbari – were contacted in Anganbari Prashikshan Kendra Jashpur and information was gathered.
- 11) Books and Literature – Consulted for tribal customs.
- 12) NGI/NGO/Locals – were contacted for custom/traditions.
- 13) Government annals, bibliographies such as working plan, gazetteer, and texts were consulted for technical knowledge literatures selected by bibliography were collected.
- 14) Pooling advantage from various sammelans like non-government kissan sammelan.

Along with above-mentioned

Jashpur centered tasks, various concerned officers were contacted for appraisal. This included a meeting at Commissioner Bilaspur's hall dated 23-12-2000, IFAD office dated 19-01-2001, 19-03-2001. Programme Director IFAD was contacted on phone whenever needed.

CHAPTER-II

PROFILE OF THE AREA

i. Geographical:-

Situated in the NorthEast portion of Chhattisgarh, Jashpur distt. (5339.78 sq.k.m.) is mainly a tribal distt., with a growth rate of 12.71 in population, male - female ratio being 998 per thousand. District has 12.7 persons per k.m. Latest counting is of the order of 7, 42, 318 people.

Geographical location on Jashpur is 22 17-23 15 N and 84 04-81 26 E with average rainfall of 1692.93 mm. Area enjoys more than 50 rainy days (though the figure is getting less year by year). This hilly terrain has heights varying from 274-meter a.s.l. (The point where river Ib leaves the distt.) to 1136 meter a.s.l. (Khudia Rani Pat Bijaghat).

Ranchi capital of Jharkhand surrounds Jashpur from North and East . Sundargarh, a district of Orissa delimits Jashpur in South &

Western boundary. In the western and southern portion of Jashpur Raigarh touches the distt. and in the East & Northern portion Surguja is there.

Area is mainly divided into two distinct topographical structures i.e. upland, named Upper ghat and lowland known as Lower Ghat. Upper Ghat is virtually a broad ridge running NorthEast-SouthWest with Mahadanadi basin on its southeastern side and the fringe of gangetic basin to its northwestern side.

ii. Socio-economic:-

Demographic details reveal that Oraons and other tribals dominate in population (of 66.6%) figures, and SC are just 5.23%. But owing to dynamic govt. efforts, literacy rate has gone up to 54.6%. Eight types of tribal groups reside in Jashpur. Mostly dominated by Oraons they are Birhor, Korwa, Nagesia, Khadia, Kanwar, Gond and Asur. Oraons are disseminated all over the area while hill Korwas are found concentrated in various small pockets.

Previously, Korwas were very much engaged in hunting and profligate felling of trees. Later- as the various forest laws, policies, changed their face, tribals- specially Korwas refrained off of waver cultivation and ruthless felling. Hunting was again a point of conflict between department of forest and tribals. Which also got solved with time.

There are some unique lore of the area. They are:-

1. Karma - Karma festival is celebrated on Bhadrapad-Suklapaksh Ekadashi. This festival comes after the Agriculture operations of Kharif are completed. After the completion of the agriculture operations, the community prays to God named "Karma Dev" for the bumper harvest. It also signifies a celebration after the hard labour they have gone through the Agricultural operations. Young boys and girls fast during the day and in the evening bring a branch of the tree "Karam Tree" and plant it in the verandah of the house of the head of their community. Java and wheat is germinated a few days earlier and the small plants are put in a small bamboo basket and placed before the branch of the Karam Tree. This branch represents Karam Deo. A lamp is lit and placed before Karam Deo.



2. Sailsa - In the month of Aghan, the villagers go to the adjoining villages to perform the Sailsa Dance. According to Dalton, it is a dance of the Dravidian Community. The group of Sailsa Dancers go to each house and perform the dance. They have small sticks of their hand and this stick is struck at the stick of the person dancing next to him. They move in circles in clockwise direction, then they turn around and move Anti-clockwise.



3. Suga Dance :- This is basically a dance of the women folk. Like the sailsa, the women use small stick in the same way expect that there is no

down ward movement of the stick. They move in circle dancing and singing. A pot containing rice with a few wooden parrots coloured with paint is placed in the centre.

FESTIVALS: - The main festivals of India like Diwali, Dushehra, Holi etc. are celebrated in District Koriya also. Some other festivals like are also special among the Koriyan communities. They are :-



1. Ganga Dashera - Ganga Dashera is celebrated on Bhim Seni Ekadashi. It herealds the sowing of Kharif srops. There are folk dances in which men, women, boys and girls dance together singing romantic songs.

2. Charta - It is celebrated on the Purnima (Full moon day) in Paus month. At this period of the year, the cultivator has harvested and brought home his Agriculture produce. In the evening, the young maids of the village cook the collected food near the village tank or on the banks of river or rivulet and then they have a community feast. It is essentially a festival to celebrare the harvest.

3. Navakhai - This is the festival which is celebrated by Agriculturists of all communities. When the paddy harvest starts, the new rice is offered to the family Deity on the Navmi preceding the Vijai Dashmi.

Surhul - This festival is celebrated when the Sal Tree starts flowering. Only some communities celebrate this festival. Mother earth is worshipped on this day. It is prohibited to plough the fields or do any form of digging of the Earth. Villagers go to the village "Sarna" (A small patch of forest within the village) and worship there. The Oraon community celebrate the marriage of the Sun God to Mother Earth.

Slowly things changed, and korwas, along with other tribals started raising agricultural crops in routine. Today they are not only using modern agricultural techniques, but they are educated to a respectable level, too. Govt. subsidies are being provided to them in various facets of life.

Mostly their habitations are in vicinity to forests, and so, their dependence on forests is much for NTFPs small timber, fuel wood, and also for tubers. They as urban population, are mostly edict of tobacco and always keep a small utensil made of hollow, bamboo named as KHUDRU.

iii. Ecological:-

Erratic annual rainfall with difference in topography, allows varied types of forest to come up. Mostly on higher altitudes, Sal Savannas occupy the area. Lowlands have mixed forests, with peninsular high level Sal forest in the middle sloppy areas. Classification of forests, found in the area (Champion & Seth) is as follows: -

Forest	No. in MP	Champion seth	Types
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Sal	6	1.3C.C2.e(I)	Moist Peninsula High level Sal
	8	1.3.C.C2 DSI	Moist Sal Savanna
	16	II.5 B.C/C	Dry Peninsular Sal
Mixed	15	II.5 A.C3	Southern Dry Mixed Deciduous

Because of various types of environments, there exist some distinct ecosystems viz. Riparian ecosystem in the area of Ib River and its tributaries, Savanna Ecosystem on Khudia highland, Dry deciduous mixed forest system. Hill ecosystems are mostly found on pats and khudia highland, whereas Dry Deciduous Mixed forest Systems are Common in Nicheghat Every one of these systems has its own characteristics and typical animal type associations.

In Agroclimatic terms, Jashpur falls in category III-Northern hills zone of Chhattisgarh (Part of 12 zones in undivided Madhya Pradesh). There are 7 zones of agroecological regions (Identified by NBSS & LUP 1993) out of which Jashpur is in J3 C3 area (11th region of India (Adv for NBSS & LUP 1993) The area has sub humid ecosystem.

In common agricultural practices in the area, pattern of erosion plays an important role. Fine earth when eroded, slides suddenly to depth of 20-30 feet. Nalas are frequently getting eroded head-ward. So people residing in vicinity, use to flatten the collapsed material on the nala bed 20-30 feet below the normal surface level, leaving a channel for water, running parallel to

vertical walls of nala and start farming there itself. This practice is repeated, with the pace of the head-ward erosion. This typical farming practice avoids the other wise loss of Land for farmers.

iv) **Brief history, including historical changes in land/water use:-**

Having a glance of agricultural statistics (MP) for the year 1976, 81, 88, 90-91 & 93-94, we can observe that during the period of two decades (of 1975-1995), land under sowing has increased approximately equal to the shrinkage in culturable waste lands. One of the reasons can be population growth which must have underlined the need of more sowing area. Though gross cropping area increased during the period, but the area under 2 or more crops shrunk. Forestland was lost and non-agricultural use of land was increased. Area under barren and un-culturable status increased. During the time use of fertilizers increased by 7 times in these two decades.

All these facts indicate that, even when total area sown was increasing, fertilizers were in frequent use, Land under non-agricultural use area was also increasing. Forests also got shrunk, tendency of growing pulses, nuts and other non.-conventional crops was in progress.

Land Utilization Statistics

Raigarh - Jashpur

Year	Geographical Area	Forest	Land put to Non-Agricultural uses	Barren and Un-culturable lands	Permanent Pastures and other grazing lands	Misc. tree Crops and Groves	Culturable Waste land	Current Fallows	old Fallows	Net Area sown	Area sown more than once	Grass Cropped Area
1975-76	1323.2	428.9	68.9	112.8	99.8	0.4	35.8	32.1	34.7	510.0	40.0	550.0
1980-81	1298.3	403.3	68.8	110.2	101.2	0.1	18.0	35.6	42.9	518.2	34.9	553.1
1985-86	1298.4	401.6	70.0	109.6	99.6	0.1	14.9	36.9	30.3	535.4	86.2	571.6
1986-87	1298.4	383.4	71.2	118.4	100.6	-	14.8	37.1	29.0	543.9	34.7	578.6
1987-88	1298.3	393.7	71.5	118.3	100.6	0.1	11.9	35.6	29.2	543.8	37.0	580.8
1988-89	1298.3	383.7	71.3	118.2	100.1	0.1	14.8	29.7	33.3	547.1	34.4	581.5
1989-90	1298.3	383.1	71.6	118.1	100.3	0.2	15.3	34.4	29.4	544.9	35.0	579.9
1990-91	1298.4	384.2	71.7	118.3	100.1	0.2	15.3	33.7	29.2	545.8	37.2	583.0
1991-92	1298.5	384.0	72.0	118.4	100.8	0.2	14.4	33.7	28.9	546.1	35.5	581.6
1992-93	1298.5	384.7	70.0	118.1	101.7	0.1	15.5	35.3	29.1	544.1	33.2	577.3
1993-94	1298.5	384.8	70.2	118.0	102.4	0.1	15.2	34.2	28.1	545.5	36.0	581.5

Source:- Agricultural Statistics (M.P.) for the year 1976,1981, 1988, 1990-91 and 1993-94

CHAPTER-III

CURRENT (KNOWN) RANGE AND STATUS OF BIO-DIVERSITY

(i) State of Natural Ecosystems and plant/animals species

Topographically Jashpur has two dominant features – one is Pat other is Plain. Pats cover about half the area of district. Because of difference in latitudes of the two areas, forests, agricultural produces other crops, aquatic ecosystem are also different.

Because of complex climatic factors and topography, there are many plant species which are endemic to the area viz. Saphora bakari, Lespedeza, Dai-drovium Formosum and Nogro.

About 250 types of members of plant kingdom are found in the area, covering various sites right from grass level to huge trees. Some of them are medicinal herbs, 9 types of edible mushrooms are reported in Pats of Jashpur and adjoining Surguja distt. Not less than 43 animal varieties (inclusive of fishes) are found in the area.

Owing to typical topography, soil of Pat area has a character of collapsing. This gives another arena of agriculture to local people, which is in steps.

There are two dominant eco-systems in the District. Either of the two are terrestrial in nature. One is agriculture including grains, millets, pulses, oil seeds, fruits, vegetables and other cultivated items. the second eco-system comprises of forets and protected areas. the two systems are dealt in detail in the presnt chapter:-

3.i.a Forests :-

The ecological forest types according to the revised classification of forest types in India, by 'Champanion & Seth' in the area is follows: -

S.No. of forest types in M.P.	Classificatio no. of forest types	Forest types	Name of Ranges
Sal Forest 6	I.3C.C2. e(i)	Moist Penunsular Hight level sal forests	Nagar, Sanna, Marbel block of Kansabel range and slopes leading to Kunjara & Badalkhol ranges
Sal Forests 8	I.3.C2.DSI	Moist Sal savana forests	Sanna Range (high-lands of Khudia)
Sal Forests 16`	II.5B.C/C	Dry peninsular sal forests	Kunjara range, Kansabel, Tapkara and Badalkhole ranges.
Mixed Forests 15	II.5A.C3	Southern dry mixed deciduous forests	Kunjara, Kansabel, Tapkara and Badalkhole ranges.

Talking of Jashpur, the area can be identified having two very distinct topographic features i.e. Pats – the high lands and the low-lying plains. Pats have fragment exposure of igneous rocks, mainly granites and metamorphic – gneisses, giving rise to more granular kankar and coarse sandy soil. In lower areas soil is more fine, loamy – clayey favoring crops of oilseeds and pulses.

There is a combination of plateau and valley in the pat area where vegetation of high lands flourish in vicinity to vegetation of low lands along with topographical diversity line. This unique biodiversity area has been selected as a fours of conservation.

In the South eastern portion of district, lies the reparine-system of river IB which flows out to Orissa through the much old rocks, creating a terrain fit to be a good habit for herpatofauna. Tributaries of Ib, making favorable environment for Snakes, Scorpions, lizards and others reptiles. High concentration of these reptiles results in frequent encounter with human beings.

This scenario has posed a negative image of snakes especially of karits, pushing the life of poor creature into hurdles. There was a time when people use to kill this Snake on the first sight. Biting without a warning is the nature of karit which makes it more dangerous. Livelihood and style of living of local people makes a good place for krait to attack, Cool, damp, dark hiding place which is behind earthen pots. Kept for long time undisturbed, files not turned for many years, thatching grasses not changed even up to rotten stage, invites the krait.

The scenario today, is that even local people can feel that sighting of krait is comparatively lesser as was a decade back. They felt that if the Snake was protected, it is a good treasure for the area. So, this area is chosen as the priority area for conservation.

Study of Agriculture statistics (M.P.) for the year 1976, 1981, 1988, 90-91, 93-94 reveals that in the period of 1975-94 area under paddy has gone up by 120% whereas of wheat has come down by 40%. Area under Barley has increased 14 times, of Urad by 1.5 times Ground nut & Sesamum are being sown in an area which is 10-12% more than of 1975 Even fruits and vegetables have enjoyed an increase in area by 1.5 times. Pulses area got Shrunken (exception Urad) with kulthi shrinking most. (half the area was lost)

As we look the statistics of production, kulthi was least. During the period of 75-94 irrigation facilities were extended by two and a half times and use of fertilizers by 7 times to what it was in 1975. Paddy was irrigated in area thrice to 1975, grams 9 times, cereals irrigated area went up to 239% (Total food crops 213%) but high yielding varieties coverage was mostly shared by paddy (3 times) and maize (585%).

In village meetings it was told that kulthi was a pulse with a lot of medicinal value on a cure to kidney disorders and a pre requisite to newly borns. The feeding of the area today (for kulthi) is met by that of kulthi of karnataka

and belgaon. Attempts to regenerate this pulse have been failed, local pulse variety is getting extinct day by day.

People gave first priority to preservation of kulthi followed by increasing its area of sowing. So, area of kulthi was prioritised as a focus of conservation.

Status of wild flora and fauna is depicted in **Ann. xii**

The details of forests of Jashpur is as follows :-

⇒ **1) 1.3C.C2.e(i) Moist Peninsular High Level Sal Forests**

These forests are in Nagar and part of Sanna ranges (excluding Khudia). The characteristic floristic composition of the type is: -

Top canopy trees: -

Sal (*Shorea robusta*), Saja (*Terminalia tomentosa*), Khairi (*Acacia lenticularis*), Bahera (*Terminalia belerica*), Potei (*Hymenodictyon excelsum*), Dhaora (*Anogeissus latifolia*), Karam (*Adina cordifolia*), Bija (*Pterocarpus marsupium*), Dhobin (*Dalbergia paniculata*), Badhan (*Ougeinia oojeinensis*), Harra (*Terminalia chebula*), Tun (*Toona ciliata*), Semal (*Salmalia malabarica*), Am (*Mangifera indica*), Makarkusum (*portium serratum*), and Champa (*Michelia champaca*), are present along the streams and in sheltered valleys.

Underwood: -

It consists of Putri (*Croton oblongi-folius*), Burju (*Bauhinia retusa*), Raindaton (*Schefflera venulosa*), Lodh (*Symplocos racemosa*), Baghmuta (*Pittosporum floribundum*), Kumbi (*Careya arborea*), Hundru (*Wendlandia tinctoria*), Ghui (*Ficus cunia*), Gular (*Ficus racemosa*), Khakra (*Ficus palmata*), Pakar (*Ficus lacor*), Aonla (*Embllica officinalis*), Baranga (*Kydia calycina*), Mokha (*Schrebera swieteniodes*), Bhilwa (*Semercarpus anacardium*), Amaltas (*Cassia fistula*), Char (*Buchanania lanzan*), Tendu (*Diospyros melanoxylon*), Papra (*Gardenia latifolia*).

Undergrowth: - (Shrubs and Herbs)

Dhawai (Woodfordia fruticosa), Paink (Moghania chappar), Jirhul (Indigofera cassiodes), Chhind (Phoenix acaulis), Putus (lantana camara), Chakkor (Cassia tora), Tikur (Curcuma angustifolia), Karonda (Carissa opaca), Marorphali (Hali cteresisora), Kharhar (Gaardenia turgida), Mona (Randia dumetorum).

Climbers: -

Sihar (Bauhinia vahlii), Bendo (Butea parviflora), Gurar (Millietia auriculata), Ramdaton (Smilax zeylanica), Kargi-kanta (Asparagus racemosus), Kimach (Mucuna purita), Keonti (Ventilago calyculata).

Grasses: -

Churant (Heteropogan contortus), Chhero (Imperata cylindrica), Ratha (Themeda quadrivalvis), Pudlusi (Eragrostis tenella), Marwal (Dichanthium annulatum), kansi (sacharum spontaneum), Dood (Cynodon dactylon).

⇒ 2) Mixed Forests of Uperghat:

Mixed forests of Uperghat occupy an area of about 25 sq.kms. These are found in small patches in the moist sal forests.

The characteristic floristic composition of the type is: -

Overwood: -

Saja (Terminalia tomentosa), Salai (Boswellia serrata), Dhoara (Anogeissus latifolia), Harra (Terminalia chebula), Bahera (Terminalia belerica), Haldu (Adina cordifolia), Khairi (Acacia lenticularis) Kullu (Sterculia urens).

Underwood:

Char (*Buchanania lanzan*), Anola (*Embllica officinalis*), Tendu (*Diospyros melanoxylon*), Jamun (*Syzygium cumini*), Kekat (*Garugapinata*), Kari (*Miliusa tomentos*), Senha (*Lagerstroemia parviflora*), Papra (*Gardenia latifolia*), Tewar (*Bauhinia malabarica*).

Undergrowth: -

Dhawai (*Woodfordia fruticosa*), Thilhi (*Wendlandia exserta*), Mona (*Randia dumentorum*), Kharhar (*Gardenia turgida*), Ghont (*Zizyphus xylopyra*), Chhind (*Phoenix acaulis*), Paink (*Moghania chappar*), Putus (*lantana carnara*), Putri (*Croton oblongifolius*), Karonda (*Carissa opaca*).

Climbers: -

Kujri (*celastrus paniculata*), Rarndaton (*Smilax zeylanica*)
Sihar (*Bauhinia vahlii*).

Grasses: -

Churant (*Heteropogan constortus*), Pudlusi (*Eragrostis tenella*), Ratha (*themedra quadrivalvia*).

⇒ 3) 1.3C.C2.DSI – Moist Sal Savana Forests: -

Of the highlands of Khudia (Uperghat). These forests are found in Nagar and part of Sanna ranges. The charastics floristic composition of the type is: -

Top canopy trees: -

Sal (*shorea robusta*), Saja (*Terminalia tomentosa*), Khairi (*Acacia lenticularis*), Bahera (*terminalia belerica*), Potei (*Hymenodictyon excelsum*), Dhaora (*Anogeissus latifolia*), Bandhan (*Ougenia oojeinensis*), Harra (*Terminalia chebula*), Tun (*Toona ciliata*), Semal (*Salmalia malabarica*), Am (*Mangifera indica*), Makarkusum (*Protium serratum*) and Champa (*Michelia champaca*).

Underwood: -

It consists of Putri (Croton oblongi-folius), Burju (Buhinia retusa), Raindaton (Scheffora venulosa), Lodh (Symplocos racemosa), Baghmuta (Pittosporum floribundum), Kumbi (Careya arborea), Hundru (Wendlandia tinctoria), Ghui (Ficus cunia), Gular (Ficus racemosa), Khakra (Ficus palmata),

Aonla (Emblica officinalis), Baranga (Kydia calycina), Mokha (Schrebera swieteniodes), Bhilwa (Semercarpus anacardium), Amaltas (Cassia fistula), Char (Buchanania lanzan), Tendu (Diospyros melanoxylon), Papra (Gardenia latifolia)

Undergrowth: - (Shrubs and Herbs)

Dhawai (WoodFordia fruticosa), Paink (Moghania chappar), Jirhul (Indigofera cassiodes), Chhind (Phoenix acaulis), Putus (lantana camara), Chakkor (Cassia tora), Tikur (Curcuma angustifolia), Karonda (Carissa opaca), Marorphali (Hali cteresisora), Kharhar (Gaardenia turgida), Mona (Randia dumetorum).

Climbers: -

Sihar (Bauhinia vahlii), Bendo (Butea parviflora), Gurar (Millietia auriculata), Ramdaton (Smilax zeylanica), Kargi-kanta (Asparagus racemosus), Kimach (Mucuna purita), Keonti (Ventilago calyculata).

Grasses: -

Eragrostis tenuifolia, Sporobolus piliferus, Andropogon acinoides, Chrysopogon aciculatus, Perotis latifolia, Euphoibia prolifera, Alysicarpus bupleurifalius, Lespideza sericea, Churant (Heteropogon contortus), Chhero (Imperata cylindrica), Ratha (Themeda quadrivalvis), Pudlusi (Eragrostis tenella), Marwal (Dichanthium annulatum), Kansi (Sacharum spontaneum), Doob (Cynodon dactylon).

⇒ **4) II.5B.C1.C – Dry Peninsular sal forests: -**

Ecompassing major portion of the Badalkhol range in the Nichghat resion. The characterstic floristic composition is: -

Overwood: -

Sal (*Shorea robusta*), Saja (*Terminalia tomentosa*), Dhoara (*Anogeissus latifolia*), Gamhar (*Gmelina arborea*), Haldu (*Adina cordifolia*), Harra (*Terminalia chebula*), Kekut (*Garuga pinnata*), Mahua (*Madhuca indica*), Pakar (*Ficus lacor*), Mundi (*Mitragyna parviflora*), Khairi (*Acacia lenticularis*), Bahera (*terminalia belerica*), Bandhan (*Ougenia oojeinensis*), Bahera (*Terminalia belerica*), Semal (*Salmalia malabarica*), Bija (*Pterocarpus marsupium*), Salai (*Boswellia serrata*), Senha (*Lagerstroemia parviflora*), Kasai (*Bridelia retusa*), Kullu (*Sterculia urens*), Dumer (*Ficus racemosa*), Am (*Mangifera indica*), Arjun (*Terminalia arjuna*), Jamun (*Syzygium cumini*).

