

## FINAL REPORT OF THE WORK DONE ON THE MINOR RESEARCH PROJECT

### Enclosure -- C Report of the work done:

The second and final phase of the research project was completed. The details are as under-

Survey work was completed by visiting Some more study sites which were left during the first year. A detailed survey of the Bilaspur and nearby areas has been done round the year at frequent intervals. The sites were Dulhara talab and nearby area, Khuntaghat, Girjabandh, Lakhnidevi Pahadi and Khaira-Chapora

Standard methodology was adopted for floristic and phytosociological survey.

### FINDINGS-

The floristic analysis revealed that there were 213 genera and 270 species distributed in 70 families of flowering plants. Of these 59 Families were of Dicotyledons and 11 families were of monocotyledons. Fabaceae was the largest family among Dicots and Poaceae was among monocots.

The list of plants is as under-

### FLORISTIC ANALYSIS OF BILASPUR AND ITS SURROUNDINGS

S.No	Name of Family	Name Of Genus	Name of Species	Life Form	Local Name
1	Annonaceae	Annona	squamosa	T	Sitaphal
2	Manispermaceae	Tinospora	cordifolia	C	Giloy
		Cocculus	hirsutus	C	Jamatibel, Jal jamni
3	Nelumbonaceae	Nelumbo	nucifera	Aq. H	Kamal
4	Papaveraceae	Argemone	maxicana	H	Pili kateli
5	Brassicaceae	Brassica	rapa subsp.compestris var. compestris	H	Kala Sarson
		Roripa	rapa subsp.compestris var.glauca indica	H	Pila Sarson
6	Cleomaceae	Cleome	viscosa chelidonii	H	Hurhur
7	Violaceae	Hybanthus	enneaspermus	H	
8	Portulacaceae	Portulaca	oleracea	H	Ghol Bhaji
9	Dipterocarpaceae	Shorea	robusta	T	Sal, Sarai
10	Malvaceae	Abelmoschus	manihot moschatus	Un.S Un.S	Ramkeria Bala
		Abutilon	indicum	S	Hollyhock
		Althea	rosea	S	Gudhal, Jason
		Hibiscus	rosa sinensis sabdariffa subsp.	S S	Patua

		Malvastrum Malchara Sida  Urena	sabdariffa sabdariffa subspp.cannabinus coromandellanum acuta cordata syn veronaecifolia cordifolia rhombifolia lobata	Pe.H H H H  H H H	Khatta bhaji      Bariala
11	Bombacaceae	Bombax	ceiba	T	Semal
12	Sterculariaceae	Helicteres Melochia Pentapates Sterculia	isora corchorifolia  urens	T H Er.H T	Marodphalli Sag  Kulu
13	Tiliaceae	Corchorus  Grewia	fascicularis olitorius tilifolia	Pe.S Er.S T	Jute  Dhaman
14	Linaceae	Linum	usitatissimum	Er.H	Alsi
15	Oxalidaceae	Biophytum Oxalis	sensitivum corniculata	Er.H H	Khatti buti
16	Balsaminaceae	Impatiens	balsamiana	H	Gul Mehandi
17	Rutaceae	Aegle Citrus Limonia syn.Feronia	marmelos aurantiifolia acidissima	T T(Cul.) T	Bel Niboo Kaitha
18	Meliaceae	Azadirachta Melia	indica azadirach	T T	Neem Bakain
19	Rhamnaceae	Ventilago Ziziphus	denticulata mauritiana	Liana Large S	Raktapapdi Ber
20	Vitaceae	Cissus	quadriangularis	Crep.H	Harjod
21	Sapindaceae	Schleichera	oleosa	T	Kusum
22	Anacardiaceae	Buchanania Mangifera Semecarpus	lanzan indica anacardium	T T	Char Aama Bhilwa
23	Moringaceae	Moringa	oleifera	T	Munga
24	Fabaceae	Abrus Aeschynomene Alysicarpus Arachis Butea Cajanus Clitoria Cicer Crotalaria Desmodium	precatious aspara monilifer hypogea monosperma cajan ternacea aeratinum juncea triflorum	Cl.Twin ner H H H(Cult.) T Er.H(Cu lt.) Twinner H(Cult.)	Ghumchi Sole  Mungphalli Parsa Rahar Aparajita Chana Sunhemp