Underwood: -

Aonla (*Emblica officinalis*), Char (*Buchanania lanzan*), Bhilwa (*Semercarpus anacardium*), Kari (*Miliusa tomentos*), Kumbhi (*Careya arborea*), Lodh (*Symplocos racemos*), Amaltas (*Cassia fistula*), Tilhi (*Wendlandia exserta*), Tewar (*Bauhinia malabarica*) Salosihar (*Casearia graveolens*), Maida (*Litsaea sebifera*), Bel (*Angle marmelos*), Putri (*Croton oblongifolius*), Tendu (*Diospyros melanoxylon*), Karra (*Cleistanthus collinus*).

Undergrowth: - (Shrubs and Herbs)

Dhawai (*WoodFordia fruticosa*), Ghont (*Zizyphus xylopra*), Kharhar (*Gaardenia turgida*), Jirhul (*Indigofera cassiodes*), Mona (*Randia dumetorum*) Chhind (*Phoenix acaulis*), Bhainsadahura (*Colebrookia oppositifolia*), Paink (*Moghania chappar*), Bankapas (*Azanza lampes*), Korya (*Holarrhena antidysentrica*), Khurlu (*Gardenia gummifera*), Karonda (*Carissa*

opaca), Khirsali (*Nyctanthes arbortristis*), Putus (*lantana camara*), Chakkor (*Cassia tora*), Gokhru (*Xanthium strumarium*).

Climbers: -

Palasbel (*Butea superba*), Kujri (*Celastrus paniculata*), Keonti (*Ventilago calyculata*), Ramdaton (*Smilax zeylanica*), Dhoto (*Ampelocissus latifolia*), Dudhi (*Cryptolepis buchmanii*), Gurar (*Millietia auriculata*).

Grasses: -

Sukul (*Heteropogon contortus*), Pudlusi (*Eragrostis tenella*), Ratha (*Themeda quadrivalvis*), Marwal (*Dichanthium annulatum*), Chhero (*Imperata cylindrica*), Ghora-punchi (*Aristida setacea*), Kansi (*Sacharum spontaneum*).

⇒ **5) II.5A.C3 – Southern Dry Mixed Deciduous Forests: -**

They form the major portion of the forests in Tapkara, Kansabel, Kunjara ranges and part of the forest area in Badalkhol range.

Overwood: -

Salai (*Boswellia serrata*), Saja (*Terminalia tomentosa*), Mahua (*Madhuca indica*), Dhoara (*Anogeissus latifolia*), Harra (*Terminalia chebula*), Gamhar (*Gmelina arborea*), Bar (*Ficus benghalensis*), Karam (*Adina cordifolia*), Pipal (*Ficus religiosa*), Kekut (*Garuga pinnata*), Kusum (*Schleichera oleosa*), Mundi (*Mitragyna parviflora*), Semal (*Salmalia malabarica*), Dhaman (*Grewia tiliaefolia*), Dhobin (*Dalbergia paniculata*), Khairi (*Acacia lenticularis*), Am (*Mangifera indica*), Arjun (*Terminalia arjuna*), Sal (*Shorea robusta*).

Underwood: -

Aonla (*Emblica officinalis*), Ghont (*Zizyphus xylopyra*), Bhilwa (*Semercarpus anacardium*), Char (*Buchanania lanzan*), Tendu (*Diospyros melanoxylon*), Bhirra (*chloroxylon swietenia*), Bel (*Angle*

marmelos), Baranga (*Kydia calcina*), Papra (*Gardenia latifolia*), Kumbhi (*Careya arborea*), Tinsa (*Ougeinia ojeinsis*), Karra (*Cleistanthus collinus*), Tewar (*Bauhinia malabarica*), Palas (*Butea monosperma*), Ber (*Zizyphus mauratiana*), Gangala (*Cochlespermum religiosum*), Kasai (*Briedelia retusa*), Ghanto (*Schrebera swuentenioides*), Khair (*Acacia catechu*), Katmohli (*Bauhinia racemosa*), Khurlu (*Gardenia gummifera*), Amti (*Antidesma diandrum*), Kanchnar (*Bahinia variegata*), Charaigoda (*Vitex leucoxydon*).

Undergrowth: - (Shrubs and Herbs)

Dhawai (*Woodfordia fruticosa*), Chhind (*Phoenix acaulis*), Khirsali (*Nyctanthes arbor-tristis*), Bantulsi (*Eranthemum purpurascens*), Tilhi (*Wendlandia exserta*), Mona (*Randia dumetorum*), Salosihar (*Casearia graveolens*), Paink (*Moghania chappar*), Jirhul (*indigofera cassioides*), Chakor (*Cassia tora*), Putus (*Lantana camara*).

Climbers: -

Sihar (*Bauhinia vahlii*), Palasbel (*Butea superba*), Bendo (*Butea parviflora*), Garanj (*Acacia caesia*), Gurar (*Milliertia auriculata*), Keonti (*Ventilago calyculata*), Ramdaton (*Smilax zeylanica*), Dhoto (*Ampelocissus latifolia*), Dudhi (*Cryptolepis buchmanii*).

Grasses: -

Sukul (*Heteropogon contortus*), Pudlusi (*Eragrostis tenella*), Ghorapunchhi (*Aristida setacea*).

Bamboos: -

Bamboos have been practically disappeared from the division, due to flowering and fires. The species met with is *Dendrocalamus strictus*.

3.i.b -Status Protected Area system- Badalkhol Wild life Sanctuary:-

There is just one solitary PA in the district named as Badalkhol probably owing to the past history of heavy rains. Unfortunately, for the want of sufficient level of researches on wild-life knowledge of the area is limited in habitat momentum and regarding the effect of existing vegetation on the wild as well as on domesticated cattles. Sector of Eco-tourism is also untapped, which has a good potential in the area. Ergo, this has been framed in a form of strategy in the chapter meant for it. The official status of PA is as follows:-

Name	Badankhol Wildlife Sancturay
IUCN Management Category	IV (Managed Nature Reserve)
Biogeographical province	4 8 4 (Indus-Ganges Monsoon Forest)
Legal Protection	Under Wildlife Protection Act of 1972
Date Established	1975
Geographical Location	Jashpur, Chhattisgarh, India
Latitude	22*50'N
Longitude	23*50'E
Area	10.445 ha
Land Tenure	Government
Physical Features	Mainly undulation and hilly terrain Altitude ranges from 200-1,000m
Name	Badankhol Wildlife Sancturay
Vegetation	Moist deciduous forest consisting largely of Sal (Shorea robusta) and other miscellaneous species.

Fauna	Tigar Panthera tigrs, leopard P. pardus, striped hyaena Hyaena hyaena, jackl Canis aureus, sambar Cervus unicolor, nilgai Boselaphus tragocamelus and others
Conservation Management	Buffer zone and core area
Staff	Superintendent, game ranger, game forester and 10 guards
Budget	No special funds allocated
Local Administration	PO Bagicha, District Jashpur, Chhattisgarh

Range of Plant diversity as told by villagers in public meetings

1. T Sarai
2. T Saja
3. T Bija
4. T Sagaun
5. T Aam
6. T Harra
7. T Saliya
8. T Karmi
9. T Kosam
10. T Pipal
11. T Koha
12. T Tendu
13. T Khajur
14. T Karanj
15. T Jamun
16. T Neem

17. T Behra
18. T Neelgiree
19. T Bargadd
20. T Nariyal
21. T Putkel
22. MT Aonla
23. MT Bhelva
24. MT Imli
25. MT Khamhar
26. MT Kathal
27. MT Amera
28. MT Bel
29. MT dagdug
30. MT Dumar
31. MT Amti
32. MT Dhavanra
33. ST Char
34. ST Salosinhar
35. ST Amrud
36. ST Meva
37. ST Ber
38. ST Koynar
39. ST Kari
40. ST Karju
41. ST Kate
42. ST Anar
43. ST Charegori
44. ST Dhamboha

- 45. ST Karaunda
- 46. ST Dahu
- 47. ST Munga
- 48. ST Bans
- 49. B Dhavai
- 50. B Putus
- 51. B Khurul
- 52. C Sihar

53. C Kujri
54. C Kevati
55. P Gudrusag
56. P Sulyari
57. P Bhaji
58. P Dhuai
59. P Ber
60. P Baingsag
61. P Chidar
62. P Panisag
63. P Murisag
64. P Kendasag
65. P Lapeysag
66. P Kenasag
67. G Dubisag
68. G Sarvana
69. G Chhiroban
70. G Dalsag
72. G Karimsag
73. G Bomlisag
74. G Jatitarsag
75. G Ghirbelsag
76. G Bhotwasag
77. G Mungasag
78. T Saja
79. T Mahua
80. T Aam
81. T Pakri

82. T Karmi
83. T Koram
84. T Kusum
85. T Bija
86. T Ghata
87. T Dhawra
88. T Karmi
89. T Sahiya
90. T Foha
91. T Jamun
92. T Bathar
93. T Fafd
94. T Gegala
95. T Neem
96. T Nilgiree
97. T Khajur
98. T Harra
99. T Bahera
100. MT Dumar
101. MT Bel
102. MT Awanla
103. MT Sisam
104. MT Korkit
105. MT Chalbili
106. MT Senha
107. MT Kara
108. MT Kathar
109. ST Kendu

110. ST Char

- 111. ST Tihe
- 112. ST Kahe
- 113. ST Bihi
- 114. ST Gohar
- 115. ST Kaju
- 116. ST Nimbu
- 117. ST Kubhi
- 118. ST Sitafal
- 119. ST Lichifal
- 120 ST Maldas

Abbreviations used

- T - Tree
- MT - Medium Tree
- ST - Small Tree
- B - Bush/Shrub
- P - Herb/Planted Vegetation
- G - Grass/Vegitables

(ii) ***State of agricultural ecosystems and domesticated plant/animal species and varieties***

3.ii.a Agriculture Ecosystems: -

According to geographical conditions many varieties are being grown here. Many a times, crops ripening at the same time are different, because of different geographical entity. Table is as follows: -

Area	Name of crops	When Sowed	when reaped
Pats	i. Tau	September/October	Nov./Dec.
	ii. Madna, Jatangi	August/ September	Nov./Dec.
	iii. Potatos of Kharif, Mahua, Till Rahag.	July/ August	Nov./Dec.
	iv. Kodo-Kutki, Gondli	June/July	September
	v. Khutta of Dhan	April/May/June	September
	vi. Udad Dal, Makka, Dhan of Summer	February	June
Low lands	i. Lotni, toriya, Kulthi Grams, Vegetable	September/October	Dec./Jan.
	ii. Moong, Orad Dal, Gunja, Kulthi	August/September	Feb/March (Gunja,Kulthi in Dec)
	iii. Garuhan, Dhan, Rahas	July/ August	Oct./Nov.
	iv. Goda Dhan, Makka Kodu-Kutki	June/July	September
	v. Khurra of Dhan	April/May/June	September
	vi. Sugarcane/Summer Dhan	February	June
Bagicha & Narayanpur	i. Irrigated Dhan Pachheli Wheat	Dec./Jan.	April/May

ii. Wheat/Jan	November/Dec.	April
iii. Rai, Gram, Sarson Alsi, Masoor, Tiwra	Oct./Nov.	Feb/March
iv. Kulthi	September/October	November/ December
v. Shakkar Kand, Til Rahar	July/August	November/ December

These main agricultural ecosystems are associated with insects also. There is large number of insects, small fishes and other small animals specific for every crop along with their predators.

ASSOCIATION OF INSECT/PEST WITH CROP

S.No.	Crop	Insect Pests Associated	Natural Enemies
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I	Rice	<p>(i) Yellow stem borer – <i>Scirpophage</i> <i>incertules</i></p>	<p>Predetors Spiders –</p> <p>(i) Orgiope catenuleta (ii) Salty psyid (iii) Lycosa pseudoanulata</p> <p>Beetles –</p> <p>(iv) Micrespis beetle (v) Menochilis sexmaculata (vi) Ophionia nigrofesciata (vii) Conscephalus longipennis (viii) Microvelia dauglesi (ix) Misovelia vitigera</p> <p>Parasites (egg)</p> <p>(x) Trichogramma spp. (xi) Tetrastichus schonobii (xii) Telenomus robani (xiii) Amouromorpha asepta metalhoracica (xiv) Cherops broipterum (xv) Xanthopimle spp. (xvi) Temileucha spp. (xvii) Stenobracon nicevilii</p>
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		(ii) Gall midge – <i>Pachydiplosis</i> <i>oryzae</i>	Egg/larval parasite Platygaster oryzae Predator – (xviii) Ophionic nigrofasciate (xix) Piderus fusciceps
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		<p>(iii) Brown plan happer - <i>Nilepervata higen</i> & other hopper complex</p>	<p>Predatory spiders</p> <ul style="list-style-type: none"> a. Woly spider – Lycosa pseudganulata b. Tetragnatha spp c. Khubiona japossicola d. Calitrachae formosana e. Arenius instus f. Argiope catenulata g. Salty psid <p>Beetles</p> <ul style="list-style-type: none"> (i) Micrepsis beetle (ii) Menochilis sexmaculat a (iii) Ophionia nigrofasciat a (iv) Staphilinid beetle, piderus fusiceps (v) Limnogonu s sp (vi) Mirid bug (vii) Dragon fly
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II	Pulses Arhar	1. Tur plume moth -	
		2. Heliothis armigera	(i) Apanteles (ii) Campoletis chloridae (iii) Biacon spp.
	Urad	Aphids	Predators (i) Coccinella septumpunctata (ii) Chrysopa spp (iii) Syrphid spp
III	Oilseeds (1) Soyabea n	Stem fly	
		Defoliators including Red hairy ceterpullar Bihae hairy caterpillar & tobacco caterpillar (i) Dicrasia oblique (ii) Amsecta moorie (iii) Spodoptera litura	Egg parasite (i) Trichogramma spp Parasites (i) Apanteles spp (ii) Chelonomus spp

(2) Linseed	Budfly – <i>Dasineura lini</i>	Parasites (i) <i>Systesis desineuri</i> (ii) <i>Elesmus spp</i> (iii) <i>Eurotoma spp</i> (iv) <i>Terimus spp</i> (v) <i>Tetrastichus spp</i>
(3) Mustard	(i) Painted bug	Parasite (i) <i>Alophrora spp</i> (ii) <i>Bechertia mite</i>
	(ii) Saw fly	Parasite (i) <i>Perilesus spp</i>
	(iii) Web ceter pillar	Predators (i) <i>Basus spp</i> (ii) <i>Apanteless spp</i> (iii) <i>Bracon spp</i>
	(iv) Aphids	Pradator Diaretila rapae parasites (i) <i>Coccivella septumpuncteta</i> (ii) <i>Melochelis spp</i> (iii) <i>Chrysopa spp</i> (iv) <i>Sysphid flies</i>

Some agricultural produce like Tangan, Tau, Mahua, Bewra, Arhar, Khursa, Tongogoda Dhan are specific to pat areas were as kulthi, Paceheli, Wheat and irrigated dhan are specific to low lands they can not be replicated in are other area for many seasons.

3.ii.b Agricultural Diversity: -

Undivided Madhya Pradesh was divided into twelve agro-climatic zones which are 1. Chhattishgarh Plains, 2. Bastar Plateau, 3. Northern hilly regions of Chhattishgarh, 4. Keymore Plateau and satpuda hills, 5. Vindhyaachal Plateau, 6. Narmada valley, 7. Grid region, 8. Bundelkhand Plateau, 9. Satpuda Plateau, 10. Malwa Plateau, 11. Nimar Plateau, 12. Jhabua hills. The new state of Chhattishgarh covers within it, three agro-climatic zones out of the 12 zones, which are Chhattishgarh plains, Northern hills and Bastar Plateau. Sarguja and Jashpur district are covered under northern hill zone of Chhattishgarh. (Fig.4.1)

In Chhattishgarh region, bio-diversity is well maintained in rainfed as compared to irrigated ecosystem. (Fig 4.2: annual rainfall) which are always high input and hi-teck agricultural areas. Crops like rice, lathyrus, kodo, kutki, kulithi, sorghum, cotton, chickpea, pigeon pea etc. have good land races with diverse genetic variability. It has been observed that a large portion of this genetic diversity is vanishing and being substituted with high yielding varieties.

Rice is the staple food for about two-third of mankind of the total area of 42. M.ha. of rice in india, about 3.9 M.ha. is in Chhattishgarh region which is also called the “Rice Bowl” of undivided Madhya Pradesh, where about 85 percent net sown area in kharif is also under rice accounting for 86 percent of the total rice produced in the undivided state. There is a great bio-diversity in this region.

The rapid spread of improved varieties has intensified the displacement of traditional cultivars (land races) and accelerated their extinction. The trend towards greater uniformity has increased the potential genetic vulnerability of the crop to epidemics of pests and diseases. Moreover, broad genetic base, required for further genetic improvement continues to shrink.

The details of the indigenous collection of rice germ plasm made by Dr. R.H. Richharia and his groups are as given below: -

S.No.	District*	Number of accessions
1	Bilashpur	1121
2	Surguja	651
3	Raigarh	1239
Total		3011

* Pre-bifurcated districts

In Chhattishgarh about 15018 numbers of accessions of rice were found. Besides maintaining the material collected by Dr. Richharia and his group, a collection of wild rice (*Oryza nivara*), which is abundant in Chhattishgarh region, was made in IGAU-NBPGR-IRRI joint exploration. Currently the Indira Gandhi Agricultural University is maintaining 21.381 accessions of rice, which is the largest collection, maintained by any institute in India. The details of accessions being maintained are as under (of undivided M.P.)

Genetic Resources in Chhattisgarh State

S.No.	Maturity group	Duration (Days)	Number of accession
A. Indigenous Rice			
1	Extra Early	Upto 95	480
2	Very Early	96-110	1197
3	Early	111-125	3880
4	Medium	126-140	5071
5	Late	Above 140	7915

		Total	18,543
B. Selected lines	BD Nos. & others	-	938
C. Breeding lines	Labhandi Nos- 442 DT Nos 274	-	716
D. Wild Rice	-	-	210
E. Miscellaneous	Upland 213, Elite lines 110, Other-651	-	974
		Total	2838
		Grand Total	21,381

■ **Agro-Bio-diversity in Surguja and Jashpur district: -**

The main food grain of Surguja district is paddy. Surajpur, Ambicapur, Sitapur and Lakhanpur Tehsils are the rice belt. Vishnu bhoag, Jeerafool, Basmati are the main rice varieties sown by the farmers for bussiness purpose. Green vegetables are available in all of the twelve months of the year. Sugarcane also forms one of the main Agriculture crops. Sugarcane is mainly produced in Batoli, Lundra and Ambikapur block. Every farmer has Sugarcane planted area of three to ten Acres. The main Agriculture crop are Maize, Paddy, Wheat and Sugarcane and in pulse Arhar, Udad, Massur and Kulthi.

Details of varieties of paddy as told by villagers in village meetings.

Igthjk ¼dkykthjk½
ljfj;k
xksikyHkksx
dchy daB
ljuk
dyenkuh
jenh

ijlkHkksx
cklQwy
nqcjkt
dfyaxk
'kkjnk
MkaM IQjh
iqubZxksMk

'kSSdh
iksMs
'kksMh
dud
lkjks
pudpwj
mtjxksMk

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fNUnekSjh
tkS Qwy
f>yh
VkWxksxksM+k
vkbZ-vkj- 36
fldjh
fdjfeV~Vh
inek
tsatusa
eUlwjh
rsUnqeq<h
ek;k
djguh
pjbZu[kh
jkuhdkjtj
la>yh
'khryHkksx
yqpbZ
jk;pqu
HkqMdqj
vlfe;k
dVgj pkaik
djuh
'kgj pkaik
ikfjtkr
uCcs ua0
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yjaxxksMk
xsnkjbZy
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cPpk dye
lj;k
jk;pquh
ikbZuMqCch
esokj
letbZHkksx
gsjeks
xqMjhHkksx
jkuheq.Mh
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Hkqlh
jkmrxksyh
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MkMeqMh
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dqEgjkZu
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ykSa/kh
ckalHkqjrk
fcjgksyh
ckn'kkGhksx
{ks=kh; Hkksx
jlden
fo".kqHkksx
dkykxksjMk
gq.Mk
y{ehHkksx
gUlyh
eksrhpqj
foy;yqath
thjkQwy
dSrdk
Økarh
vkbZ- vkj- 64
flDdh
MMflDdh
louhxksMk
:ph
diwjHkksx
Mqefj;k

dsUn Qqy
jkethjk
Jo.kh

egkek;k
lathjk
ckynqykj

crjkbZy

In Jashpur district mostly the entire population irrespective of profession depends upon agriculture to an great extent. Rice forms the principal produce 141 varities and identified by BD work group. The other food crops are Magdi (*Eleusine corocana*), Gondhi (*Penicum miliare*), Rahar (*cajanus indicus*), and the earlier and smaller varieties of Kandul and surti (*Phaseolus spp.*) Urdi (*Phaseolus munga*) is widely cultivated and mung (*Phaseolus radiantus*) is grown as a second crop. Khurthi (*Dolichos biflorus*) is in baries. Wheat is also cultivated in areas where irrigation facilities have been provided Ganna or katari (Sugar cane) is also being sown in small patches in irrigated fields as a cash crop. The other principal cash crops are sarsom (*Brassica campestris*), Jatangi (*Guizotia abyssynica*), Til (*Sesamum indicum*) and groundnut (*Arachis hypogea*).

Bilaspur division falls under the two zones namely Northern hill zone and Chhattisgarh plains. In Chhattisgarh apart from rice wide variability of the traits exists in the agricultural and horticultural crops. Details are given below for the northern hill zone (as Jashpur surguja falls under this agroclimatic zone).

Northern hill zone:-

Food Grains:

S.N.	Name of the Crop	Scientific Name	Common Name	Character Variation
1	Maize	<i>Zea mays</i>	Makka	Duration seed colour, seed size protein content, coblength. No of cobs.

2	Kodo millet	Paspalum scrobiculatum	Kidin	Plant pigmentation, Tiling, Duration Grain size Ear length. Grain size, Tiling
3	Little miller	Panicum	Cheena	Far length grain size, tiling
4	Common millet	Panicum milliceum	Cheena	Far length grain size tiling
5	Italian millet	Setaria italica	Katun	Spike length, seed colour, tiling, duration.

Oil Seeds

S.N.	Name of the Crop	Scientific name	Common Name	Character Variation
1	Repeseed-Mustard	Brassica spp.	Toria, Sarson	Duration, Plant heigh, no. of capsules, adaptability, seed size
2	Niger	Guizotia abyssinica	Ramtil	Plant heigh, no of capules, seed size

Pulses

S.N.	Name of the Crop	Scientific name	Common name	Character Variation
1	Green gram	Vigan mungo	Moong	Duration plant type seed size & colour, clustering, pod length, adaptability (Utera)
2	Black gram	Vigna radiata	Urad	Duration plant type seed size & colour, clustering, pod length, adaptability (Utera)
3	Grass pea	Lathyrus sativus	Lakh, Lakhri	Seed size, shape, Adaptability, wild species, ODAP content Duration
4	Red gram/Pigeon pea	Cajanus cajan	Arhar/Tur	Plant height, habit, Duration, Seed size, Colour, Disease reaction, Wild species.

5	Chickpea	Cicer arietinum	Chana	Types (Deshi, Kabuli, Gulabi), Seed colour, Size, Shape, Duration, Adaptability, Habit.
6	Horse gram	Macrotyloma biflorus	Kulthi	Plant type, Seed colour, Seed size, Flower colour, Adaptability
7	Rice bean	Vigna umbellata	Sutari bean	Habit, Duration, Seed, Size, Colour, Wild Species, Pest & Diseases resistance

■ **DESCRIPTION OF SOME AGRICULTURAL PRODUCTS OF JASHPUR**

1. Rice; (Oryza sativa L.)

This is the staple food of the area. BD work-group has listed 141 types of paddy being grown here. Rice of higher altitudes is quite different from those of lower area. Many of the varieties are being grown in IGKV. Area-sown as well as productivity has risen to a fair high degree.

2. Maize (Zea mays);

Area-sown for Maize has bumped so much that this can be named as most important kharif cereal of the area. All over Pats, this flourishes well.

3. Horse gram (Macrotyloma uniflorus L)

Locally known as Kulthi, this pulse has a great medicinal value too. Owing to less productivity this crop is losing ground very rapidly. Unfortunately, agriculture deptt. has not kept this produce in priority list. BD work-group is now trying to preserve this valuable pulse with NBPGR (National Bureau of Plant Genetic Resources), New Delhi. BD Work group is trying its level best to disseminate it to the areas where it came up well previously. This is coming up in Bagicha and Pathalgaon blocks.

4. Urid and Gram;

Urid and gram take the seat just after paddy. The two are hot favourite of the local residents.

5. Niger (Guizotia abyssinnica)

Local vernaculars are Ramtili, Jatgi, and Gunja. Bright yellow carpet like look makes this crop very attractive. In tough localities, where agricultural practices are nearly impossible, this comes up well. This yields oil which is cheap, readily available, and edible.

Fruit Crops

S.N.	Name of the Crop	Scientific name	Common name	Character Variation
1	Mango	Mangifera indica	Aam	Fruit size, Shape & colour at ripening stage, maturity time, fruit flower, fiber percentage, pulp percentage, juice percentage, T.S.S. Percentage, Acidity Percentage, keeping quality Bearing habit
2	Guava	Psidium Guayaya	Amrud	Plant height, Tree spread, Fruit shape, pulp colour and flower, number of seed per fruits, fruit skin colour at ripening, dots on fruit skin, TSS percentage and acidity percentage
3	Custard apple	Annona squamosa Annona reticulata	Sitaphal/ Ramphal	Size of fruit, shape & size, no. of seed, Sugar content
4	Aonla	Phyllanthus Emblica	Aonla	Size of fruit, shape, Vit. C content, Seed size, Plant growth habit
5	Jack Fruit	Artocarpus heterophyllus	Kathal	Fruit size, Maturity, Early bearing
6	Ber	Zizphus Mauritiana	Ber	Size of Fruit, Growth habit, Skin colour of fruit, Sweetness of fruit, fruit shape, fruit quality
7	Kagzi lime	Citrus aurantifolia	Nimboo	Fruit size, bearing habit, acidity content, fruiting time
8	Cashew	Anacardium occidentale	Kaju	Leaf colour, fruit shape, fat & protein content
9	Jamun	Syzigium cumminii	Jamun	Fruit size, fruit content, juice quality
10	Litchi	Litchi	Litchi	Shape, size color of fruit,

		chinensis		no. of fruit/cluster, early bearing
11	Beal	Aegle Marmelos	Bael	Fruit size, taste
12	Wooda pple	Limonia acidissima	Kaith	Fruit size, pulp content
13	Chironji	Buchanania Latifolia	Achari/ Chironji	Fruit size, kernal size
14	Khirni	Monikara hexandra	Khirni	Rate of quality, early bearing
15	Kamrakh	Averrhoa carambola	Kamrakh	Early bearing, fruit size, acidity percentage
16	Papaya	Carica Papaya	Papeeta	Size, shape of fruit, sweetness, seed content, colour of pulp, papain content, plant height
17	Markingnut	Semicarpus anacardium	Bibba	Size of different parts yeild
18	Gular	Ficus spp.	Gular	Fruit size, color shape, and sweetness
19	Karonda	Carissa canards	Karonda	Fruit size, Juice percentage

Vegetables

S.N.	Name of the crop	Scientific name	Common name	Character Variation
1	Cucumber	Cucumis sativus linn	Khira	Shape, size and color of fruit, seed content, leaf shape
2	Bottle gourd	Logenaria Siceraria	Lauki	Shape and size of fruit
3	Bitter gourd	Momordica charantia	Kerela	Shape and size of fruit, absence or presence of ridges on fruit, bitterness, fruit colour
4	Sponga Gourd	Luffa cylindrica Roem	Chilkani Toria	Shape & size of fruit, colour of fruit, stripes on fruit
5	Ridge Gourd	Luffa acutangula	Dhariwal Tora	Shape & size of fruit, color of fruit, stripes on fruit
6	Amaran thus	Amaranthus spp.	Chaulai	Growth habit, leaf colour,

				leaf shape & size
7	Drum stick	Moring spp.	Munga	Growth habit, pod shape & size
8	Curry leaves	Murraya koenigi	Mithaneem	Growth habit, leaf size
9	Snake Gourd	Trichosanthes cucumariana	Chichinda	Fruit shape & size, stripes type
10	Bothua	Chenopodium alba	Bathuva	Size of leaves and plant type
11	Lotus root	Nelumbo spp	Kamal kakdi	Root length and diameter
12	Kakrol	Momordica dioica	Khekasi	Shape & size of fruit intensity of spines
13	Teen pathi	Desmodium trifolium	Teen pathi	Leaf size and quantity
14	Mesta	Hibiscus sabdariffa	Ambari	Leaf shape & shape, sourness, plant type

■ **PROTHERBS BEING USED IN THE AREA:**

Palak

Chaulai(Lal and Khatta)

Lal bhaji

Bathua bhaji

Tinpania bhaji

Bohar bhaji

Sada bhaji

Maithi bhaji

Munga bhaji

Muli bhaji

Gobhi-bhaji

Gimma-bhaji

Paani-bhaji

Charota-bhaji

Muscani bhaji

Karmatta bhaji

Barra bhaji

Bemchi bhaji

Macharia bhaji

Beng bhaji

Dhasani bhaji

Saaru bhaji

Koilar bhaji

Mayur Chundi bhaji

Kamahali bhaji

Chitmiti bhaji

Jerenga bhaji

Spices

S.N.	Name of the crop	Scientific name	Common name	Character Variation
1	Coriander	Coriandrum sativum	Dhania	Regeneration ability, aroma
2	Fenugreek	Trigonella foenumgraecum	Methi	Size of leaf taste

Tuber Crops

S.N.	Name of the crop	Scientific name	Common name	Character Variation
1	Sweet potato	Ipomoea Batata	Sakar kand	Tuber colour, carotene, Plant habit
2	Aroids	Amorphohallus pacniifolius	Suran	Tuber size, Diegenin content
3	Taro	Colocassia esculanta	Taro	Corn size

Flowering Plants

S.N.	Name of the crop	Scientific name	Common name	Character Variation
1	Marigold	Tagetus spp.	Geenda	Flower colour, size shape
2	Kaner	Nerium spp.	Kanner	Plant type, flower shape, Colour & leaf shape and colour
3	China rose	Hibiscus spp.	Gunhal	Plant type, flower shape, Colour & leaf shape and colour

4	Jasmine	Jasminum spp.	Mongra	Flower shape, colour & plant type
5	Tube rose	Myacinthur indicus	Rajani gandha	Flower colour, type and fragrance
6	Chrysanthemum	Chrysanthemum Spp.	Sewanti	Flower size, colour, shape and plant habit
7	Rose	Rosa spp.	Gulab	Growth habit, flower colour shape & fragrance
8	Champa	Michelia champaka	Champa	Flower size, fragrance
9	Chandani	Tebernamentana caronaria	Chandani	Flower size, Number of petals
10	Gulturra	Poiciana Pulcherrem	Gulturra	Flower colour
11	Kachnar	Bauhinia spp.	Kachnar	Leaf size and colour
12	Sawani	Lagerstoremia indica	Sawani	Leaf size and colour
13	Harsingar	Nyctanthus artabortrisis	Harsingar	Fragrance
14	Night queen	Cestrum Nocturmum	Ratkirani	Fragrance
15	Madhukamani	Murraya exotica	Madhu kamini	Plant type
16	Mehandi	Lawasonia alba	Mahandi	Leaf size
17	Canna	Canna indica	Kardal	Leaf size, flower colour & size
18	Kawada	Aloe vera	Kawada	Plant type and flower size
19	Zinnia	Zinna elegeins	Zinnia	Plant type and leaf size
20	Balsan	Impatiens balsamina	Tiraiya	Flower color and size
21	Sunflowe	Heianthus	Suralmukhi	Flower colour & Plant type
22	Lotus	Lotus spp.	Kamal	Flower size and colour

CHAPTER-IV
PROBLEMS RELATED TO BIO-DIVERSITY

(i) **Proximate cause of loss of bio-diversity:-**

On the first glance on the momentum of change in quality as well as quantity of bio-resource in Jashpur, it seems that it is negative, we are losing many species day by day. This can be probed in sub heads :-

- a) Agriculture crops, and Vegetables
- b) Wild relatives of agro-crops, and Wild Vegetable spp.
- c) Wild Animals
- d) Domesticated Animals

As we know Post-independence era is the era of upliftment of small and people below-poverty-line (BPL), separate programmes have been launched which are sponsored by government. Animals were given to them, to enhance their regular income. They were provided high yielding and genetically modified seeds, in order to uplift their economy. They were also given subsidies in hybrid seeds provided by the govt. Ultimately, if the indigenous crop failed, there was a hybrid seed as an alternative. Failure could be because of variety of reasons, but even if yield came down a little bit, they were given other seeds, which were not indigenous. In course of time, the local seed was totally eliminated from the area, and today is scenario that approximately all the seeds are hybrid, pests infect these seeds, frequently. So, the circle of seed-crop-seed is completed with elimination of local seed. This was the practice, how Kulthi shrunk on the parameteses of nett area of sowing as well as yield per acre. Attempts by bio-diversity conservation workgroup, Jashpur, are now being taken up to replicate it.

Not only agriculture, exotic fishes are introduced on the name of nourishment, which are introduced into a pond only after total elimination of local fishes. This practice has also hampered the fish species diversity.

Veterinary department has a breeding programme to enhance the milk production of local cows. These cows are artificially inseminated by Holstiene bulls and the milk production virtually increases. But after this insemination , offsprings are useless. The bulls can not be used in fields.

If this sort of genetic experiment continues, local domesticated variety will definely abolish.

In wild, tubers are harmed by local people , owing to lack of awareness. Not only number wise, but also the way tubers are plucked harms the diversity of their species. Herbs and also the medicinal plants , are lost in the same way. Tubers have a natural power to come up again when plucked, but excessive consumption, which became discriminate in later stages sometimes, dents their population-at least locally.

Many a times, idea of conversion of an area to a profitable crop area, becomes a cause of loss of BD in that particular area. To enhance economyg of farmers, IR36, No 90 etc. rice types are promoted in Jashpur. But we must be equally concern about solid apprehension of local rice being totally abolished. Rehabilitation of Kulthi pulse in the district is one of the tasks to conserve local gene, which BD works group has taken up.

Conservation – Peoples perception

15-20 km. Of Jashpur is Kaire-Kinkel, villagers of the area are not well to do. As every where they are deprival of all necessary requisitor. But still the people know the importance of water conservation, without any government invitation or grant, they have choked many nalas, directed them and sometime small ponds are created in between crops. So even in harsh summer, they only quarter knowledge of hot summer in and around Jashpur. Kaire-Kinkel people take two crops a year, also many types of crops and other agricultural produce are raised.

Exotics, outnumbering local species, play a deciding role in shrinkage of original diversity of an area. Lantana camera and Parthenium for instance, are engaging the land wherever open or free area is available. Once entered a site these species never allow any vegetation to come up. Total Clearance of these must be taken in priority.

When we talk of forests, raising mono-culture of some species prioritized by FD is also responsible for reducing the scope of diversity of associates in a virgin forest. Not only the principal spp., which flourishes in the area, is eliminated, but also the complete set of association is under the threat of extinction. With time, edaphic factors also alter them with new circumstances.

Hunting or poisoning by local people harms animals. Reduction in forest cover plays an indirect role in their habitat destruction. So-called development envisages and accelerates masonry construction. Process needs metals from forests. Excavation for metals, raising buildings, preparation of roads literally spoils the equilibrium of borrowing animals or shy animals residing in caves and graves with their own habitat. This reflects a negative impact on local ecosystem, and this imbalance is reflected in local climatic factors, causing epidemics in human community also.

Besides lack of R&D in PA Badalkhol, there exists a baseless apprehension amongst people residing in vicinity to it. Area's habitats are getting dried up slowly, animals facing illeffects of destruction of their habitats, forests are besetted by a number of versatile problems.

Uncontrolled grazing and forest fires are common reasons, which can be, named as proximate cause of depletion of forest & local Bio-diversity.

ii) **Root causes for the loss of Bio-diversity:-**

Though, on the first glance, proximate causes seem to be responsible for depletion of whole of bio-diversity, but it is not so. Rooting of these causes are far away in the present social structure. Hiatus between the public and the implementation agencies is one of the causes that gives ill effect to the execution of planning. Policy makers must invite the public perception while deciding for actions that are going to affect them.

Lack of proper level of awareness is yet another root cause for BD depletion. For example -Krait Snakes were considered only the cause of death in Tapkara area. Most of the times, in appropriate planning (for the area concerned) are responsible to about the proximate cause of loss of bio-diversity. Our working plans address the fate of diversity in a way concentrating on treatment circle rather than overall BD in the area, this may be one of the reasons, why we sometimes lose many spp. In Surguja distt. people say that Mahul patta is cleared off frequently, so as to fulfil silvicultural and economic demands of forest/people. But it is clear now, that there have been many stakeholders in existence who are not invited to participate in planning process. Their role is either a positive listener or just source of information based on which the planners have to work.

Because of lack of administration and co-ordination, knowledge of proper policies suiting to the area, knowledge of existing rules and regulation of the land, requisite educational general awareness level is lacking. This lack of awareness results in profligate use of available natural resource causing imbalance in various sectors of local ecosystem. For example Krait snakes were killed on the very first sight in Tapakara area, whether the animal was harming or not. Even inter-departmental co-ordination is lacking.

Over-centralization of decision-making has catalyzed the gray portion in whys and how's of policy between implementation agency and the main stakeholder. Lack of feeling of ownership for bio-resource amongst

users, becomes a root cause for the loss of BD. Reasons for such thought may be many.

In India, Largest employment Sector is fuelwood Collection and our Complex social Structure has slowly, but firmly, converted this tendency to be the only source of energy used for domestic purpose. The ultimate result is loss in BD.

Poverty is yet again a root cause of loss of bio-diversity. Poverty or lack of accessibility to resources pushes a person towards psychology of making attempt in any direction without any limit. So headload is one of the most favorite job, followed by poaching for flesh and selling of other animal articles. These acts, in their turn break the link of food pyramid, or at least dent it seriously. Animal- vegetation link gets disturbed allowing many other problems to creep in.

CHAPTER-V

MAJOR ACTORS AND THEIR CURRENT ROLES RELEVANT TO BIO-DIVERSITY

Nature replenishes itself by a complete cycle of generation, organization and destruction. But there are certain agencies which either accelerate or diminish the pace of bio-resource increment either quantitywise or qualitywise. These agencies are called 'actors' which influence the BD in any way.

There are government department, civil societies, stake holders, middlemen, big businessmen, which are engaged in snatching the opportunity of access to the available resource. Certain acts of these actors add to bio-resource, others erode it. A Comprehensive analyses of these acts is inevitable prior to create formal BD Policy.

When we talk of biodiversity of an area, there can be no limit to actors, which affect it. So we have to prioritise them and to analyse most influential ones.

Among actors, there are kochias (Middle – men for NTFP), Agriculture, Mining, Forest, Fisheries, Veterinary Departments, Water Shed area development programme, Head – Loader, Other forest dwellers and on.

Actors act in side - positive and negative. Some of their acts end up in loss of BD in long run. After a detailed discussion with villagers, gathering perception of experts and sharing experiences of govt. employees working in the area, the inferred scenario is expressed in tabular form.

NATURE OF ACTORS: -

Actors similar to acts are of two types: Actors of First categories are those who support and participate in the conservation of the Biodiversity of an area and Second categories are those, whose acts cause Biodiversity degradation,

While planning for the conservation and utilisation of bio-resources, role of both categories need to be analysed. The Actors of 1st category would provide lessons for the policy makers to prepare legal and policy frame work for the active participation of these Actors; where as unsustainable activities of IInd category of Actors need to be documented; and then controlled through mass awareness. Both these categories have been dealt below but let's analyse the IInd category first.

Irrespective of loss of Bio-resource in terms of quantum & diversity; the IInd category actors can create loss either almost immediately, or after a lapse of time. These Actors must be dealt in the tone they exist. We can subdivide them into.

(A)Direct

(B)Indirect

(A) Direct: - Whose acts degrade BD directly and immediately. These acts if continued uncontrolled for a long time, would show definite ill-effects and

(B) Indirect: - Whose acts though seem to be totally harmless as on today but are definitely going to create threat to the concerned bio-resource in near future.

Actors act in side - positive and negative. Some of their acts end up in loss of BD in long run. After a detailed discusioin with villagers, gathering perception of experts and sharing experinces of govt. employees working in the area, the inferred screnaio is expressed in tabular form.

Cross-sectoral integration of Bio-diversity

Actor :- Agriculture Deptt.

Its role in the Context of Bio-diversity Conservation	Ongoing activities that have pasitive influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Connservation of BD	Indicators Of Succcess
1	2	3	4	5	6
Promotion of Agriculture by Increase in Agriculture production	Introduction of Integrated pest management System on pilot basis in the district	Thrust on chemical farming and High Yeilding Variety seeds and crop monoculture has progressively reduced soil fertility, destroyed soil biota increased nutrient deficiency in soil, has contaminated waterways, crops monoculture have led to increased crop susceptibility against the attack of posts Overall effect has been diver-sity of crops as farmers in a good number of villages abandoned a wide variety of traditional crops in favour of HYV and monoculture has led to increased dependency of farmers on outside support.	Monolithic management (Centralized population dynamics related to resources), intolerance towards consumption habits global issues, Money market, attempt to find as nick fix rotation devaluation of traditional system.	-Switch over to organic farming in the areas in the district with high bio-diversity values <ul style="list-style-type: none"> • IPM be applied • PDS be analysed for local crops • Decentralisation of local seeds • Community seedbanks • Demonstrations • Consumer awarness movements 	Understanding the loss of BD with BD in agriculture land understanding of specification National priorities to be related in global ties

Actor :- Veterinary Deptt.

Its role in the Context of Bio-diversity Conservation	Ongoing activities that have influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Conservation of BD	Indicators
1	2	3	4	5	6
Have the mandate to provide support for animal health and increase in production of animal products	Health care being provided by the deptt. to the animals.	Thrust on increase in milk production in cattle has reduced the diversity of races and the variety of livestock adapted to the local conditions focus on exotic birds in poultry.	Live stock cosidered as a tool of economy not as resource.	Need to bring back the focus on the indigenous breed to increase milk production as well as betterment of work power of so called non descript breed in the district. Integrated programme to characterize local livestock	<ul style="list-style-type: none"> • Vigour of livestock • Answerness for livestock BD in public

Actor :- Fisheries Deptt.

Its role in the Context of Bio-diversity Conservation	Ongoing activities that have influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Conservation of BD	Indicators
1	2	3	4	5	6
Provide fingerlings and fish seed to stock the artificial and natural water bodies so as to increase fish productions.	?????	Excessive focus on carps (Both major and minor) thereby undermining the diversity of local indigenous fish fauna Restocking of natural streams with the carps can seriously affect BD negatively. Process of introduction of carps in ponds	Fisher considered only to be food not a component of aquatic BD, local genes are never taken care of	Integrated fish policy , taking full care of local genes.	Number of species and varieties of fishes in the ponds. Variety of planktons in ponds.

Actor :- Mining Brick making Industry

Its role in the Context of Bio-diversity Conservation	Ongoing activities that have influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Conservation of BD	Indicators
1	2	3	4	5	6
Preparation of bricks using fuel wood	Regulations regarding spots to be tackled by the Government Departments Which are concerned about welfare for people of the area .	Un justified utilization of fuel wood, regeneration, fragmentation of forests by Establishment of labourers. Negative effect on agriculture productivity because of ash of brick –industry	Modern housing system, taste of society changing, Material used for construction of house being symbol of status.	Identification of spots for these tasks on environmental feasibility grounds, prioritisation of local peoples perception on national/international proposals, ensurance of restocking of mining area, legal prescriptions to be strengthened, awareness campaign needed.	BD index of the area is vicinity to brick industry. crop yield of the area.

Actor :- Forest

Its role in the Context of Bio-diversity Conservation	Ongoing activities that have influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Conservation of BD	Indicators
1	2	3	4	5	6
Over all conservation of available bio-resource and increasing it per unit area.	<ul style="list-style-type: none"> • Being managed by trained officers • Peoples participation being ensured (Not in full pace today)	<ul style="list-style-type: none"> • Many types of pressures on bio-resource • Increased demand for timber and population increases • Department working in isolation . 	For ages forests were considered as source of revenue,Deptt. worked in isolation, Acts not upto the mark against encroachers	Forest be considered an environment treasure people and stakeholders partnership in management part assured. Policy already changed. Allotment of funds for trust building activities in the village vicinity to forest, allotment to every component of working plan.	Forest cover per unit area

Actor :- Middle men of MFP.

Its role in the Context of Bio-Diversity Conservation.	Ongoing activities that have influence on Bio-diversity	On going activities that have negative effect on BD	Root causes of loss of BD	Actions/goals proposed that could help in achieving Conservation of BD	Indicators
1	2	3	4	5	6
Collection of forest produces of all sorts and taking them out of forests	<ul style="list-style-type: none"> Regulations for collection and reimbursement of produces irrespective of status of BD in the area Collection done by local residents only 	<ul style="list-style-type: none"> Discriminate exploitation of produces. Excessive exploitation with less recouperment. 	Policy ignoring role of MFP as inevitable component of silviculture & environment (M stands for minor) no systematic exploitation plan for MFPs. Rather NTFP Considered a revenue yielding object. No legal barriers to ban middlemen lack of political will, market not available.	Creation and listing of markets, coordinator for the government needed, technical knowledge to the village necessary. Providing low interest loan facility to villages revision of legal framework	People approaching deptt. for NTFP business, No. of T.P. issued.

SWOT ANALYSIS OF DIRECT ACTORS

(Whose acts affect BD directly)

- | | |
|-------------------------|--|
| Strength | <ul style="list-style-type: none">- Nearness to bio-resource.- The first stakeholder.- Can be most effective agency for any task being performed in the area.- Protection of the linked bio-resource can be addressed best- Can be the best judge for the fluctuations in quality/quantity of bio-resource of the area. |
| Weakness | <ul style="list-style-type: none">- Dependent to such an extent on the bio-resource, that even over-exploitation of BD seems to be perceived as a survival need.- Non-access to the various welfare programmes being performed by local government.- In general lack of awareness.- Economic status of the category is subsistence; thus are very prone to small incentives given by local smugglers. |
| Opportunity | <ul style="list-style-type: none">- If these stakeholders can be involved in planning & implementation, task can be completed early. Awareness in these actors can be very useful for protection of BD of the area. |
| Forest Ecosystem | <ul style="list-style-type: none">- Head loaders fell the promising pole crop and the established regeneration. |
| Ex. Threats | <ul style="list-style-type: none">- Graziers become the agency for trampling of unestablished regeneration.- Forest land encroachers (Inclusive of shifting cultivation), use the most fertile forestland & accelerate the pace of soil loss pushing the area to be barren. |

HAPTER-VI

ON-GOING INITIATIVES

*i) **Governmental:** -*

Every government has a unwritten mandate of social welfare. At times, government enjoys initiations from NGOs also .There are various Biodiversity Conservation Concerned departments in the structure of Government. some of them are explained here.Zila Panchayat works for integrated development of rural areas. Component of tribal welfare is integrated with watershed areas named as Rajiv Gandhi Watershed Area Development Programme (RGWSAD). There are nine-milli watersheds areas identified and are divided into a number of micro watershed areas to have a good penetration to the sites that need some sort of treatment.

There are self help groups raised by many government departments like Forest, Child and Women Welfare Department Etc. These SHGs are the groups of people below poverty line or disprivilaged class. SHGs have worked a lot- plantations are done in the areas in their charge,soil on the local erosional sites arrested, additional silt has been excavated out of streams and barren lands have been irrigated.

Tribal department has many policies for economic upliftment of tribals. They are being performed at three levels-individual level, Community level and Infrastructure development. Priorities for tasks are either decided by State Government or by District level Body.

Madhya Pradesh

Following the 76th Amendment of the Constitution and enactment of Panchayats (Extension to Scheduled Areas) Act, 1996, the Government of Madhya Pradesh has decided to give the entire net profit from NTFPs to the Primary Cooperative Societies. Of the total profit, 20% would be spent on forest regeneration, 50% would be distributed among collators and the balance would be spent on village development.

Government is making efforts to increase the awareness among villagers about the role of wild animals in bio-diversity conservation. At the same time, attempts are being made to reduce the dependency of local people on the forests by many ways. Erection of EDCs in the protected area is one of such attempts. These committees are public bodies with technical knowledge abutted by FD. In lieu of forest protection, FD gives them the know-how of schemes and programmes of various departments. FD works on the SWOT analyses of various actors of the village, and then suggests for the agency & funding authority. Virtual quantitative and qualitative relevance of forest committees is yet to be extended to the field.

In concurrence to government will, FD has raised a reticle of Forest Protection Committees and Village Forest Committees, which are working for forest protection as well as for conservation of available bio-resource. These committees need to be strengthened to market the N.T.F.Ps. These committees are distributed according to density of forests. In dense forests FPCs are raised, where protection of forests is predominant task. In forests with rare density are VFCs., which work for raising new plants and conseving the already available bio-resource.

There is a protected area in Jashpur, named as Badalkhol sanctuary. Management for habitat of animals, water-holes maintainance, enhancing symbiosis of forests with those residing in vicinity, creation of various infrastructures and development of already exhisting are some of the tasks being done by foresters today. But fire hazards were common here because of problems in patrolling due to lack of staff. Researches are also not upto the mark. This area also needs same influx of money for development.

ii) N.G.I.:-

Local folklore is given utmost importance particularly in Jashpur distt. In festivals auspicious occasions or even in camps of NSS/NCC and other occasions, this is a obvious feature. There is a need to let everybody know about the folk treasure of Jashpur. But unfortunately, the virtual motto of the words of these folklore (Abo phislosophy)

Seldom understood. District administration has created a book. Shri Tembaram Bhagat, Retd.C.O. has explained the hidden meaning of the words of these folklore.

There are about 9 villages in Bagicha Block where Birhor tribes reside. These tribes belong to P.T.Gs. (Primitive Tribal Group) there is one NGI named Shri Jageshwar Ram Yadav who is working amongst them for long.

iii) NGOs:-

Rural and Tribal Development Society Jashpur (NGO) has made excellent attempt by gathering of knowledge of all folk lores and resource person to prepare a project for whole year to record all the dances/lores (Ann. vii)

Another N.G.O. named Jashpur Paryavaran Vikas Parishad is also working for increment of vegetal percentage per unit area. RAHA ((Raigarh Ambikapur Herbal Agency) is a Pathalgaon based N.G.O. which works mainly on rural health. Kalyan Ashram is another N.G.O. which works among tribals.

There are many other N.G.Os. which work in the field of education, Socio-economic Survey and other fields.

Madhya Pradesh

The collection and sale of NTFPs is done through a three-tier Co-operative structure: at the apex is the Madhya Pradesh State Forest Produce Cooperative Federation at state level; the District Primary Forest Produce Cooperative Union at the district level and Primary Forest Produce Co-operative Society at the village level. The members of the Primary Society are collectors. Each member has a card that records the quantity sold by the member or others in his/her household

iv) LOCAL HEALERS – There is a large clunk of people in Jashpur, who use local herbs for healing of diseases. This group is working in rural and remote areas. It is unidentified; the sector needs government support for the same.

CHAPTER-VII

GAP ANALYSIS

(i) Gap in information

Owing to lack of a proper full proof system, information with scientists does not reach to villages properly. Also, owing to lack of proper documentation local traditional knowledge is in static form, within premises of villages. A burning example of this is 'Naag-lok' of Jashpur (Block Farshabaha). Slowly with activation of some NRI/NGO and bio-diversity conservation workgroup efforts, people now understand the importance of karis, which has precious venom.

Jashpur is rich in vegetal diversity as it enjoys good R.F. alongwith diversity of topography. So, it is not surprising that there is a good treasure of medicinal herbs also, followed by a good numbers of local healers. But unfortunately due to old believe that mere conversation regarding herbs and process, they may lose power, of healing resists them to disseminate their knowledge. Moreover Gap of knowledge of their regeneration, treatment, marketing, exists. These herbs are also basseted by many factors like over exploitation, wrongful way of plucking tubers and other eronacious practices. NTFPs are also harmed in the same way and obviously the bio-diversity of the area.

There lies a big gap between knowledge with scientific community and the local population. Regarding Inventory, monitoring and effects of exotics are some identified grey areas. Documentation of traditional knowledge, its digital mapping and various Socio-economical studies are other areas to be addressed properly.

Another aspect of gap in information is abstract fluctuations and changes in various facts of bio-resources. (eg. soil erosion, watershed value, fire hazards, nutrient recycle etc.) This type of unmeasurable task effect bio-diversity to fair high degree, but are unfortunately out of focus of public. This gap is also to be filled.

Base data for all the above can be created by what is called as Bio-diversity register maintained at village level, incorporating all the available Bio-resources item wise. Villagers themselves can maintain this register.

Proper knowledge of seeds, their productive/nutritive value, effect of climate etc. are other fields where we find hiatus between officials and farmers views. This gap too, influences the existence of certain crops in many ways.

(ii) Gap in vision

Sometimes, even hunger pushes people residing in vicinity to forests towards excessive consumption or wasteful consumption of bio-resource (with no compensation to the site). This type of consumption, leads into extinction of some tubers

from a place. Others pluck the tubers in a way that the plant / Rhizome dies. So there is no chance of another tuber to come up.

Likewise, there are government departments, which have schemes with short-term profits to the villagers. Agriculture department promotes use of hybrid seeds to enhance per hectare yield. These seeds, because of excessive abutments of fertilizers, manure in comparison to previous country crop, give illusion of their high yielding high-profit varieties. But in some places, such crops are found quite prone to diseases. And when the crop of hybrid variety fails in 3-4 yrs, it is found to take away fertility of land for quite a considerable period. In agriculture, high productivity, green revolution, evergreen revolution, are examples of thoughts whose informational gap does exist between departmental agencies and the farmers.

Vision of agriculture department is at par, to have good production and productivity enhancement of the area. This over enthusiasm is on the cost of local low yield crops. Slowly, local genes, with a good adoptability to the site are totally extinct and new crops take the place.

KULTHI Pulse (horse gram) is such example. Local kulthi of Jashpur has better medicinal effect than the kulthi of other areas. But owing its low yield against the quantity of seed sown, it is approximately totally abolished from Jashpur now.

iii) Gap in policy & legal structure: -

Govt. of India and Govt. of MP (Undivided) and also of Govt. of CG have a policy of upliftment of tribals on first priority. Over enthusiasm for success virtually turns into spoon-feeding of resource and amenities. To change their economy, Govt. department launches variety of schemes, which, though upgrade their condition temporarily, but do not have any answer for lost gene bank. Moreover there are instances of failure. Also agriculture department is fast changing the crop for yield, Veterinary deptt. is adding foreign blood into country cows, when fishery deptt. wishes to introduce a

verity, it first clears off all the country varieties either mechanically or by means of mahua takes which also scarifies other aquatic lives.

PDS concentrates on paddies mostly, whereas farming in most of the area is that of local millets and pulses. Their, not being enlisted in PDS is cause of agriculture being uneconomic. If these crops are added to PDS, they can have a full circle of Production – Purchase-PDS-Consumption-Production, leading to welfare of farmers adopting them.

When we go on the villager's perception regarding changing blood of cows they say that previously the calf was used in fields for ploughing. This hybrid calf is useless there. Regarding more milk production, they say, they don't have a solid market for it. Overall it can be inferred that owing to lack of coordination among the departments, gap in vision and information creeps in. So, interdepartmental hiatus is to be addressed properly. We have to see for a proper and effective legal framework, which properly address the bio-diversity and protect the indigenous knowledge.

Strategies and Proposals for Specific Actions / Tasks

Strategy 1: Expanding and improving knowledge of the Characteristics, uses and Values of Biological Diversity.

Action needed: Village sensitization.

Scale: Local level

Area of operation: First phase 16 villages of 3 priority areas, then whole district.
(List of villages given in Ann.xiii)

Agency: Biodiversity, workgroup along-with district administration and other departments

Length of action: Short term.

Text: Jashpur district is rich in medicinal herbs, which are disseminated evenly all over the area. Not only that, because of availability, coupled with age-old traditional knowledge system, there are a large number of local healers who treat people with these herbs. In many cases they are excellent. Moreover they have proved themselves successful in creating trust in a large mass of public. Irrespective of virtual influence of local drug, healer gives a lot of consolation, moral support and above all, time for proper treatment, (if needed). Owing to greed some laymen have also come up in large number who don't know much, but they pluck the herbs in vain. So a trust-worthy and authentic knowledge of importance of diversity maintenance is need of the hour. Secondly, there are departments influencing biodiversity in many ways, have there programmes running in rural Jashpur. Many of them have more that one facet, giving rise to a different view in villagers than they're of department itself. This circumstance is to be terminated.

Task: Village level meetings, Jan panchayat, Jan-sunwai, workshops, environment cum biodiversity festivals are proposed, to make these rural (disprivileged class) an inevitable part of NBSAP process.

Agency & Participants: Chief Executive Officer of Janpad or Surpanch of local village/village group can be the host, department of forest, Veterinary, Agriculture, Horticulture, Fisheries, Mining, RGWSD can be called to participate. Every department representative can first put forth the scheme, than query, debate can be performed. Minutes must be recorded. (Also audiotape of whole meeting).

Specific tasks proposed:-

- i. Village sensitization.(As per Ann. xiii)
- ii. Laying out of sample plots.

- iii. Pooling literature of vegetation.
- iv. Engaging RPs.
- v. Delimiting the area of survey.
- vi. Survey done in at least 10% area.
- vii. Creating a vegetational map of the samples.
- viii. Preparing herbariums.
- ix. Collection and preservation of samples.
- x. Preparation of Bhuian Registers.
- xi. Training programme for teachers, students etc.
- xii. Capacity building campaign for public.

Financial Forecast: Annexure (i- A)

- Strategy 2:** Bring into force on effective legal framework for Conservation and sustainable use of bio-resource and Documentation, Compilation and monitoring of available bio-resource.
- Action needed:** Establishing “Village Resource Book” as an essential document of village. Creating device to update it time to time.
- Area of operation:** 16 villages of 3 priority areas in first phase followed by making process a continuance programme.
- Scale:** National / Local
- Agency:** Biodiversity conservation workgroup along with Panchayati-Raj institutions under district administration cover and DST..
- Time:** Short time in start, later a continued process.
- Text:** It is preamble statement itself the biodiversity bill envisages the documentation and approval of biodiversity status by biodiversity conservation committee at the local level. It is also necessary to do so, because once biodiversity bill is passed, access to bio resources will start officially. According to bill, it is mandatory for national level committee to consult with local community prior to permit any party for exploitation or exploration. So the local community must have a ready list of resources within its premises (So as to comment on proposal) or otherwise it will be deemed as ‘no objection’. In local language earth that is the surface on which we survive is called ‘Bhuiyan’ and so this register is named as “Bhuiyan register”. This will incorporate forest flora, fauna, planted trees, shrubs, herbs, climbers, lower plants and also the domesticated cattle, agricultural crops, aquatic flora and fauna, vegetables, fruits, edible flower, fruit, tubers, leaves and other produces which are either edible or of any use. Even cultural traits will be mentioned in it. This register will have a column of ‘Source of Information’. This way every age, every gender, every age group, every class of people will be involved and they will have a proper chance to react and furnish knowledge for the register.
- Task:** The task is simple, person who is source of information will be expected to give full details of item name, category of bio-resource, color, height, etc. (Other parameters which are relevant), characters, physical niche, his source of knowledge, site where information can be checked its authenticity etc. Secretary of panchayat will record this information; signature of resource person will be taken, along with date.
- Some specific tasks:**
- Compilation of scientific inventory.
 - Inventing and monitoring GMOs
 - Identification and inventory of BD indicators of habitat quality.
 - Identification, inventory and monitoring of exotic invasive species.
 - Establishment of herbaria and electronic data base.
 - Mapping of BD by satellite imagiaries.
 - Two Separate approaches, one for rural and other for urban areas need to be planned and executed.

- The Civil Society should play a major role in creating mass awareness, undertaking
- extensive education programs amongst the masses and motivating the locals to participate Bio-diversity Conservation process.
- Separate tools of mass communication should be used for rural & urban areas.
- In the rural areas, the communication approach should be with greater emphasis on learning or untapping the vast treasure of local knowledge.
- Over the years, there has been some erosion of trust between the local community and the Govt. institutions. This gap needs to be plugged by undertaking extensive trust building activities using latest management skills and communication tools.
- Formation of Eco-clubs at school level be undertaken on priority basis.
- Celebration of traditional bio-cultural festivals like Sarhul etc. in order to revive fast eroding traditional form of sustainable bio-cultural practices should be organized by civil society.
- Explanation of local knowledge and its documentation for giving guidelines to the common people for conserving BD for their sustainable use.
- Awareness creation for nutritional food, health, education, population comfort, relax pressure on forests.
- Assurance for participatory role for water conservation and forest conservation both in rural and urban areas.(Afforestation and water protection).
- Orientation of govt. servant / NGO towards BD conservation.
- Advertisements in print media.
- Industries like Toys can be very helpful.
- **Special drives be launched for creating awareness regarding destructive harvesting practices of bio-resources.**
- In order to protect the local knowledge & resources, through the mechanism of well layer IPR, an extensive awareness programme be introduced. This could be done by the village/ Panchayat level Biodiversity Conservation Committee by organizing traditional and informal hearings still prevalent in many parts of the State.
- To organise training programme for teachers and demonstrators of colleges (If any)
- Community training for stakeholders.
- Training programmes for technical competency and management skills.
- Certain traditional bio-cultural practices, which because of population pressure or as status symbol have become a threat to the Biodiversity, need to be removed by constant persuasion and motivation. This constant motivation is possible only if the message is communicated through an informal but effective mode of communication.

Financial forecast: To be done by distt. administration.

- Strategy 3:** Ensuring Conservation and preservation of local millets and other agriculture produces.
- Action:** Dissemination of local germ plasm from the sites, where it is available even today, to the sites where it has been abolished and was there in past. (In other words – rehabilitation of the threatened spp.).
- Scale:** Local
- Agency:** Biodiversity conservation workgroup along with Agriculture department.
- Area of operation:** Selected villages/village groups of the district.
- Term:** Medium Term (5-10 yrs.)
- Text:** During pooling of facts from various sources like meetings, questionnaires etc., the fact came out that during the realm of upliftment of rural, especially tribal, crops were changed on the economic or yield grounds. This replaced many of local germplasm by exotics. Some of those forgotten crops, pulses, millets etc. were of great value to human life. Horse-gram, which was grown all over the district once, got extinct with time. Only in part of Pathalgaon revenue block, it is coming up even today. This pulse has a property of curing kidney diseases, it is also a preventive drug for kidney and uterus disorders. But because per hectare production and cost benefit ratio did not favour it, other agricultural products replaced it. Today this pulse can not be grown elsewhere except Jashpur plateau, other horse gram from Karnataka are imported but can not be grown here as they do not fruit in this humid and cold climate. Moreover people’s perception is that original Jashpuria pulse had a better influence on diseases.
- Task:**
1. Task is to buy Horse gram and other such produces from Kansabel/site of Pathalgaon block (and wherever available) to distribute it in Pat areas (Plateaus) where it was sown earlier. So let beneficiaries be selected, donors identified, agriculture department be the nodal department and the workgroup as nodal agency.
- Specific task to be done –**
- i. Finding and enlisting of locally threaned agriculture produces.
 - ii. Finding nutrition values of kulthi and others by a resourse person or place. Sample to be sent to the lab for it.
 - iii. Purchase of Kulthi and others(to be purchased from the area where this is still found.)
 - iv. Distribution of Kulthi and other produces in the areas where they were coming up previously. Identification of villagers and beneficiaries to be done.
 - v. Monitoring of production in areas where they are introduced by the agriculture department.
 - vi. Village sensitization by local artistes.
1. Creation of seed bank of the varieties, which are local to the area.
- Financial forecast:** Annexure (i-E)

Strategy 4:	Formulating on integrated policy for Conservation, sustainable use and equitable sharing of benefits of Bio-resource.
Action:	Creating device to protect legal rights of local rural and also to create infrastructure and institution of professionally sound persons in the area of herpato-fauna, and in medicinal herbs.
Scale:	Local level
Area of Operation:	5 villages of herpato-faunal priority zone is first phase followed by district level local healers club.
Time Span:	Medium Term
Agency:	Biodiversity conservation workgroup with Jila-Panchayat.
Text:	<p>During prioritization of sites where biodiversity is to be conserved Farsabahr revenue block came in lime light because it has a large number of ‘Krait’ Snakes per unit area and snake bite cases are so frequent that the area is called ‘Naag lok’.</p> <p>Along with Krait, vipers, cobras and small snakes are also there. Scorpions, monitor lizards are also there which have a good medical value. Obviously, concentration of snake catchers is too high in the area. Venom of krait, values of the range of Rs. 10-15000/- per gram. So if the snakes are caught, venom taken off and the animal is untied (which is killed today) we can conserve a wide variety of reptiles. Monitor lizard is another poor reptile, which is sacrificed for its skin having medical value for patients of paralysis.</p> <p>The most ugly face of the story is that people who don’t have proper knowledge, many a time kill these creatures on the first site. Elderly people are of opinion that these creatures are getting lesser day by day and are of verge of extinction.</p> <p>Same is the story of herbs. Local healers have expressed their deep concerns regarding rapid reduction in availability of herbs in the workshop.</p>
Task:	<p>Two major tasks to be performed.</p> <p>A. Snake catcher’s club: Task to be done, is to identify snake catchers, formation of a club with all byelaws and dos and don’ts Institutionalization is expected for them.</p>

Specific tasks:

- ∅ Identification of snake catchers.
- ∅ Identification of 'snake-areas'
- ∅ Training be ensured
- ∅ A mesh of 1meter height enclosing the of one acre or so, with habitat facility for the snakes be ensured inside the mesh.
- ∅ District administration / FD / Distt. level BD conservation committee to facilitate the formation of snake catchers club, as well as for sale of venom after prescribing it for a particular period.
- ∅ R&D to be facilitated by FD –finance for the same by state government.

A lab for venom extraction, freezing and converting it to transportable form, a large modified cage suitable for snakes is necessary. Constant monitoring is necessary, as money is involved in it.

B. Local Healers club: Identification of healers, providing them a platform to expose themselves, providing platform, so that they can sell their medicine.

Specific tasks:

- ∅ Identification of local healers- village wise.
- ∅ Identification of herbs in their respective villages.
- ∅ Identification of quantum of herbs and expected output as medicine.
- ∅ Constitution of a district level local healers executive body which will co-ordinate for raw material between healers.
- ∅ District administration to contact Directorate, Indian system of medicine to facilitate for pharmacy to buy the herbs from this club started at Jashpur.
- ∅ District administration /directorate Indian System medicine and local healer executive body to regularise for financial matters of the healers at the site.
- ∅ District administration / village level BD conservation committee / workgroup to co-ordinate for protection of local healer against IPR and other such international provisions.
- ∅ The district level Traditional Healer Forum, if need be, can be given lands by the State for launching herbal planting programmes in order to make them self reliant in raw material supply for their medicines. 10 Ha. area reserved for ex-situ conservation in each PPA can be allotted to the Forum.
- ∅ Regular monitoring of all the in-situ and ex-situ conservation activities would be done by the State Medicinal Pla

Legal cover by means of biodiversity act is mandatory for protection of these disprivileged rurals in the international scenario

Some specific actions to be done

- i. Survey of the area by the experts for all sort of snakes, scorpions and other reptils.
- ii. Formation of snake catcher committee.
- iii. Village sensitization regarding benefit sharing.
- iv. Erection of lab for preservation of venom and other dealings.
- v. Preparation of area for breeding/living of snakes.
- vi. Preparing a programme for resource person to visit the area at a regular interval.
- vii. Up-gradation of local health centers in antivenom drugs.

Financial Forecast: a) For snake catchers club: Annexure (i-G)
b) For local healers club: Annexure (i-C and i-F)

Strategy 5: Rejuvenating traditional bio-cultural practices for rehabilitation of 'social capital'and Ensuring cultural – Biological diversity link to be intact.

Action : Recording of cultural traits of Jashpur

Scale : Local level

Period : Short term

Agency : BD conservation work group with tribal welfare deptt. Jashpur

Text : It is beyond doubt that folk lore of an area reflects the socio-economics status of the particular community as well as of the area as a whole. Villagers have a tendency to dance after reaping of crop. Intensity of dances depends on the quantum of crop produced, some times the dance may stop, if there is no crop in a year. So that is a good indicator of socio economic survey as well as of environmental census. So recording both audio & vedio is suggested.

Task : A resource person who is good in folk lore himself, also a key person to make local community move up can be given task. Vehicle & instrument can be given either by tribal department or by administration.

Financial Factor : Ann. vii

Strategy 6 : Ensure local germplasm protection by creating a mechanism to make its utilization sustainable and ensuring its presence in the main channel of rolling.

Action : Including local crops in to public distrubution system.

Scale : State / National level

Term : Short term & then contineous.

Agency : State Govt. & Food deptt.Agriculture,tribal, CEO.

Text :

Reason of depletion of local grains is shurnk yeild compiled with lack of demand. If demand is echanched, tachnique of improving quality & quantity will also be pooled.

So if state govt. include local paddy & pluses in PDS, they will automatically be crops of demand resulting is increased cropping area. This will conserve the local varieties of crops definetly.

Some of the items suggested to be included in PDS in Jashpur distt. are

- **GRAINS/ MILLETS/OIL SEEDS**

- Paddy – 20 varities (To be adviced by agricultural deptt.)

- Kodo

- Kutki

- Ramtili (Jatagi)

- Maize

- Ground nut

- Jowar

- Chana

- Ragi

- Alsi

- Sarson

- Til

- Kusum

- Arandi

- Surajmukhi

- **PULSES**

- Kulthi pulse

- Urad

- Lakhdi

- Masoor

- Sutari Bean

- Popat Bean

- Madua

-

- **Other crops and agriculture produces as suggested by Agriculture department**
-
- **Specific task of agriculture department will be to search for the list of local crops / millets / other agricultural produces which are common in villages, so as to add them into PDS and to fix their minimum support price.**

Financial forecast : - Negotiable between agriculture and food departments .

Strategy 7 : To ensure active peoples participation in Government initiatives for integrated rural development (like RGWSDP).

Action : Sactioning more identified watershed areas and wastland areas for treatment.

Scale : National level

Agency: Project officer (Rajiv Gandhi Watershed Area Development) and State Govt.

Time : Short term to identify, then continued process

Text : it seems RGWSAD programme is working well and up to the mark, it is a task which is eco-friendly, and ensuring biodiversity intect (of the area). In the programme, villagers themselves identify the problem of water/soil erosion/deplition and they, with the help of committee, decide what work is to be done at what point. Later, after technical sanction, task is done by villagers them selves for the village. Water level of the area increases as well as social societies like SHG Starts working.

Task : There are maps of the distt. already with Chief Executive Officer Zila Panchayats indicating position and nomenclature of the proposed water shed areas. Intense surveys can be done and new areas selected for RGWSAD programme.

Financial Forecast : Rs. 20 Lakhs per WS Area (App. 500 hect. for 5 years)

Strategy 8 - Ensuring Protected area to be the true representative of Bio-Diversity of the area.

Action -

- (1) Creation of programme to arouse awareness about role of Wild life in conserving BD
- (2) Implement VRDP programmes to eradicate poverty

Agency - State govt. & Distt. Level rural development authority .

Time needed - Long term (Beyond 20 years)

Text- Knowledge of numerous animal habitats is insufficient, in general. This, combined with lack of awareness and existing poverty level, gives rise to poaching of animals to such an extent, that their survival is threatened. Owing to poverty, people tend to go for head lodes, which again fragments the habitat.

Task- There is an urgent need to implement programmes for the welfare of locals and of animals. More man-days engaged in rural development will reduce the dependency of villagers on

forests. Programmes can be infrastructure development, community based, individual targeted.

Government must initiate to fund proposals for protected areas to reactivate eco-developmental committees as well as joint forest management committees. There is a need for creation of seed bank of local crops. Nodal agency for these banks can be JFM/EDC or Gram panchayats Petrolling must also be considered seriously.

Financial Forecast : 34 lacs [Annexure (i-I)]

Strategy 9 : Ensuring inter-departmental linkage be effective, to conserve biodiversity of this area & area in vicinity.

Action : Monitoring, at regular interval, by a officer of the rank of secretary to the state govt.

Scale : State / National level

Time : Long term

Text : There are policies which have not sufficiently rooted in the trust of local people. There are schemes whose components are beyond the limits of a single department. Then there are provision which harm the provision of other deptt. Again inter-state smuggling of bioresource is a common feature on the fringes of the State. All these can be identified first, and nodal officer can be appointed to look after it.

Task : As on today prioritisation of various tasks done by govt. deptt. is in the isolation. Many a times they neither consult each other, nor the bebeneficiaries, which ultimately harm the beneficiaries' interests. Reason being decision-making level not fully concordant. So, there is a need to pull down the level of dicision level to village level with all departments working in integration.

For this, a meeting of all officers must be held every month with all budgets being allocated to the village kept forward. Panchayat representative must also be invited. So, every part of distt. will be covered with some or other department.

Strategy10:- Ensuring status of development to be integrated.

Action:- Improvise the coordination status among various government development responsible.

Agency:- State government through chief secretary.

Time frame:- Long term.

Text:- In the structure of government we have many department ensuring rural development from every possible angle. But owing to special system of direction/ supervision and execution they work independent of each other. This some times creates problems at micro level (village level) and applies hurdles to the speed and direction of progress.

This is high time to realize that we need to have a firm policy, which is also full proof in parlence of bio-divesity.

Special tasks:-

1. Distt. Level bodies of coordination in presidentship of D.M. be made.
2. All departmental heads of distt. Level be members of it.
3. Meeting of the body to be held at regular intervals.
4. Priority of developmental geographical unit wise to be decided.
5. Perception of developmental heads alongwith people's be appraisal on every theme.
6. Polices of every deptt. For the distt. Be discussed in the meeting so as to clean any doubts.

Strategy:11- Develop module to equilibriate between conservation of less productive local gene and productivity of crops.

Action:- Hybridisation of local gene with wild relatives.

Agency:- IGAR and Agriculture deptt.

Time frame:- Long time.

Text:- Genetic engg. is used in agriculture deptt. To increase productivity per unit area originality is definitely lost. When the original genetic are added to the structure. To have even different results, we can have many other equations of genes. But the real threat lies in possibility of losing a particular local gene forever.

To crop up with the most scanty chance of such nature, we need to have a midway. And so, crossing local crops to their wild relatives can be the most suitable answer. Their wild varieties have more resistance power than local ones. Being close relative of crop, it will not cause the genetic variation to deviate much. Again reversal to originality will be easier and chances reversal will be definitely more which is not guaranteed in case of foreign crops.

- Specific tasks:-**
1. Identification & listing of crops of the locality under threat (Economics wise or site wise)
 2. Identification & listing of its wild relatives.
 3. Study of all the characters of both the crops, so as to predict any possibility of irreparable loss.
 4. Listing of characters of increasing of springs, adaptability to the site and the intensity by which problem will be solved be addressed properly.
 5. Gathering of perceptions of local people and scientists.

6. After appraisal at every level, Agricultural Scientists be permitted to go for task of crossing.
7. Regular monitoring to be done by local culture deptt., N.G.Os., other institutions.

Financial forecast:- As per the estimate given by agriculture department.

MATRIX OF IDENTIFIED AGENCIES TO IMPLEMENT THE STRATEGIES.

S.NO.	STRATEGY	AGENCY
I.	Bring into force an effective legal framework for conservation and sustainable use of Biodiversity and documentation completion & monitoring of Biodiversity .	CEO/ DM, BDWG
II.	Ensure cultural –biodiversity link to be intact.	Tribal
III.	Rejuvenating traditional Biocultural Practices for rehabilitate of social capital and formulating intensive policy for sustainable use and equitable sharing of	CEO

	benefit of Biodiversity.	
IV.	Ensuring local germplasm protection by creating a meeting to make it sustainable & inevitable for use.	State/ Food/ CEO/ Agri. / Tribal.
V.	Ensuring conservation presentation and sustainable utilisation of local germplasm .	Agri. Deptt. / WGBD
VI	Expanding and improving knowledge of the characters, uses and values of Biodiversity .	BD Workgroup, DM
VII.	To ensure active people's participation in Govt. initiatives.	CEO/ State
VIII.	Ensuring P.A. to be the true representative of Eco-development	CEO/ State
IX.	Ensuring inter deptt. linkage be effective to conserve Biodiversity.	State/ National

**Co-ordinator
Biodiversity Conservation Workgroup,
Jashpur, Chhattisgarh.**

INTER STATE VIZ-A-VIZ INTER DISTRICT LINKAGES

Horizontal, as well as vertical linkage of the locality, owing to bio-resource is very important. Shifting of resource from one place to other can be fatal even threatening for the very existence of the Spp. in particular.

In the parlance of Jashpur, we have a great treasure of tribal population of different clans. They have different folklore, different songs, dances, customs, have a

common link forests. Mostly, their traditions flow with values, their own economy and attiquates. Interesting to note is the fact that they have a lot fluctuation in frequency in celebrations- flowing up & down with there components eg. if the crop is not good – Dance (And worship) Nayakhan may be shifted or altogether postponed.

Jashpur and vicinity area like Jharkhand and Orissa have a very strong bio-cultural linkage. There are temples and other creations which direct towards a common root of the tribals. There are vegetational, ecological, animal wise continuety is in existance, which is to be addressed properly. These areas (in shape of wide ecological strips) are called corridors. Wherever strip has rare forest – planting can be done, or otherwise only protection is needed.

Chhattisgarh

In a study of two districts in this predominantly tribal state, NTFPs contribute to around 20% of the per capita income in village.

Source:- (Bajaj, Manjua 1998. How much is a Lot? An Economic evaluation of the contribution of Non-timber Forest Products to the Tribal Economy of Madhya Pradesh, Food and Agricultural Organization, New Delhi.)

SWOT ANALYSES OF MAJOR STAKE-HOLDERS

LOCAL HEALER (VADIYA)	
Strength	Availability of herbs in vicinity, Level of LTK upto the mark
Weakness	Lack of vertical/horizontal linkapes

Opportunity	Utilization of LTK, In tra personnel skill dert., Employment generation tool
Threats	Excessive indiscriminate exploitation of Bio-resources, poaching increase

MIDDLE MEN (KOCHIA)	
Strength	Ready market, at home science, no botheration of processing
Weakness	Work in isolation creating apprehensions
Opportunity	Can be used an tool for inventorisation of bio-resources of locality
Threats	Exploitation of people, indiscriminate utilization of forest, causing stress an eco-balance

ANNEXURE

- (i) Financial Statement
- (ii) Questionnaire
- (iii) Village Sensitization (Method adopted)
- (iv) Minutes of Madhupur
- (v) Minutes of Tangargaon
- (vi) Minutes of Purainbandh
- (vii) Cultural Traits
- (viii) Manpower Utilization

- (ix) Vatenary (Hindi)
- (x) Vaidyon ki suchi (Hindi)
- (xi) List of 16 villages of first phase

ANNEXURE - I

FINANCIAL STATEMENT

A. Village Sensitization

a)	Vehicle	Rs.	1000/- only
b)	Meals	Rs.	1000/- --“--
c)	Follow up@500x2	Rs.	1000/- --“--
d)	Cultural groups		
i)	Dress	Rs.	1000/- only

ii)	Light	Rs. 500/- --“--
iii)	Coveyance	Rs. 1500/- --“--
iv)	Tent house	Rs. 500/- --“--
e)	Advertisement	<u>Rs 1000/- only</u>
		<u>Rs 7500/- only</u>

Total villages of the area

In the first phase 16 = 16 x 7500/- = **Rs 120000/- only**

B) Resource Person visit

i)	To & Fro ticket	Rs 2000/- only
ii)	Lodging/Boarding	Rs 1000/- --“—
iii)	Stationary	Rs 1000/- --“—
iv)	DA	Rs 1000/- --“—
v)	Consultancy charge	<u>Rs 5000/- --“—</u>
	Total	<u>Rs 10000/-</u>

Total first phase 16 village = **Rs 160000/- only**

C) Documentation of bio-resource

i)	Griding for 1Hact	Rs 300/- only
ii)	Survey in 10% area	Rs 200/- --“—
iii)	Survey in 1 Hact for herbs	Rs 500/- --“—
iv)	Preperation of herbarium	<u>Rs 5000/- --“—</u>
	Total	<u>Rs 6000/-</u>

Total 80 Hact in first phase **Rs 48000/- only**

D) Recording of Folk Lore

i) As per given in cultural traits of Jashpur(Annexure - vii) = 65000/-

ii) Follow up = 10000/-

Rs 75000/- only

E) Kulthi Pulse Dessimation

i) Purchase @ 1000/- per quintol = Rs 10000/- only

ii) Distribution to 100 people in first phase = L.S. 5000/- --“--

iii) Monitoring = L.S. 1000/- --“--

16000/- --“—

F) Conservation of Herbs

(Detailed plan being prepared)

Ex situ Conservation = LS Rs 5000/- only per Hact

In situ --“-- --“-- Rs 1000/- --“—

Total 80 Hact. in first phase = Rs 4,00,000/- only

$$\begin{array}{r}
 + \quad \text{Rs } 80000/- \text{ only} \\
 \hline
 = \quad \text{Rs. } \mathbf{4800000/-} \\
 \hline
 \end{array}$$

G) Snake catchers club (For first phase)

i) Erection of a lab with all facilities	=	Rs 10,00,000/-
ii) Freezing/drying machine for venom	=	Rs 13,00,000/-
iii) Payment to Snake catchers @ 150/- per Snake	=	LS Rs 15,000/-only
(From April to September)		
vi) Barbed wire fencing in the park with mesh	=	LS Rs 25000/-only
v) Feed for snakes	=	LS Rs 10000/-only
vi) Manpower 1 w/w person, (3 for 24 hrs.)	=	Rs 54000/- only
vii) Attendant 1 Person	=	Rs 36000/-
viii) Vehicle (Swaraj Mazda)	=	Rs 600000/-
ix) Retiring Room for catchers	=	Rs 600000/-
x) Contingency and other expenses	=	Rs 350000/-
<hr/>		
Total	=	<u>Rs 40,00,000/-only Total</u>

H) Action plan preparation

- i) Preparation of plan in digital form and its printing / binding etc. = Rs 10000/-
- ii) Stationary & other expences = Rs 5000/-

Rs 15000/- only

I) Project For Development of WL Sanctuary, Jashpur

No.	Task	Rate (in Rs.)	Quantity	Expected Expenditure (in Rs.)
1	Protection			
a)	Weed eradication (Gul phulli)	1500/Hact.	R 360,361 (100 Hact)	150000/- 450000/-
b)	Patrolling Jeep (Marshall)	450000/-		384000/-
c)	Information source money	1000/- village /month		
				984000/-
2-	Extension Programmes			

a)	Erection of Boards/Hoards	App. 15000/- per No.	5	75000/-
b)	Erection of Small Boards	1000/-	25	25000/-
c)	<u>Eco-Camps</u>			
	i. Tent purchase	(App.) 25000/-	20 Nos.	500000/-
	ii. Construction of masonry platform (10'x 8' x1')	L.S.	2 Nos.	40000/-
	6 Tent cost	500/-	20 Nos.	10000/-
	7 Torches	100/-	20	2000/-
	8 Haver – sacs with articles	300/-	20	6000/-
	9 Printing of brochures	L.S.	100	10000/-
	10 Purchase of Black board/chalks	L.S.	2 Nos.	1000/-
	11 Binoculars	9000/-	10 Nos.	90000/-
	12 Vehicle	Swaraj Mazda	1 Nos.	600000/-
	13 Caps/ T-shirts with logo	500/- set	20 sets	10000/-
	14 Utencils of camp	-	L.S.	1000/-
	15 Firstaid box	125/-	20	2500/-
	16 Prizes/ awards in the camp	100/-	25	2500/-
				1375000/-
3	<u>Research works:-</u>			
a)	Inventorisation of vegetation and wild life by ways of workshop, conference, village meeting.	App. 2000/-per ws.	25 year	50000/-
b)	Engaging resource person for inferences and identification, each	5000/- per R.P.	20 Nos.	100000/-

	for herbs, wild animals, lower fauna, tree spp.			
c)	Engaging students of NSS, college, schools to inventories bio-resources.	1000/- per group	10 Nos./ Year	10000/-
			Total	160000/-
4	Census of wild animals	5000/- census	2 nos. per	100000/-
5	Tourism Development			
a)	Adventure tourism			
	i. Foot tracking	1000/- km	15 km.	15000/-
	i. Pagodas on the paths	5000/-	50 Nos.	250000/-
	ii. Introductory boards	1000/-	30 Nos.	30000/-
	iii. Railing etc.	1000/-	5 Nos.	5000/-
b)	Eco-center development			
	i. Building for training (Kurhatipna)	300000/-	1	300000/-
	ii. Articles to display	10000/- site	1	10000/-
	iii. Photographs	L.S.	5000/-	5000/-
			Total	615000/-
6	Eco-development			
a)	<u>Trainings</u>			
	i. For local rurals	5000/-	2	10000/-
	ii. for staff	5000/-	2	10000/-
	iii. Detailed expretise for i & ii	5000/-	1	5000/-
b)	<u>Inventorisation:-</u>			

	i. Detailed exploration of area ii. Commentes from RP (from out side area)	1000/- 5000/-	10 sq.km. 5 Nos	10000/- 25000/-
c)	<u>Asset creation :-</u> i. Purchase of small transparent boxes ii. Purchase of stationary iii. Collection of specimen (Persons)	10/each L.S. 2000/- month	500 Nos L.S. 5 Nos	5000/- 5000/- 10000/-
d)	<u>Trust building (with extension)</u> i. Raising a nursery of medicinal plants ii. Material for nursery iii. W/W for nursery iv. Care taker cum accountant	50000/- 20000/- 2000/- 3000/-	2 Nos L.S. 6/month 2 --	100000/- 20000/- 144000/- 72000/-
			Total	416000/-
7	Fire – Protection:- a) Cutting of fire liner 12 M. wide b) Cutting of fire liner 6 M. wide c) Fire watcher for fire season (15 units – 2 watchers each) d) Installing handest W/L on match tower e) Aids to accelerate speed of fire fighters f) Awards to helpers	450 per km 350 per km. 5000/- 10000/- L.S. L.S.	229 km. 88 km. 4 Months 2 Nos. 4 Nos. L.S.	104000/- 31000/- 300000/- 20000/- 40000/- 50000/-

			Total	545000.00
			Grand Total	4195000/-

ANNEXURE - II

QUESTIONNAIRE

BIO-DIVERSITY WHAT ? WHY ? WHERE ?

Village

Panchayat

Tahsil

Distance from Jashpur:-

Q: 1 Tick the verities found in the area (Paddy)
(Sahira, Sarswria, Gopal, Bhog, Kebedkhnth, Sarna Kalandan, Randi, Khirka
Khanchi, Bohangi, Barasal, Dhauri, Hardimada.... other (if any)

1A. Paddies which are abolished in neat past

Q: 2 Pulses Magni, Arhar, Bewra, Kulthi, Udad, Til

(others (if any) please mention)

2A. Pulses which are abolished in near past

Q: 3 Other agricultural produces: Maize, Jatangi, Ramtili, Kodo, Kutki, Sarson,
Tan, Mahua, Khursa, khedi other

3A. If any thing abolished

If any thing is use extensively

Q: 4 Animals (Mention number wise)

4A. If any animal is getting less no, wise

Q: 5 Fishes a) Wild

b) Farmed

Which fish is better and why?

5A. Which fish is getting extinct why?

Q:6 Forest (name the spp.)

- i) Trees
- ii) Small trees
- iii) Bushes & shrubs
- iv) Climbers
- v) Herbs & medicinal plant

6A. Which spp(name them) serve to be getting less day-by-day

Q: 7 What produce (or any bio resource) is exploited most (name)

Who collects from forest (category).....

Who buys it (category).....

Where does it flow (transport).....

App. quantity

How much is consumed locally

When is it exploited (name the months)

Is there any visible change in the quantum of the produce in the forests

.....

Q: 8 Are there some local folk artists in the village (name then)

(Co-ordinator)

BD Cons. Working group

Jashpur

ANNEXURE – III

VILLAGE SENSITIZATION (METHOD)

Village Sensitization is inevitable when we intend performing a task, which needs active co-operation of local rural people.

To enjoy active co-operation we have to change them so much that they, by themselves initiate a talk, perceptions and innovation float frequently and when local residents show full trust in sensitization.

So, a standard structure can not be drawn up but even then a broad outline underlining essential items is given below: -

Expert sensitization (who can be BD work group member NGI, or any body) must adopt certain things

- a) sitting on the same level (Avoid chairs)
- b) Starting the talk with local interest (Farming, business etc)
- c) Try to involve most so as innovative ideas are attended properly, everybody feels involved.
- d) Then suggest for a formal meeting immediately.

- Formalities :-
- i) Banners
 - ii) Loud speakers
 - iii) requesting an old man from within the village to preside
 - iv) Worshipping to start the function
 - v) Photography be done
 - vi) Exhibition local exhibition of local tubers and herbs to be shown photography be done

- Discussion :-
- a) Facilitator must introduce himself and the team to villagers.
 - b) He must then brief what BD meant and where and where it is in the village.
 - c) Series of short lectures by
 - i) Workgroup (BD) member (one)
 - ii) R.P. (From a deptt)
 - iii) Legal Authority (Sarpanch etc)
 - iv) Independent personality of village
 - v) President
 - d) Grouping of villagers into 3-4 groups for discussions. they can be agricultural crops, Medicinal herbs, Forest diversity, Animal centered, cultural etc (For this total presents must be divided into 4 groups with ladies as separate group) topics must be given to the group with a work group. Member as a facilitator in each group.
 - e) Recording be done by facilitator
 - f) After 1 Hour break for a meals
 - g) Sammelan of all groups to present their findings in the panchayat what and how they discussed and what inferred.
 - h) Question of what where and has to conserve of BD to be decided, with consensus.
 - i) In the right with a camp fire, discussions must continue
 - j) Telling deptt. scheme invite perceptions
 - k) Cultural programme halt
 - l) Departure from village foll. Day

Note- For recording purposes, profarma as suggested by Yeshwant Rao Chavan Academy of Development Administration can be used.

ANNEXURE – IV

MINUTES OF VILLAGE JAN- PANCHAYAT(MADHUPUR)

- Venue:** Madhupur Sarna
Date: May 29th, 2001.
Participants: Villagers of Madhupur, Hukrakona, Kawai, Khakhra, Jokari villages, members of Biodiversity Conservation workgroup Jashpur, Programme Director IFAD, Chhattisgarh region.
- Agenda:** Village Sensitization

Structure of Panchyat: Introductory discussion with villagers, Introduction, Biodiversity concept, Discussion sector-wise, Panchayat, consensus. Exhibition of articles used by locals was also there at public domain.

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On May 29th 2001 biodiversity conservation workgroup members (along with IFAD Programme Director Shri BMS Rathore) reached the village Madhupur. They had a meeting with the villagers with special reference to biodiversity. First of all Shri Jagannath Pahadia, Secretary Pahari Korwa Community introduced them together. One aged senior citizen of Madhupur Shri Johna Ram was nominated as president of meeting. Shri Pahadia started the meeting explaining the importance of forests, biological diversity and other bio resources. Shri Etwa Ram, a workgroup member added regarding trees, vegetable in to facts-pool. Shri Johna Ram shared experiences of villagers and adjacent forests.

On initiation of villagers, they were divided into four groups, one of which discussed regarding agriculture, second group discussed on medicinal plants, tubers etc., third group discussed on vegetation either planted, and wild, this group also considered the wild and domesticated cattles. Last group discussed on cultural traits-bio resource bridging. One Biodiversity conservation workgroup member was there with each group.

Sarna- Synthesis of tribals and god

Sarna is a group of sacred trees (Always Sal) where no felling or illicit work can be done. Even tubers are not plucked from this area. The area may range from app. 50 sq. meters to sometimes an acre. Numberwise, trees range from 10-15 to hundreds sometimes. All the trees in a Sanna are matured. Their height exceeds 20', girth 90-100cm. The word Sarna has come out of original hindi word 'Sharan' which means shelter. It is believed that god Rama during his famous 14 years exile into forest has once stopped for a while in the vicinity of a village in

*the area. So, it is replicated in every village (The group of trees forming a forest). All holy
worships are performed inSarnas*

After a thorough discussion, all sat on the same platform with results put open for discussion. Discussion was also very open, every person was given a chance to reflect his/her view. Both individual as well as common inferences were recorded.

A) Range of biodiversity in the village today.

i) Facts that came as general consensus.

- 18 Paddy varieties are being sown.
- 8 types of vegetable bhajis are being used.
- 17 types of tubers are extensively used.
- 2 types of wild flowers are used.
- Approximately 30 medical herbs are there in the area (identified)
- 72 types of forest trees, 37 small trees, 18 climbers and 15 planted trees species are there in village group area.
- Pulses are shrinking day by day. Horse-gram is vanished, gram is still there but has lost a vast area.
- Other agricultural products are khursa, sataru, Tangan, Mahuwa, Ramtili, Small pea, Makka found in the area.

ii) Knowledge gathered by individuals

Shri German (Jokari): a) Sahipota herb is crushed and 3 doses are given with water, diarrhoea is cured. Even raw can be taken.

b) Jangli Parhi Tuber is either eaten raw or consumed with some liquid, is good in snakebite cases. Its root is crushed and tied on the wound.

d) In dysentery three doses of Tanga Pasa herb are given.

Shri Ghuran (Rampat): a) Aak (Calotropis) herb is consumed with water in a dog-bite case. Massaging with its extracted water is also useful.

b) Jeennan tuber is used in joint pain and also water with its crushed pieces is helpful in curing body-ache.

Shri Mangal (Khakhra): a) Kalli Jhund Herb (Climber) is used with water in crushed condition. It cures fever, Dysentery as well as STDs,

iii) Generalized characters of some items:

a) **Tubers:**

- Bajanath Tuber: Boiled many times, before consumption. So that it is less sedative.
- Kanmul tuber (Tapioca): Eaten for its taste, also a good source of protein.
- Bayang tuber (Churku): Eaten, getting less, day-by-day.
- Koneng Tuber (Tudu): Eaten after boiling.
- Pitharu (Pukutulu) Tuber: One of the most common, getting less and less.
- Gurru Tuber: On hilly slopes, eaten.
- Nakawa Tuber: On rocky soils, eaten.
- Kataru Tuber: was in plenty, getting abolished now.
- Gaineeth Tuber (Nappa): Comes up beneath the surface and also up the ground. Bitter.
- Bandu Tuber: It is sweet tuber. About half a kilogram in weight comes below the ground level. Later fissures in the ground are resulted with its growth. On every node of runner there is one tuber, leaves are like that of butea.
- Tiriyon Tuber: Spherical, black, heavy, eaten.
- Other edible tubers are: Jeewan, Tangapasa (Medicinal), Paatal Kohda, Dedore, Suyu buthu, Ole tuber.

(b) **Bhajis (Protherbs)**

Beng (Bramhi), Dhasani, Saaru, Koilar, Mayur-Chundi, Katmahki, Chitmiti, Jeranga (Sanjeevani buti).

Sanjeevani Buti creates white spot, when stuck to human body.

B) **Perceptions of villagers, which came out after discussion.**

- Bio Resources are depleting slowly.
 - Reason is deforestation and agriculture practice.
 - Population explosion is another reason.
 - Forest fires are disastrous.
- Tubers are getting depleted because puckers among us (villagers) don't leave any thing out of tuber, which can regenerate.
- Bushes are needed for tubers to grow, they are taken off for hedging.

A general concern about shrinkage in bio resource (quality as well as quantity wise) was there. Everybody wanted to have a document of what is there today and the ways to protect biodiversity. So Bhuiyan register, which will include every details of every biological resource found in the village, was accepted. Also agricultural tasks needs review, as paddy like IR-36 which was provided by agriculture department, was infested by insect past in 2 years. It is noted that Bhuineem, Siharoo (Climber), Rohina (Tree), Van Parhee, Muskali (herb) are approximately extinct. So they also need protection. Every villager took oath that they will do any thing, needed to protect biodiversity of their area.

ANNEXURE – V
MINUTES OF THE MEETING AT TANGARGAON

Date: April 18th and 19th 2001

Participants: Members of the Bio-Diversity Conservation workgroup, villagers of Tangargaon, govt. employees from agriculture and forest departments.

Agenda: Village sensitization.

Plan: Introduction, Discussion, Mapping of BD, Perception recording, finding answers to question of what, why, where, how and who should work for BD.

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On April 18th, 2001 BD Conservation workgroup members along with co-ordinator visited the village of Tangergaon, which was selected because of a good center of traditional trades in vicinity to Kansabel, a roadside town.

By way of two way open dialogue, (obviously after a brief introduction of visiting members) question of what is bio-diversity, where it is, and shall it be conserved were thought of. Villagers included local politicians, village officers, local leaders, ladies, children, farmers, youth, business class people and others. On a drawing sheet birds eye view of village was drawn and all the resources were shown. All the task was done by local residents. For the question of what BD is, many perceptions came which is shown in fig I. This clearly says that in perception of most of the people forests are synonym of biological diversity. Forest was opted to be most important (fig II). Village has scanty forest, and the economy of the village is agriculture dominant. Now a days they have started to grow vegetables also. Comparative statement is shown diagrammatically in fig III.

Discussion was done in a large group, as villagers themselves prepared to talk this way.

Results came out to be:-

- There are 500 families (approximately) in the village.
- About 400 families grow paddy and other crops in the fields.
- About 20 types of paddies are being grown today in the village.

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- About 5 varieties have lost a lot of area of sowing from the fields. They are rajgaah, Karhani, Barhasal, Sarsaria, Kalamdani.
- There is a canal passing through the village which is not proper order today.
- But still villagers go for vegetables, Tomato and some beans are being grown.
- Peanuts, Maize, Udad pulse is mostly adapted to the area and is abundant cotton is also reported in previous days.
- Oil bearing prodices like Mustard, Ramtili (jatangi, Gunja) Alsi (Teesi) are also grown.

List: -

1. Paddy: - Safari, Luchai, Kapoorbhog, Ranikajal, Sarna, Jauful, Kalamdani, Khirkhakhunchi, Dubraj, Kasturi, Jenjne, Salhedhedi, Kalajeera, Asamiya, Gurmatia, IR-36, Sargujiya, Kalaparbat, Karahani, Rajgah, Barhasal, Sansaria.
2. Pulse - Rahar, Udad, Moong, Masur, Chana and Kulthi.
3. Oil seeds – Musterd, Jatagi, Til, Alsi, Peanut and Karanj.

- Speciality of certain produces which were recorded during discussions-

Karanj Oil: Medicinal, cures itches, repellent to mosquitoes. Waste of Karanj (dry seeds) is used to clear up motha weeds.

Mahua dori (fruits): Edible.

Vegetables: Aloo (potato), Cauliflower, cabbage leafy vegetables - Maithi, Palak, China, Laal bhagi, Tubers - Ghuian, Kachai, Chuian, Sakhin.

Red udad: Ripes late.

Black udad: Ripes early, more production, most adapted to the area.

Cotton: It was associated to Kulthi (horse gram). Now it is not coming up.

Maize: Of two types, small and large.

Khursa: A tuber of the thickness of human thumb 6" long. Bean edible, while boiling Mahua it is mixed in order to sweeten the solution.

Paddy:

- (i) Bhagalpuri Dana: Most scened grain of the area. Small in size.
- (ii) Ramjira: Scented rice small in size.
- (iii) Maosoorei: Doin and Chaura varieties come up in farm.
- (iv) Sarya: 60-65 day crop. Suitable for dry places.
- (v) Bayalo: Red grain. Solution is testy.
- (vi) B.D.200: Cross variety of safari. Grains do not fall on ground. Whereas that of safari, falls on the ground.
- (vii) Sarsarya: Much of the water needed.

- (viii) Kalamdani: Variety has two-grain many a times. This variety is abolished now-a-days.
- (ix) Kalamdani: White and Black- types are there.

There are about 72 types of three/shurbs/climbers in the area.

After the halt of one day, work group started on 19th with a cross cut survey of the village. Surrounded by Bamboos and Paddy fields, it was observed by the group that a good area is engaged with vegetable farming. During the visit in informal tour, villagers shared a lot of things – now-a-days slowly vegetable commerce is leading the economy of villagers. Small Peanuts are first in order of abundance. Kali udad pulse is second. Maize is grown in farms. Cotton is extinct from the area. Production of small maize is more than large-grained variety. Peanuts are of three types- large, small and red. Red variety ripens fast. Chana is also extinct. Kulthi pulse took maximum time of conservation. It is medicinal as well as preventive measures for kidney disorders. There are only two farmers as on date, which are showing the crop. Kulthi is of two types- blacks and mixed. It was told that Shri Suleman Kindo, Shri Kamal Sai were the persons with whom original kulthi is preserved. Rate per Quintal of local kulthi is about Rs 1000/- whereas, kulthi of Belgaon (which is feeding the area now) is Rs 1200/- only per Quintal.

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On the question of biological diversity conservation, the local germ-plasm protection took the lead. (Fig iv) Protection of rights of local farmers was also a matter of concern. Voters were asked to vote for first preference to the perception they think was most important. Five perception were voted in order of preferences by the voters.

Concluding the meeting people of Tangargaon finally decided that the first preference be given to awareness campaign and disseminate the Kulthi seeds all over the district.

What is Bio-diversity	
1. Forests	12
2. Agriculture	07
3. Horticulture	03
4. Animals	06
5. All livings	11
6. Whole environment	09
7. Biological Resources	18
8. Can't say	09

Fig. I

Which is most important Component of biodiversity	
1. Agriculture	09
2. Human Beings	06
3. Forets	27
4. All Herbs/small animals	10
5. All living organisms and trees	18
6. Can't say	03

Fig. II

Lastly it was concluded that Kraits are very necessary for environment. Moreover, their venom is valuable for preparation of anti-snake-venom dose so there must be a plan to protect them and to utilize their venom in such a way that even snake is safe.

Whole village seconded this. Identification of villages where most causes are found will be a task to be done in priority.

There are many aquatic animals also fishes Magani Khokhasi, Gehu, Bambi, Chigti, Ahind Rohu Mrigal Bahia, Kar Bhaku

(Told by Shri Sureshram Painkra, Jagmohan Sai)

In conclusion people gave preferences to

- (i) Project for Hathi Tetenga
- (ii) Project for Krait Venom

ANNEXURE - VI

MINUTES OF JAN PANCHAYAT (PURAINBANDH)

Venue Ground of Panchayat H.Q.

Date June 1st 2001

Participants: Villagers of Purainbandh, Sanko, Mrigkhot, Pandripani, Singibahar BD
Conservation workgroup and village officers.

Agenda: Sensitization of village regarding BD

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On 1st day of June 2001 the member of BD conservation workgroup reached this village. Villagers were astonished to know about bio-diversity. They were explained about BD by many people including workgroup members. In a huge gathering of over 350 people half were ladies. They consulted separately collage girls acted as co-ordinator in women's section. One group of males discussed on agriculture, one on medicinal plants & vegetation other on culture. Ladies made two groups two discuss.

Ultimately a common Panchayat held lastly. Agriculturists had visited more than 90 varieties, which are being sown in the areas. There are 20 varieties which are extract in the areas reason of this was found to be economics of farming.

Which is heavier – Rice or Gold

In Farsabahar area an ape old mactice is an weighing gold by rice grains. This rice known a 'Budha' or 'Badakha' Dhan has a pecnlier property. Bigga in a size, this dhan weigher exactly 48.6mg. and that too every grain without exception. Only when it is brand new, its weight is 48.9mg. after a month, it is 48.6mg. People in Gold business still have some grains today. Its distribution in too much limited. Only in Farsabahar area.

List of other agricultural products: -

Arhar (Gach Rahar, Ketkachi, Chaith, Maghi varieties)

Udad: Khesari (Black) Padari (Ghoda Khur) Chikni, Mati, Iarange Kulthi Black, Kasai

Moong Black grain, Green grain

Chana Red, White, Pin

Gondli (Kulthi) Black, White

Sanwa: Small large

Other: Gangai. Mustard, Cotton, Maize, Til, Gunja

Medicinal herbs group:

Many local healers according their knowledge in the meeting some of them are: -

Shri P.D. Tirkey: -

- (a) In case of Cancer 200 gram Bhui agicha, 5 gm Rakt Sindoor, 50 gm Hadtal, 5 gm Hootia and Kathal leaves are burnt in 250 gm til oil and applied on the wound.
- (b) In piles: - Fruits are Arjun bakel in fire is crushed with sweetner and made taplets to consume twice a dag.

Shri Rameshwer Sai: -

- (a) Bleeding of ladies Kaarnaj leaves and Kari bark are mixed and use 21 days empty stomach.
- (b) Fits adults: - Bakain seeds + Poppy + Chawal tuber + Tiriyo tuber
Child: - Udad pulse seeds + Poppy + Chawal tuber + Tiriyo tuber all crushed at once and made into 5 tubelets.
- (c) Snake bite case: Bark of Chirai-goda crushed and is consumed and is applied dry on the wound
- (d) Launatic dog bite: Mayur chundi + Ranpawan + Ranu are crushed and one consumed.
- (e) Joint pain: Application (external) and consumption of Bhri Champa + Patal nag + Bahu bark + mamarind.

Shri Deo Prasad Sai & Shri Bachan Rai Yadav

Just after delivery Bhanwarmati + Akad windhi + Chhind + Mahajeel + Kulthi are used to make a solution.

Shri Rameshwar Sai

Clothing Raktfal baked in mustered oil is consumed.

Shri Khaman Ram Yadav

Scorpion bite: Tamarind seeds rubbed against a stone, hard enough to make seed warm, and kept on the cut.

Shri Gudal Ram Yadav

(a) Toothache: Bark of Pipal is crushed and brushed on teeth.

(b) Juice of Bhejari Sap wood when applied to teeth comes the toothache.

Many villagers in a group: There are many reptiles found in the area they can be listed as follows: -

Snakes: Cobra, Banded Krait, Ahiraj, Medti Dhamana, Banhani, Blind snake, Chidraheda (Viper) of which Cobra, Krait, Viper, Ahiraj, Medli are poisonous.

Birds: Peacock, Vulture, Coow, Koel, Padki, Myna, Peasants, Parrot, Chamanion, Bhringraj, Jugia, Pickadita, Kumhni, Colcha, Banmurgi (Jungle hen), Eagle, Kute.

Animals: Hare, Wild boor, Kotar, Jackal, Monkey, Bear, Pangotin, Monitor lizard, Newta, Hathi Tetenga, Bid, Tekenga, Scorpion, Agya Scorpion, Khakra, Sahi out of which Agya Scorpion is poisonous (some times fatal) Hathi Tetenga is getting abolished day by day (because its medicinal value)

There was a general concession in the group that Krait Snake bite is maximum in number and wide spread reason is manifold pattern of living horse plan, humidity darkness that is there in rural houses, Rock types and erosion resultants in general lack of awareness regarding character of Krait is also one of the reason for this reasons bites are too many people consider it the biggest enemy and so on the first sight

Krait was killed. Now very slowly people are understanding the concept of bio-diversity like wise Hathi Tetenga (Like monitor lizard) is also getting abolished now.

In general meeting every group presented their discussions the final inference came out to be: -

- Maximum produced rice is No. 90 followed by Safari No. BD 200
- Diversity of paddy is hampered by entry of new hybrids but this pendency must be stopped
- Animals are equally important for environment as human beings and vegetation's
- In general the whole bio-diversity must be protected, either by govt attempts & villagers themselves.
- Charaigoda cusses theses also
- Overall there must be a plan to protects local traditional knowledge and to conserve it
- Karhani paddy is necessary for Hadia
- Hathi Tetenga is depending because of its medicinal skin, it must be protected
- Kraits are though fatal when bite charaigoda trees bank repeats snake

ANNEXURE - VII

CULTURAL TRAITS IN JASHPUR

(Study and documentation)

Period of Project	1 year
Area covered	Revenue district of Jashpur
Nature of task	Videograph and monograph of Folk dances of local tribals

Tribes studies

Hill Korwas, Nagesia, Khudias
Asurs, Birhore, Kanwars and
Oraons.

Text:-

Eastern extremity of Chhattishgarh State and the Western edge of Chotanagpur Plateau touching the altitude of over 3500 feet is the introduction of Jashpur district.

Covered with 52.4% geographical area by forest, need of the land for today is sustenance and increment in forest cover. Treasure of forest wealth is coupled with tribal tradition and one of the most important, becoming rarer in other part of nation the bio-diversity cultural diversity and topographic ecosystem diversity are characteristic of the area.

On highland we have Sal forest of dry nature with associates, in plains down, the Sal approximately shows taken presence with dry deciduous spp. dominating and replacing it.

Normal temp is low and rainy days are too much, also the rainfall/annum. Topography has two end points of lowlands with sparse vegetation, mostly land use being farming with another end leaving high lands called pats.

Owing to the tough nature of topography, sharp cultural diversity is seen. Tribals residing on pats (also in lowing area) have their own folk lore they have their songs and dances according to their life style. They have dances of love, pleasure, moan festival, marriage, and crop-festival and so on. Some dances are gender firm only ladies play them. Every dance has some or the other cultural importance either they show the economic condition of the village that time, may be religious, many a times dances also fulfil their beliefs.

Songs are locally created. They are assisted with some raw instrument-drums and turhi being the two main constituents. Song dominates the rythem of dance

Ornaments of peacock feather, shells and some times (now-a-days) synthetic, are also used mostly they are (Tribals) “Hadia” is a common feature which charges them a lot.

Approximate distribution of various tribal groups in Jashpur

Name of Tribe	Place where generally settled	Direction and distance from distt. H.Q.
Oraons	All over distt.	--
Kanwars	Tapkara & Vicinty	South 50-100 km.
Nagesias	Kaire-Kinkel	West 15-25 km.
Gond	Patratoli	South 15-100 km.
Khadia-Munda	Tapkara-Makraibandha	South-East 30-40 km.
Hill Korwas	All over pats	North-West 30-100 km.
Birhors	Bagicha pats	South-West 100 km.
Asurs	Konga, Manora and Vicinty pats	North 20-80 km.

Calender of folk lore on plateau

English month	Hindi month	Date(Tithi) of performance	Name of dance	Best performing place & distance from H.Q.	Name of tribe performing it	Remark
1	2	3	4	5	6	7
March/April	Chait	Poornima (Full moon)	Sarhul	All area the distt.	Oraons, Munds, Ku dia	
April/May	Baisak	-	Dhuria	Bumtel (10km)	Oraons	
May/June	Jheth	-	Tunta	Nimgaon (20km)	Oraons	

June/July	Asadh					
July/Aug	Sawan	Following day of Ganesh Chaturti	Jhumar	Pandripani Tapkara (83km)	Kanwars	
Aug/Sept	Bhadon	Ekadashi (11 th)	* Karma Nayakhan	Patratoli, Loro (25km)	Gond	
Sept/Oct	Kuwar	Following day of Dashahara	Rayeez karma Jeetiya	Devidadgaon (15km)	Oraons	
Oct/Nov	Kartik	Poornima	Jeetiya	Purainbandh (83km)	Kanwar	
Nov/Dec	Aghan	Deepawali	Suwa Gaura puja Damkach	Kansabel (68km)	Kanwar	
Dec/Jan	Poos	-	Damkach	Kaire-kinkel	Nagesias	
Jan/Feb	Magh					
Feb/March	Fagun		Faag	Purainbandh (83km)	Kanwar	

Note:- * intensity of performance getting less day by day

Project for creating a visual asset:-

Name of Resource person

Shri Temba Ram Bhagat

Phone : 23723

C/O Superintend

Badalkhol/WL. Sanctuary

Jashpur Phone – 23560

Mode of operation

- (i) Firstly dancing groups are identified for each folk dance.
- (ii) Along with resource person some bio-diversity board members are sent to the village a day before
- (iii) On the actual performing day one videographer, resource person, two B.D. board members are sent to the village in a vehicle to cover the dance, short interview on the spot is taken
- (iv) Cassette is prepared for 1 hour so that after editing it can be cut short to ½ an hour
- (v) Time lapse will be 1 whole year (i.e. April 2001 to March 2002)

Statement of Expenditure

S.N.	Task	Qty.	Rate	Amount
1.	Cost of Video cassette	04	300/-	1200/-
2.	Recording on the spot	12	1500/-	18000/-
3.	Vehicle fare	12	800/-	9600/-
4.	Vehicle fare	12	800/-	9600/-
5.	Expenses on the dancing party	12	1500/-	18000/-
6.	Honorarium of (Resource person)	12	500/-	6000/-
7.	Unforeseen/expr	L.S.	L.S.	2600/-
Total				65000/-

(RS. SIXTY FIVE THOUSAND ONLY)

ANNEXURE – VIII

LIST OF VILLAGES TO BE COVERED IN IST PHASE: -

Bagicha Block -	Madhupur, Hukrakona, Kawai, Khakhara, Jokari.
Farsabahr Block-	Purainbandh, Sanko, Mrigkhol, Pandripani, Singibahr.
Kansabel Block	Tangargaon,

ANNEXURE - IX

ANIMAL HUSBANDRY STATISTICS

t'kiqj ftys esa miyC/k lk'kq/ku dh
tkudkjh

Ø	fodkl [k.M	xksoa'k h;	HkSal oa'kh;	HksM@H ksMh	cdjs@ cdfj;ka	?kksM s@ VV~V w	dqdj	dqy eosf'k;ksa sasa dk ;ksx	dqDD qV@ cn[k
1	2	3	4	5	6	7	8	9	10
1	iRFkyxka o	68.633	10564	4908	33734	26	5528	123393	85635
2	t'kiqj	40.572	2790	725	17043	110	10256	71496	27626
3	euksjk	35.183	3399	1054	10919	195	7904	58654	25227
4	dqudqjh	40.789	4482	514	19140	-	1805	66730	32907
5	ngynqyk	33.371	3247	1708	19435	24	3222	61067	26548
6	Qjlkcgkj	47.486	5283	3175	25676	18	4748	87386	40531

7	cxhpk	94.938	15594	1860	37204	1077	12999	163672	58771
8	dkalkcsy	38.207	2877	2018	15971	5	5277	64355	30708
	;ksx &	399.179	48236	15962	179122	1455	51739	696753	327953

ANNEXURE – X

VAIDYON KI SUCHI (List of Local Healers)

**t'kiqj ftys dh mu O;fDr;ksa dh lqph
tks tM+h cwVh ds mi;ksx ds ckjs esa tkudkjh j[krs gSa%&**

1fodkl [k.M & t'kiqj

Jh jken;ky eka>h] dkseM+ks

Jh tksguk dqtwj] tdck

filVj iqfurk feta] tfj;k fe'ku

Jh fueZy jke] dneVksyh

Jh jkeizlkn] >ksyaxk

Jh tksguk jke] >ksyaxk

Jh Qxqok jke] dY;k.k vkJe t'kiqj
Jh nsopUnz yky] VqdwVksyh ¼cksdh½
Jh eax: jke] vkjk ¼eksjkMhg½
Jh cksys'oj jke &**&
Jh cq/kjke &**&
Jh gkstyks lk;] gqdqfVyh ¼bapsyk½
Jh :iukFk flag egqvkVksyh
Jh x.ks'k flag] cjxkao
Jh cU/kqjke] dY;k.k vkJe t'kiqj
Jh ekukjke] dY;k.k vkJe t'kiqj
Jh Bsuw flag] vkjk] eksjkMhg
Jh lq[kukFk jke] fxjkax t'kiqj
Jh :iukFk flag egqvkdkasuk] fcjksikuh
MkW- ch- ,u- mik;/k;] ,u-bZ-,l- dkWyst
MkW- e`xsUnz flag] dY'k.k vkJe] t'kiqj

2fodkl [k.M & euksjk

Jh cyjke] /klek
Jh clar cSxk] /klek
Jh dt: jke] dkaVkcsy
Jh Hkqus'koj] dkaVkcsy
Jh [kydks jke] nkSukiV
Jh iqfyl jke] dqykMkSj
Jh cksdksjke] dqykMkSj
Jh lq[kwjke csyMhg
Jh lq/kok jke] xfM;ksVksaxjh
Jh nfl;k jke] /kkSjkikB

Jh psjBks] cksjksdksuk
Jh VsMaxk jke] NrkJsh
Jh bfXu;k'k feat] NrkJsh
Jh lqyseku feat] NrkJsh
Jh dsl: jke ¼dksjok½] NrkJsh
Jh eaxjk jke] NrkJsh
Jh n/kh flag] [kksaxk
Jh dsVh jke] ifV;k
Jh >qeu jke] gjhZ
Jh lq[kwjke] lksuD;kjh
Jh txsjke] lksxMk
Jh lksgu mjkao] lksxMk
Jh lqjtu yksgkj] lksxMk
Jh pqMSgjke uxsfI;k] pfM;k
Jh yksdukFk] pfM;k
Jh blnksj] [kM+dksuk
Jh uke] [kM+dksuk
Jh txnso] xksvk: ¼?kk?kjk½
Jh dUnjk] xtek ¼cqtqZik½
Jh jfr;k] [kkSjk
Jh foQ;k] lhdjh
Jh tfru jke] [kksaxk
Jh dqjusy'k] ukMkj
Jh ekjdksl] cgsjuk
Jh vFkuk] ukMkj
Jh izcy fet] gjhZ

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Jh pjdw jke] jkSfV;k] VhiuVksyh
Jh yksnjks] dksjok] cqduk
Jh jkeuUnu jkSfr;k] cqduk
Jh Hkqdwjke jkSfr;k] pkaikVksyh
Jh Jhiky [kS[kkj] Qjlk
Jh Iriky] M.MkMhg
Jh dju] nqynqyk
Jh fujkyk jkae Hkxr] NsjksMkaM
Jh LVsdsu] HkqIMhVksyh
Jh lqn'kZu] dsUnikuh
Jh jkenso flag] dsUnikuh
Jh ejnu jke] >jxkao
Jh jkel;kjs] dks;jhekStk $\frac{1}{4}$ irjkVksyh $\frac{1}{2}$ ukjk;.kiqj

4fodkl [k.M & Qjlkcgkj

Jh [kxs'oj jke] e`x[kksy
Jh xqn: frdhZ] ridjk tequk
Jh fudks frdhZ] ridjk tequk
Jh nkfu;y ,Ddk] ridjk tequk $\frac{1}{4}$ BksjBksjh $\frac{1}{2}$
Jh cgknqj jke] csyMh;k
Jh flrkyq jke] Qjlkcgkj
Jh lqnkj jke] Qjlkcgkj
Jh cjt看 jke] ekekeq.Mk
Jh ekek dkjks] es<j
Jh bXusl jke] Qkjlkcgkj
Jh thru jke] $\frac{1}{4}$ vkSjMhg $\frac{1}{2}$ egqvkVksyh

Jh igkM+ jke] ¼vkSjMhg½
Jh jiqr] iqgkyh
Jh vkyfol] lsejrky
Jh lqHkk" k jke] iqgkyh
Jh cykfl;l frdhZ] BksjBksjh ¼tequk½
Jh vnykn jke] ixqjkcqkj tkeq.Mk
Jh cks/k flag jke] ixqjkcqkj
Jh jkes'oj jke] ixqjkcqkj
Jh f'ko dqtwj] BksjBksjh
Jh vxLrql frdhZ] BksjBksjh
Jh fudksyl frdhZ] BksjBksjh
Jh nsofuy Vksliks] iqVyh
Jh bXusl frdhZ] rkekeq.Mk

5fodkl [k.M & dqudqjh

Jh lksek: jke] fxjyhMhg] yks/kek
Jh useukjk;.k jke] yks/kek
Jh y[ku jke] tksdkjh
Jh xksfoUn flag] tksdkjh
Jh lsgu jke] /kqekMkaUM
Jh nknwjke] dksjok cjbZ
Jh iks<k jke] csgjk[kkj
Jh Hkkxw jke] csgjk[kkj
Jh fcjflag jke] csgjk[kkj
Jh gftZr jke] tksjknxk
Jh lq[kyjke] ckdjnqyk
Jh tsEI] ikdjVksyh

Jh tks/ku] pVdiqj] csus
Jh csuh izlkn xqlrk] dqatkjk
Jh f=kykspu jke phd] lfygkVksyh
Jh Inuw flag] lqUnjheq.Mk ¼djek½
Jh tkudh flag] lqUnjheq.Mk ¼djek½
Jh lq[kekuql frXxk] dqjdqkx ¼dq=kh cgyk½ tksdcgyk
Jh e/kuw] dqjdqkx ¼dq=kh cgyk½ tksdcgyk
Jh fo".kq xqlrk] dqudqjh
Jh xks/ksufli; l dqtwj] cgsjk[kkj] tksxcgyk
Jh ek'kZy dqtwj] dqudqjh
Jh naxqjke] idjhdNkj

6fodkl [k.M & dkalkcsy

Jh flfoy jke] jkor nknikuh
Jh cq/kjke ukxoa'kh] pwYgkikuh
Jh dehy frXxk] nks/kj ¼cklsu½
Jh mfyax fey dqlqerky] ljkikuh
Jh nsozr nkl] dkalkcsy
Jh ca/knso] xkrhdgqvk
Jh yks/kuk jke] dVaxk[kkj
Jh tVk jke] dVaxk[kkj
Jh ihrkaEcj jke] [kwVhVksyh
Jh euj[k flag]][kwVhVksyh
Jh fo'oukFk] Vkaxjxkao ¼dkalkcsy½
Jh cq/ks'oj] jsoMk
Jh nsoflag] dksjaxk
Jh vczkge dsjdsV~Vk] idjhVksyh

Jh pksUgl ydMk] idjhVksyh
Jh ykyw jke jkmr] cVbZdsyk
Jh xksih doaj] Vkaxjxkao

7fodkl [k.M & cxhpk

Jh cks/kk jke] iVdksuk
Jh MsMsjke] yks<suk
Jh dksryk]ke] yks<suk
Jh uudk jke] Hkaoj
ghju jke <sdMhik] dobZ
Jh gjhukFk jke] Qqy>j ¼pEik½
Jh Hkh[kw jke] Qqy>j ¼pEik½
Jh xkfnM+ flag] tqjrsyk ¼fiY[kh½
Jh gMh tksM+ ckck] lkghMkaM
Jh vCnqy IRrkj] IUuk
Jh f'ko dqekj] [k[kjk] cxhpk
Jh ckYehdh ;kno] xk;cqM+k] cxhpk
Jh vczkge dsjdsV~Vk] idjhVksyh
Jh /kuh]ke] jrck
Jh exu] cxMksy
Jh tkxa'oj] fHkr?kjk

8fodkl [k.M & iRFkyxkao

Jh fot; frokjh] iRFkyxkao
Jh vYQzsM [ky[kksa] fryMsxk

ANNEXURE – XI **MANPOWER UTILIZATION (probe state-wise)**

Activities	Haryana		Madhya Pradesh		Gujarat		Orissa		Tamil Nadu		Meghalaya	
	M	F	M	F	M	F	M	F	M	F	M	F
Fishing, Forestry, Horticulture, Gardening												
Nursery seedlings	0	0	0.02	0.01	0	0	0	0	0.02	0.01	0.06	0
Planting, Tending & procesing of trees	0	0	0.02	0	0.02	0	0.03	0.03	0.03	0	0.67	1.08
Wood cutting, chopping & stocking firewood	0.03	0.09	0.32	0.20	0.03	0.02	0.30	0.17	0.23	0.02	1.80	0.69
Collection of Fruit, water, plants etc., storing and hunting												
Collection of minor forest produce, leaves, bamboo etc.	0	0.01	0.15	0.25	0.10	0.18	0.22	0.30	0.04	0.02	0.06	0.24
Collection of fuel/fuel wood/twigs(code 143)	0.03	0.39	0.14	0.48	0.01	0.01	0.13	0.33	0.07	0.27	0.21	0.42

Source:- Central Statistical organization's report of the Time Use Survey, April 2000.

ANNEXURE – XII

Range and Status of Biodiversity in Jashpur :-

Large Trees

S.No.	Plant species	Local Name	Family	Habit	Status
1	<i>Acacia lenticularis (Ham)</i>	Khairi	Leguminosae	T	r
2	<i>Acacia nilotica (L) Wild, Ex Del. susp. Indica (Benth) Brenan (Acacia arabica Wild)</i>	Babul	Leguminosae (Mimoseae)	T	la
3	<i>Adina cordifolia (Hook.f.)</i>	Haldu	Rubiaceae	T	f
4	<i>Adina cordifolia (Hook.f.)</i>	Karam	Rubiaceae	T	f
5	<i>Aegle marmelos (Correa)</i>	Bel	Rutaceae	T	o
6	<i>Ailanthus excelsa (Roxb.)</i>	Maharukh	Simarubaceae	T	r
	<i>(A.malabarica D.C.)</i>				
7	<i>Albizzia chinensis (Merr)</i>	Laphus	Leguminosae	T	r
8	<i>Albizzia lebbeck (Benth.)</i>	Kala siris	Leguminosae (Mimoseae)	T	r
9	<i>Albizzia odoratissima (Benth)</i>	Chichwa	Leguminosae (Mimoseae)	T	r
10	<i>Albizzia odoratissima (Benth)</i>	Tetra	Leguminosae	T	r
11	<i>Albizzia procera (Benth)</i>	Safed siris	Leguminosae (Mimoseae)	T	o
12	<i>Anogeissus acuminata (Wall.)</i>	Pasi/Parsia	Combretaceae	T	o
13	<i>Anogeissus latifolia (Wall.)</i>	Dhaora	Combretaceae	T	f
14	<i>Anogeisus pendula (Edgew)</i>	Kardhai	Combretaceae	T	r
15	<i>Anthocephalus cadmaba (Mig.)</i>	Kadam	Rubiaceae	T	r
16	<i>Azadiracta Indica (A.Juss)</i>	Neem	Meliaceae	T	r
17	<i>Bauhinia Retusa (Ham)</i>	Burju	Leguminosae	T	c

18	<i>Boswellia Serrata (Roxb.)</i>	Salaha/Salai	Burseraceae	T	A
19	<i>Bridelia Retusa (Spreng)</i> <i>(B.laciniosa Auct. Non Naud.)</i>	Kasai	Euphorbiaceae	T	lc
20	<i>Butea monosprma (Lamk.)</i> <i>Taub. (Butea Frondosa keonig</i> <i>ex. Roxb)</i>	Palas	Leguminosae (Papilionaceae)	T	a
21	<i>Cardia dichotoma (Frost)</i>	Lasora	Boraginaceae	T	r
22	<i>Careya arborea (Roxb.)</i>	Kunmbi	Lecythidaceae	T	o
23	<i>Chloroxylon swietenia (D.C.)</i>	Bhirra/Bhirwa	Meliaceae	T	lc
24	<i>Cleistanthus collinus (Benth)</i>	Garari	Euphorbiaceae	T	c
25	<i>Croton oblongifolius (Roxb)</i>	Putri	Euphorbiaceae	T	c
26	<i>Dalbergia Latifolia (Roxb)</i>	Shisham	Leguminosae (Papilionaceae)	T	o
27	<i>Dalbergia Paniculata (Roxb)</i>	Dhoban/Dhobin	Leguminosae (Papilionaceae)	T	o
28	<i>Dalbergia Sissoo (Roxb)</i>	Sissoo	Leguminosae (Papilionaceae)	T	c
29	<i>Dillenia Pentagyna (Roxb)</i>	Rai	Dilleniaceae	T	o
30	<i>Dillenia Pentagyna (Roxb)</i>	Kalla	Dilleniaceae	T	o
31	<i>Diospyros Melanoxylon</i> <i>(Roxb)</i>	Tendu	Ebenaceae	T	a
32	<i>Diospyros Melanoxylon</i> <i>(Roxb)(Dembryopteris Pers.)</i>	Kendu	Ebenaceae	T	a
33	<i>Eucalyptus Globulus labill</i> <i>(Eucalyptus hybrid)</i>	Neelgiri	Myrtaceae	T	-
34	<i>F. glomerata (Roxb) Ficus</i> <i>racemosa (Linn)</i>	Gular	Urticaceae	T	o
35	<i>Feronia limonia (Linn)</i> <i>Swingle (F. elephantum</i> <i>correa)</i>	Kaith	Rutaceae	T	r
36	<i>Ficus bengalensis (Linn)</i>	Bar/Bargad/Bad	Urticaceae	T	o
37	<i>Ficus glomerata (Roxb) Ficus</i> <i>racemosa (Linn)</i>	Dumar	Moyaceae	T	o
38	<i>Ficus lacor (Buch-Ham)</i>	Paker	Moraceae	T	r

	<i>(F.infectoria Roxb)</i>				
39	<i>Ficus religios (Linn)</i>	Pipal	Meliaceae	T	o
40	<i>Ficus semicordata (Buch-Ham ex j.e. smith Reas) Ficus cunea-Buch-Ham ex.Roxb)</i>	Ghui	Moraceae	T	o
41	<i>Garuga pinnata (Roxb)</i>	Kekat/Kekad	Buseraceae	T	a
42	<i>Gmelina arborea (Linn)</i>	Khamer	Verbenaceae	T	c
43	<i>Gmelina arborea (Roxb)</i>	Khamer/gama	Verbenaceae	T	c
44	<i>Grewia tiliaefolia (Vahl)</i>	Dhaman	Tiliaceae	T	a
45	<i>Hymenodictyon excelsum</i>	Potei	Rubiaceae	T	o
46	<i>Lagerstroemia parviflora</i>	Senha	Lythraceae	T	a
47	<i>Lagerstroemia parviflora (Roxb)</i>	Lendia	Lythraceae	T	a
48	<i>Lannea coromandelica (Engler)</i>	Moyen	Anacardiaceae	T	c
49	<i>Lannea coromandelica (Hult Merr (L.Grandis Dennst(Engler</i>	Jhingan	Anacardiaceae	T	c
50	<i>Madhuca indica (Gmel) (M.latifolia Roxb Macbride) Bassia latifolia (Roxb)</i>	Mahua	Sapotaceae	T	a
51	<i>Mangifera indica (Lim)</i>	Aam	Anacardiaceae	T	va
52	<i>Melia azedarach (Linn)</i>	Bakain	Meliaceae	T	o
53	<i>Michelia champaca (Linn.)</i>	Champa	Mangoliaceae	T	r
54	<i>Milusa tomentosa (Roxb) J.sinclair (Saccopetalum tomentosum H.F.&T.)</i>	Kari	Anonaceae	T	f
55	<i>Mitragyan parviflia (Korth)</i>	Mundi	Rubiaceae	T	c
56	<i>Mitragyan parvifolia (Roxb) Korth (Stephegyne pravifolia Korth)</i>	Karmi/Kaim	Rubiaceae	T	c
57	<i>Ougeinia oojeinensis (Roxb)</i>	Tinsa	Leguminosae (Papilionaceae)	T	o
58	<i>Pongamia pinnata (Linn pierre) P.glabra vent.)</i>	Karanj	Leguminosae (Papilionaceae)	T	r

59	<i>Protium serratum (Wallex Colebr) Engl.</i>	Maker-kusum	Burseraceae	T	r
60	<i>Pterocarpus marsupium (Roxb)</i>	Bijasal (Bija)	Leguminosae (Papilionaceae)	T	o
61	<i>Petrospermum Acerifolium (Willd)</i>	Maghkunda	Sterculiaceae	T	r
62	<i>Raderma-chera xylocarpa (Roxb) K. Suhum</i>	Padli	Bignoniaceae	T	r
63	<i>Salmalia malabarica (D.C.) Schott & Endl. (Bombax malabaricum D.C.)</i>	Semal	Malvaceae	T	o
64	<i>Schleichera oleosa (Lour) Oken (S. trijiga Willd)</i>	Kusum	Sapindaceae	T	r
65	<i>Schrebera swieteniodes</i>	Ghanto	Oleaceae	T	c
66	<i>Schrebera</i>	Kokha	Oleaceae	T	c
67	<i>Shorea roustia (Gaerth)</i>	Sarai/Sal	Dipterocarpaceae	T	va
68	<i>Soymida febrifuga (A.juss)</i>	Rohina/Rohan	Meliaceae	T	o
69	<i>Spondias pinnata (Linn.F)</i>	Amera	Anacardiaceae	T	o
70	<i>Aterculia urens (Roxb)</i>	Kullu/Kaugundra	Sterculiaceae	T	lc
71	<i>Stereospermum suaveolens D.C. (S.personatum Hasskuhatt)</i>	Padar	Bijoniaceae	T	r
72	<i>Syzygium cumini (Linn) skeels (Eugenia jambolana Lamk.)</i>	Jamun	Myrtaceae	T	f
73	<i>Syzygium heyneanum (Wall)</i>	Okharian	Myrtaceae	T	o
74	<i>Tamarindus indica (Linn)</i>	Imli	Leguminosae (Caesalpiniae)	T	r
75	<i>Tectona grandis (Linn.f.)</i>	Sagon	Verbenaceae	T	-
76	<i>Terminalia arjuna (Bedd)</i>	Koha	Combretaceae	T	la
77	<i>Terminalia belerica (Roxb)</i>	Bahera	Combretaceae	T	c
78	<i>Terminalia chebula (Retz.)</i>	Harra	Combretaceae	T	f
79	<i>Terminalia tomentosa (w.e.t. Arn)</i>	Saja	Combretaceae	T	a
80	<i>Toona ciliata (Roem) (Cedrela toona. Roxb)</i>	Tun	Meliaceae	T	c
81	<i>Trewia nudiflora (Linn)</i>	Khurdi/Khursi	Ephorbiaceae	T	r

82	<i>Vitex leucoxylo</i> (Linn.f.)	Charaigoda	Verbenaceae	T	r

‘Small Trees’

S.N.	Plant Species	Local Name	Family	Habit	Status
1	<i>Acacia catechu</i> (Wild)	Khair	Leguminosae (Mimosaceae)	ST	lc
2	<i>Antidesma diandrum</i> (Roth)	Amti	Euphorbiaceae	ST	lc
3	<i>Artocarpus Heterophyllus</i>	Kathal	Moraceae	ST	r
4	<i>Bauhinia melabarica</i>	Tewar	Leguminosae	ST	f
5	<i>Bauhinia purpurea</i> (Linn.)	Koinar	Leguminosae	ST	c
6	<i>Bauhinia racemosa</i> (Lamk)	Asta	Leguminosae (Caesalpiniaceae)	ST	o
7	<i>Bauhinia racemosa</i> (Lamk)	Kathmohli	Leguminosae	ST	o
8	<i>Bauhinia variegata</i> (Lamk)	Kachnar	Leguminosae (Caesalpiniaceae)	ST	o
9	<i>Buchanania lanzan</i> (Spreng)	Achar	Anacardiaceae	ST	a
10	<i>Buchanania lanzan</i> (Spreng)	Char	Anacardiaceae	ST	a
11	<i>Cascaria elliptica</i> (Willd)(<i>Cascaria</i>) <i>tomentosa</i> (Roxb)	Bairi	Samydaceae	ST	f
12	<i>Casari graveolens</i> (Dalz)	Salisihar	Samydaceae	ST	la
13	<i>Cascaria tomentosa</i> (Roxb) (<i>Cascaria</i>) <i>elliptica</i> (Willd)	Chilho	Samydaceae	ST	f
14	<i>Cassi fistula</i> (Linn)	Amaltas	Leguminosae (Caesalpiniaceae)	ST	c
15	<i>Cassia fistula</i> (Linn)	Dhanbo	Leguminosae	ST	c

16	<i>Cochlospermum religiosum</i> (Linn Aslten)	Galagal/Dalgola	Bixaceae	ST	lc
17	<i>Dillenia aurea</i> (Smith)	Korkut	Dilleniaceae	ST	a
18	<i>Diospyros</i> <i>Montana</i> (Roxb)	Bikh-tendu	Ebenaceae	ST	o
19	<i>Elaeodendron</i> <i>Glaucum</i> (Pers)	Chordhuwan	Celestraceae	ST	f
20	<i>Elaeodendron</i> <i>Glaucum</i> (Pers)	Jamarasi		ST	f
21	<i>Elaeodendron</i> <i>Glaucum</i> (Pers)	Mugri	Celestraceae	ST	o
22	<i>Elaeodendron</i> <i>Glaucum</i> (Pers)	Ratangaura	Celestraceae	ST	f
23	<i>Emblica</i> <i>Officinalis</i> (Gaerth)	Aonla	Euphorbiaceae	ST	c
24	<i>Erythrina</i> <i>Suberosa</i> (Roxb)	Pharhad/Panga	Leguminosae	ST	r
25	<i>Eyphorbia</i> <i>Triucalli</i> (Linn) (<i>Euphorbia nerifolia</i> (Linn))	Thua/Thuar	Euphorbiaceae	ST	o
26	<i>Flaucourtia ramontchi</i> (E. Herit)	Kakai	Bixaceae	ST	o
27	<i>Gardenia</i> <i>Gummifera</i> (Linn.f.t)	Khurlu	Rubiaceae	ST	f
28	<i>Gardenia latifolia</i> (Ait)	Ponda/Papra	Rubiaceae	ST	c
29	<i>Gardenia trugida</i> (Roxb)	Kharhar	Rubiaceae	ST	c
30	<i>Holarrhena</i> <i>Antidysentrica</i> (Well)	Dudhi	Apocyanaceae	ST	la
31	<i>Holarrhena</i> <i>Antidysentrica</i> (Well)	Korya	Apocyanaceae	ST	la
32	<i>Kydia calycina</i> (Roxb)	Baranga	Malvaceae	ST	o
33	<i>Kydia calycina</i> (Roxb)	Poyabaranga	Malvaceae	ST	o
34	<i>Kydia calycina</i> (Roxb)	Pula	Malvaceae	ST	o
35	<i>Litsaea sebifera</i> (Pers)	Maida/Maidal akari	Lauraceae	ST	r
36	<i>Mallotus philippensis</i> (muell)	Kamalagundi	Euphorbiaceae	ST	o
37	<i>Oroxylum</i>	Dagdua	Bignoniaceae	ST	f

	<i>Indicum (Vent)</i>				
38	<i>Premna Flavescens (Ham)</i>	Deogamhar	Verbenaceae	ST	o
39	<i>Rabdia dumetorum</i>	Mauna/Mainphal	Rubiaceae	ST	a
40	<i>Randia dumetorum (DC)</i>	Pendra	Rubiaceae	ST	r
41	<i>Slix tetrasperms</i>	Chour/Chanhu	Salicaceae	ST	r
42	<i>Semacarpu Anacardium (Linn)</i>	Bhilwan	Anacardiaceae	ST	c
43	<i>Symplocos Racemosa (Roxb)</i>	Lodh	Styraceae	ST	c
44	<i>Syzygium Heyneanum (Wall)</i>	Jamti	Myrtaceae	ST	f
45	<i>Syzygium Heyneanum (Wall)</i>	Kath Jamun	Myrtaceae	ST	f
46	<i>Wendlandia Exserta (D.C.)</i>	Tilai/Tilwan	Rubiaceae	ST	a
47	<i>Wedlandia Tinctoria (D.C.)</i>	Hundru	Rubiaceae	ST	f
48	<i>Zizyphus manuratiiana (Lamk) (Zjujuba Lamk.non.mill)</i>	Ber	Rhamnaceae	ST	la
49	<i>Zizyphus Xylopyra (Willd)</i>	Ghont	Rhamnaceae	ST	f

'Shrubs and Herbs'

S.N.	Plant Species	Local Name	Family	Habit	Status
1	<i>Acanthosper,um Hispidum (D.C.)</i>	Bokrakanta	Acanthaceae	US	o
2	<i>Achyranthes aspera (Linn.)</i>	Aparmarg	Amaranthaceae	S	r
3	<i>Andrographis Paniculata (Nees)</i>	Bhuineem	Acanthaceae	H	lc
4	<i>Azanza lampas (Cav.) Alef (Thespesiapas Cay. Diss)</i>	Bankapas	Malvaceae	US	o
5	<i>Calotropis gigantea (Br)</i>	Akawan/Aak	Asclepiadaceae	S	r
6	<i>Carissa opaca (Step) (Carissa spinarum auct non Linn)</i>	Karonda	Apocynaceae	S	lc

7	<i>Cassia tora</i> (Linn)	Chakor/Chukra	Leguminosae	H	va
8	<i>Colebrookia Oppositifolia</i> (Smith) (<i>Clerodendron viscosum</i> Vent)	Bhainsa- Dhura	Verbinaceae	S	o
9	<i>Dodonia viscosa</i> (Linn)	Karantha (Jungli- Mehandi)	Sapindaceae	S	la
10	<i>Emblia tejeriam-cottam</i>	Baibirang	Myrsinaceae	S	r
11	<i>Emblia tejeriam-cottam</i>	Seasapoda	Myrsinaceae	S	o
12	<i>Eranthemum (purpurascens A. Anders) (D. montana T. Anders)</i>	Bantulsi	Labiaceae	US	la
13	<i>Gradenia Gummifera</i> (Linn.f.t.)	Khurlu	Rubiaceae	S	f
14	<i>Greawi hirsuta</i> (Vahl)	Gursukri	Tilia-ceae	S	o
15	<i>Helicteres isora</i> (Linn)	Ainth	Sterculiaceae	S	r
16	<i>Helicteres isora</i> (Linn)	Marorphali	Sterculiaceae	S	r
17	<i>Hibiscus Sabdariffa</i> (Linn)	Patawa	Malvaceae	S	o
18	<i>Holarrhena Antidysentrica</i> (Wall)	Korya	Apocynaceae	S	la
19	<i>Indigofera cassiodes</i> (Roth) (<i>Indigofera pulchella</i> D.C.) (<i>Indigofera hirsuta</i> Linn) (<i>Indigofera tinctoria</i> Linn) (<i>Indigofera triota</i> Linn)	Jirhul	Leguminosae	S	la
20	<i>Ixora arborea</i> (Roxb)	Lokhandi	Rubiaceae	S	r
21	<i>Lantana camara</i> (Linn)	Putus	Verbenaceae	S	la
22	<i>Moghanta Chappar</i> (Ham)	Paink	Leguminosae	US	c
23	<i>Murraya Paniculata</i> (Linn) (<i>Murraya exaltata</i> Linn)	Madhukamni (Banmirchi)	Rutaceae	S	c
24	<i>Musa sapientum</i> (Linn)	Kela	Musaceae	S	c
25	<i>Nyctanthes Arbortristis</i> (Linn)	Harsingar	Verbinaceae	S	c
26	<i>Nyctanthes Arbortristis</i> (Linn)	Khirsali	Verbinaceae	S	c

27	<i>Phoenix acaulis</i> (Buch)	Chhind	Palmae	US	va
28	<i>Pittosporum Floribundum</i> (W & A)	Baghmuta	Pittosperaceae	S	r
29	<i>Sida cordifolia</i> (Linn)	Bariar	Malvaceae	US	o
30	<i>Varnonia Divergens</i> (Benth)	Mothi	Compositae	S	o
31	<i>Vitex negundo</i> (Linn)	Nirgudi	Verbinaceae	S	lc
32	<i>Vitex negundo</i> (Linn)	Sindwair	Verbinaceae	S	lc
33	<i>Woodfordia Fruticosa</i> (Linn Kurz)	Dhawai	Lythraceae	S	va
34	<i>Xanthium Strumarium</i> (Roxb)	Gokhru	Composite	US	lc

‘Climbers’

S.N.	Plant Species	Local Name	Family	Habit	Status
1	<i>Acacia caesia</i> (W et A)	Garanj	Leguminosae	C	la
2	<i>Ampelocissus latifolia</i> (Roxb) <i>Plauch</i> (<i>Vites latifolia</i> Roxb)	Dhote/Dhonto/ Dokerbel	Amlelidaceae	C	r
3	<i>Asparagus racemosus</i> (Willd)	Kargikenta	Liliaceae	C	c
4	<i>Bauhinia vahlii</i> W & A	Sihar	Leguminosae	C	va
5	<i>Butea parviflora</i> (Roxb) (<i>Spatholopus Roxburghi</i>) (Benth)	Bendo	Leguminosae	C	c
6	<i>Butea superba</i> (Roxb)	Dodrangi	Leguminosae	C	c
7	<i>Butea superba</i> (Roxb)	Palasbel	Leguminosae	C	c
8	<i>Celastrus Paniculata</i> (Willd)	Kujuri	Celastraceae	C	r
9	<i>Celastrus Paniculata</i> (Willd)	Malkangni	Celastraceae	C	r
10	<i>Cissampelos pareira</i> (Linn)	Parhi	Menispermaceae	C	o
11	<i>Cryptolepsin Buchanani</i> (Roem & Sch)	Dudhmogra/ Dudhi	Asclepiadaceae	C	r
12	<i>Cryptolepsin Buchanani</i>	Nagbel	Asclepiadaceae	C	r

	(Roem & Sch)				
13	<i>Dioscorea Bulbifera</i> (Linn)	Pitharoo	Dioscoreaceae	C	r
14	<i>Ipomea Digitata</i> (Linn)	Patal kumhra	Convolvulaceae	C	o
15	<i>Millettia ayriculata</i> (Baker)	Gurar	Leguminosae	C	c
16	<i>Mucuna prurita</i> (Hook) (<i>Mucuna pruriens</i> Baker)	Kimach/keonch	Leguminosae	C	r
17	<i>Scheffera venulosa</i> (Harms)	Raidaton	Araliaceae	C	o
18	<i>Smilx xeylanica</i> (Linn) (<i>Smilx marcrophylla</i>) (Roxb)	Rampawan/ Ramdaton	Liliaceae	C	c
19	<i>Tinospora Cordifolia</i> (Miers)	Chahur	Menispermaceae	C	r
20	<i>Ventiloga calyculata</i> (Tul)	Keonti	Rhamnaceae	C	c
21	<i>Vitis quadrangularis</i> (Wall) (<i>Vitis repanda</i> W & A)	Panila/panibel	Ampelidaceae	C	o

‘Grasses’

S.N.	Plant Species	Local name	Family	Habit	Status
1	<i>Aristida setacea</i> (Retz)	Ghodapuchi	Gramineae	G	f
2	<i>Chloris dolichestachya</i> (Lag) (<i>Chloris incompleta</i> Roth)	Donarghas	Gramineae	G	c
3	<i>Chrysopogon aciculatus</i> (Retz) Trin	Chorkanta	Gramineae	G	r
4	<i>Cymbopogon martini</i> (Roxb) Wats	Rusa	Gramineae	G	o
5	<i>Cymbopogon martini</i> (Roxb) Wats	Rusa	Gramineae	G	o
6	<i>Cynodon dactylon</i> (pers)	Dub/doob	Gramineae	G	c
7	<i>Dicanthium annulatum</i> (Forsk) sataf	Marbel/Marwel/ Marvel	Gramineae	G	c
8	<i>Echinochloa colonum</i> (Linn) Link	Jrepa/Jheepo	Gramineae	G	c
9	<i>Echinochloa crusgalli</i> (Linn) Beauv	Bado Punchi/Bodop Unchi	Gramineae	G	o
10	<i>Eragrostis tentella</i> (Link)	Pudlusi/Podlasi	Gramineae	G	va

	<i>Beauv ex Roem & Schult</i>	Padlasi/Bhurbhus i			
11	<i>Eulaliopsis binata</i> (Retz)	Sabai	Garmineae	G	o
12	<i>Heteropogan contortus</i> (Linn) Beauv ex R & S	Churant	Garmineae	G	va
13	<i>Heteropogan contortus</i> (Linn) Beauv ex R & S	Sukra/Sukla	Garmineae	G	va
14	<i>Impertata cylindrica</i> (Linn) Beauv (Imperata arundinaceae Cyrill)	Chero	Garmineae	G	c
15	<i>Paspalum Serobiculatum</i> (Linn)	Kodo	Garmineae	G	o
16	<i>Saccharum</i> <i>Spontaneum</i> (Linn)	Kansi/kans	Garmineae	G	la
17	<i>Setaris glauca</i> (Linn) Beauv	Damra	Garmineae	G	o
18	<i>Sorghum halepense</i> (Linn) pers	Barru/baru	Garmineae	G	r
19	<i>Themeda quadrivalvis</i> (Linn) O. Kuntz	Rantha/Ratha	Garmineae	G	f
20	<i>Thysonolaena</i> <i>Maxima</i> (Roxb) O Ktz	Dhodi ghas	Garmineae	G	c
21	<i>Thysonolaena</i> <i>Maxima</i> (Roxb) O Ktz	Kakai	Garmineae	G	c
22	<i>Thysonolaena</i> <i>Maxima</i> (Roxb) O Ktz	Phuilbahari	Garmineae	G	c

'Bamboos'

S.N.	Plant Species	Local Name	Family	Habit	Status
1	<i>Bambusa arundinacea</i> (Willd)	Katang bans	Garmineae	B	o
2	<i>Bambusa tulda</i> (Roxb)	Desi bans	Garmineae	B	o
3	<i>Dendrocalamus strictus</i> (Nees)	Pahari bans/Bans	Garmineae	B	r

Parasites and Epiphytes

S.N.	Plant species	Local Name	Family	Habit	Status
1	<i>Cuscuta reflexa</i> (Roxb)	Amerbel	Scrophularacea	P	r

			e		
2	<i>Dendrophthoe falcata</i> (Linn) <i>Elting</i> (Syn <i>L. longifidours</i> Desr)	Banda	Loranthaceae	P	o
3	<i>Orobanchae cerune</i>	-	Orobanchaceae	P	o
4	<i>Orobanchae aegyptiaca</i>	-	Orobanchaceae	P	o
5	<i>Striga lutea</i>	-	Scrophularacea e	P	o
6	<i>Viscum orientale</i> (Willd)	Gurbel	Loranthaceae	P	o

Medicinal Plant:-

S.N.	Name of the crop	Scientific name	Character Variation
1	Baibirang	<i>Emblica ribes</i>	Fruit number & size
2	Charota seed	<i>Cassia tora</i>	Seed number & size, growth rate
3	Tamarind seed	<i>Tamarindus indica</i>	Fruit number & size, seed size and tree growth rate
4	Karanj seed	<i>Ponganima pinnata</i>	Seed number & size, growth rate
5	Sal seed	<i>Shorea robusta</i>	Seed number and size
6	Cashew nut	<i>Anacardium occidentale</i>	Fruit number & size and tree growth rate
7	Aam	<i>Mangifera indica</i>	Number of seed & size and tree growth rate
8	Palas	<i>Butea monosperma</i>	Number of flower, seed, bark and tree growth
9	Safed musli	<i>Chlorophytum arundinaceum</i>	Number of tuber and size and growth rate
10	Sarpagandha	<i>Rauwolfia serpentine</i>	Number of Roots and its number and growth rate
11	Ban tulsi	<i>Ocimum basilicum</i>	Number of seeds and leaves
12	Jamun	<i>Syzygium</i>	Number of fruits and tree growth rate
13	Sivna	<i>Gmelina arborea</i>	Number of Roots and its amount and growth rate
14	Kalihaldi	<i>Curcuma coesia</i>	Number of tribes and its size
15	Suran	<i>Amorphoallus</i>	Number of tiber and its size &

		<i>campanolitus</i>	growth rate
16	Satawar root	<i>Asparagus racemosus</i>	Number of roots and its amount and growth rate
17	Rasna jadi	<i>Pluchea laceolata</i>	Number of roots and its amount and growth rate
18	Chokhru	<i>Tribulus terrestris</i>	Number of seed its size and growth rate
19	Arjun	<i>Terminalia arjuna</i>	Bark thickness and its quality
20	Ratanjot	<i>Jatropha curcas</i>	Number of seed its size and growth rate
21	Bargad	<i>Ficus benghalensis</i>	Number of fruits, root amount and tree growth rate
22	Aak	<i>Calotropis gigantean</i>	Amount and quality of latex, number of flower and growth rate
23	Amaltas	<i>Cassia fistula</i>	Number of seeds and tree growth rate
24	Grit kumari	<i>Aloe vera</i>	Number of leaves root amount and plant growth rate
25	Basaka leaves	<i>Adhatoda vasica</i>	Number of leaves root amount and plant growth rate
26	Neem	<i>Azadirachta indica</i>	Number of leaves, fruits, Azadiractin content and quality
27	Babul	<i>Acacia nilotica</i>	Number of seed, size and tree height
28	Bel	<i>Aegle marmeloa</i>	Number of fruits and its size
29	Aonla	<i>Emblica officinalis</i>	Number of roots its size and growth rate
30	Harra	<i>Terminalia chebula</i>	Number of roots its size and growth rate
31	Bija	<i>Pterocarpus Marsupinum</i>	Number of roots its size and growth rate
32	Ashock	<i>Saraca indica</i>	Bark amount and quality, number of seed and size
33	Ashwagandha	<i>Withania Sominifera</i>	Number of root its amount
34	Baheda	<i>Terminalia Belerica</i>	Number of fruits and size
35	Mahua	<i>Madhuca indica</i>	Number of flower, seed and tree growth rate
36	Indrajan seed	<i>Wrightia tinctoria</i>	

Edible Mushrooms:-

Mushrooms belong to a separate group of extremely versatile organisms called fungi, they lack the usual green matter present in plants and grow on dead and decaying organic materials from which they absorb their nutrition and from reproductive structures called mushrooms. There are 2000 species of edible mushrooms known so far of these 250 edible mushrooms are reported from India. But only 5-6 species have been exploited for commercial cultivation. A large wealth of mushroom germplasm/flora exists in dense forest areas of Chhattisgarh some of the found in the study area are.

S.N.	Names	Locality
1	<i>Clitocybe flaccida</i>	Ambikapur
2	<i>Flamulina velutipes</i>	Ambikapur
3	<i>Lentinus</i>	All parts of Chhattisgarh
4	<i>Pholiota corbonaria</i>	Ambikapur
5	<i>Russula lepida</i>	Ambikapur, Bilaspur
6	<i>Tuber spp.</i>	Ambikapur, Bilaspur
7	<i>Volvariella volvace</i>	All parts of Chhattisgarh
8	<i>V. diplasia</i>	All parts of Chhattisgarh
9	<i>V. esculenta</i>	All parts of Chhattisgarh

Abbreviations used

- T = Tree
- ST = Small Trees
- S = Shrub
- US = Under Shrub
- H = Herb
- C = Climbers
- G = Grasses
- B = Bamboo's
- P = Parasites
- va = very abundant
- a = abundant
- f = frequent
- c = common

o = occasional
 r = rare
 la = locally abundant
 lc = locally common

Note:- Terms in bracket with scientific names are now obsolete

Range and Status of Animal species :-

Terrestrial Animals

S.N.	Scientific name	Local name	English name	Status
1	<i>Axix axix</i>	Cheetal	Spotted deer	o
2	<i>Boselaphus tragocamelus</i>	Nilgai	Blue bull	vr
3	<i>Canis aureus</i>	Siyal	Jackal	c
4	<i>Canis lupus</i>	Bheria	Wolf	o
5	<i>Cuon alpinus</i>	Jangli Kutta	Wild dog	o
6	<i>Fundambulus Palmarum</i>	Gelahri	Squirrel	c
7	<i>Gazella gazella</i>	Chinkara	Indian Gazelle	o
8	<i>Herpestes edwardsi</i>	Neola	Mongoose	o
9	<i>Hyaena hyaena</i>	Lakkar bagha	Hyaena	o
10	<i>Hystrix indica</i>	Sahi	Porcupine	o
11	<i>Lepus nigricollis</i>	Kharha	Hare	c
12	<i>Melursus ursinus</i>	Reech/ Bhalu	Sloth bear	va
13	<i>Millardia meltada</i>	Chuha	Rat	va
14	<i>Muntiacus muntjak</i>	Bherki	Barking deer	o
15	<i>Panthera pardus</i>	Tendua	Panther	s
16	<i>Panthera tigris</i>	Bagh (Sher)	Tiger	r

17	<i>Presbytis entellus</i>	Langoor	Langur (Monkey)	c
18	<i>Rusa unicolor</i>	Sambhar	Sambhar	r
19	<i>Sus scrofa</i>	Jangli Suar p-41	Indian wild boar	c
20	<i>Tetracerus quadricornis</i>	Chausinga	Four Horned Antelope	o
21	<i>Vulpes bengalensis</i>	Lomri	Fox	o

Birds:-

S.N.	Scientific name	Local name	English name	Status
1	<i>Columba lurica</i>	Kabutar	Blu rock pigeon	c
2	<i>Coracias Benghalensis</i>	Nilkanth	Blu Jay	o
3	<i>Corus marcorhynchos</i>	Jangli kaowa	Jungle crow	c
4	<i>Dendrocopos</i>	Katphora	Mahratta, Wood Pecker	c
5	<i>Francolinus</i>	Tear	Greay Partridge	c
6	<i>Gallinula chloropus</i>	Jalmurgi	Indian Moorhen	f
7	<i>Gallus gallus</i>	Jangli murgi	Red jungle fowl	c
8	<i>Grus antigone</i>	Sarus	Sarus Crane	r
9	<i>Gyps bengalensis</i>	Gidh	White backed Vulture	f
10	<i>Pavo cristatus</i>	Mor	Pea fowl	c
11	<i>Perdicula asiatica</i>	Lawa	Bush Quail	c
12	<i>Trearon</i>	Harial	Green pigeon	o

Reptiles

S.N.	Scientific name	Local name	English name	Status
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1	Bungarus coeruleus	Chitkwaria	Common krait	c
2	Crocodilus palustris	Magar	Crocodile	vr
3	Naja naja	Nag	Cobra	c
4	Python molurus	Aigar	Indian python	r
5	Zemensis mucosus	Dhaman	Common rat snak	c

1. *The Common Cobra:* Popularly known as the " Nag Samp", this snake has indeed a very beautiful appearance but it is a very poisonous and dangerous reptile. The most prominent characteristic of a Cobra is its well-marked hood. The hood of the Cobra is finely marked, widely expanded and slopes down gently from just behind the head towards the back. Its colour is usually black or wheat coloured with the hoods sometimes bearing a spectacle like mark. In others there is a oval spot surrounded by an eclipse. Though the Nag is found in almost every part of Chhattisgarh, but it varies in its colour according to the vegetation, climate & soil of that particular area. In some region it may be black, brown, wheatish, yellow and in rare cases even white, local people have named them differently according to their colours, growing upto a length 6 feet this snake can be normally seen in the open in the evening or early morning in the old thatched roof houses, old buildings and cool dark places. It is to be noted here that the presence of this snake in and near house an indication that it has come for its food- rat, frogs or birds. If these are kept away then the snake may not come to houses. A Cobra strikes in self defence or when disturbed during its search for food or during mating season. The poison of Cobra is very potent and will kill a man usually within 2-6 hours of the bite. An average Cobra can secrete enough poison to kill 15 persons. This snake is worshipped during the 'Nag Panchami' day. It is taken from house to house by the snake charmers and locals offer money and milk.

2. *Krait:* The Krait is the most common of the deadliest snakes in Chhattisgarh. The maximum number of snake bite deaths in the state is caused by this snake. It is usually

glistening black or steel blue in colour and attains a length of 3-5 feet when fully grown. Its bluish-black body has white cross bands and the head is short and blunt. The venom of Krait is 10 times as powerful as that of a Cobra! Of all kinds of Asian land snakes, its venom is the most toxic. The Krait prefers to live in or near the houses, old bricks, or piles of rubble which provide many nooks and crannies to shelter in. The most distinct feature of Krait is its nocturnal habits. It avoids moving about in day time but becomes active at dark and goes about at night in search of food. Due to its glistening bluish black body, villagers can easily locate this snake in the dark. Especially in the monsoon season, when villagers sleep on the floor and unknowingly disturb the movement in this snake become victims of Krait bite.

Known as the "Ahiraj" by the Chhattisgarhi people, undoubtedly this snake is the most spectacular, beautiful as well as the deadliest snake of Chhattisgarh. Just the mention of its name to the villagers is enough to send shivers down their spine. It is the most dangerous as well as the largest snake of the Krait clan. It is a big stout snake, which can grow to the length of 8 feet. It has all the distinctive characters of a Krait, but in the addition it has across the back large broad bands, their colours alternating bright yellow and black which makes its appearance very beautiful and worth seeing.

Fishes

S.N.	Scientific name	Local name	English name	Status
1	Bagarius bagarius	Gaunch	-	f
2	Catla catla	Katla	Catla	f
3	Channa gachua	Chainga	-	a
4	Heteropheuste fossilis	Singhi	-	c
5	Labeo fimbriatus	Rohu	Rohu	c

(Source :- Working Plans of Forest Division.)

Abbreviations used :-

r - rare

- o – occasional
- va – very abundant
- c – common
- vr – very rare
- s – sporadic
- f – frequent
- a – abundant

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Though all the workgroup members worked to their level best, but following are the Hon'ble people who have contributed in all the aspects of formulation of SAP whenever needed. Biodiversity Conservation Workgroup is indebt to their valuable contributions.

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