		Dolichos Indigofera Lathyrus Melilotus Pisum  Psoralea Pterocarpus Sesbania Tephrosia Trigonella Vicia Vigna Phaseolus Vigna  Zornia	gangeticum lablab biflorus linifolia aphaca indica sativum  corolifolia marsupium sesban purpurea  faba syn. triflorus biflorus  Diphylla	H H  Climber Climber H H H H(Cult.)  H T H H H H(Cult.) H(Cult.) H(Cult.) H(Cult.)  H(Cult.)  H(Cult.)  H	Semi Kurthi Nil Jangli matar JangliMenthi Matar  Babchi Bija  Methi Broad bean Mungasar  Mung Urad Cow pea  Lobia  Yard long bean
25	Caesalpinaceae	Bauhinia  Caesalpinia Cassia  Tamaridus	racemosa variegata bonduc alata fistula occidentalis siamia tora indica	T T S S T H T H T	Koilar Kachnar Gataran  Amaltas  Charota Imli
26	Mimosaceae	Acacia  Albizia Mimosa	leucophloea nilotica pinnata lebbeck pudica	T T T T H	Subabul Babul  Kala Shirish Chhuimui
27	Crassulaceae	Bryophyllum	calycinum	H(Succu .)	Pattharchatta
28	Combretaceae	Anageissus Combratum	latifolia ovulifolium	T Climber	Dhawra

		Quiqualis	indica	(cult.)	Rangoon bel
		Terminalia	arjuna bellirica chebula tomentosa	T T T T	Arjun Baheda Harra Saja
29	Myrtaceae	Callistemon Eucalyptus Psidium Syzygium	lanceolatus globuratus guajava cuminii	T(cult.) T(cult.) T(cult.) T	Bottle brush Nilgiri Bihi Jaman
30	Lythraceae	Ammannia Bergia Lawsonia Lagrestromia	baccifera ammenoides innermis parviflora	H H S T	Menhandi
31	Trapaceae	Trapa	bispinosa	Hydroph yte	Singhada
32	Cucurbitaceae	Coccinia Momordica Trichosanthes	grandis charatia colosynthus	Climber Climber Climber	Kundru Karela Jangli parval
33	Cactaceae	Opuntia	dilenii	Small Shrub	Nagphani
34	Apiaceae	Centella	asiatica	Creeper	Bhamhi
35	Alangiaceae	Alangium	lamarkiana      syn salvifolium	S	
36	Rubiaceae	Mitragyna Gardenia	parvifloa resiniferra syn.lucida	T H	Dikamli
37	Asteraceae	Ageratum Carthemus Vernonia Xanthium Tridex Eclypta Spilanthes Sphaeranthus  Grengia Dopatorium Gnaphalium Blumea Launea	conyzoides tinctorius cinerea strumarium procumbens alba acmella indicus paniculata madraspatele spp spp spp nudicaulis	H S H H H H H H H H H H H H H	Kusum Sahdevi Gokuru  Bhingraj Akarkara Gorakhmundi Manz
38	Plumbaginaceae	Plumbago	zeylanica	H	Chitrak
39	Sapotaceae	Madhuca	latifolia(longifolia)	T	Mahua
40	Oleaceae	Jasminum	arborescens	H	Belachameli
41	Apocynaceae	Catheranthus Holorrhena Nerium Plumeria	roseus antidysentrica indicum rubra	H(Cult) S S(Cult) T	Sadabahr Kutaj Lal Kaner Champa

		Thevatia Tavernemontana Alstonia Woodfordia	nerifolia bivarigata scholaris fruticosa	S(Cult) S(Cult) S(Cult) T	Pili Kaner Chandni Saptaparni
42	Asclepiadaceae	Calotropis  Gymnema Hemidesmus Pergularia	procera gigentea sylvestre indicus daemia	S S Climber Twiner Twiner	Aak  Gurmar Anantmul
43	Boraginaceae	Erhesia Heliotropium Trichodesma	levis indicum indicum	T H H	Hanthisund
44	Convolvulaceae	Evolvulus Convolvulus Ipomea Ipomea Ipomea	alsinoides  fistulosa nil aquatica	H H S Twiner Creeper	Shankhpuspi  Besharam .....Bhaji
45	Solanaceae	Datura Solanum Solanum	metal nigrum xanthocarpum	S S S	Dhatura Makoy Bhatkataiya
46	Scrophulariaceae	Bacopa Celsia syn. Verbascum Lindernia Limnophilla Macardonia Scoparia Vendalia	monneri coromendelina  antipoda heterphylla procumbens dulcis crustrata	H H  H H H H H	Bhamhi
47	Acanthaceae	Hygrophila Andrographis Adhatoda Barleria Dedlacanthus	spinosa paniculata vasica prionitis nosutus	H H H H S	Tal makana Bhuineem Adusa Kesaria Dashmul
48	Verbenaceae	Lantana Lippia Tectona Vitex	camara nodiflora grandis negundo	S H T T	Kurri  Sagon Nirgundi
49	Lamiaceae	Ocimum   Hyptis Leucas	canum basilicum tenui sanctum suavalens aspara cephalodes	H H H H H H H	Kali Tulsi Kapur tulsi  Rama tulsi  Dronpushpi
50	Nyctaginaceae	Boerhavia Nyctanthes	diffusa arbor tris tis	H S	Punarnava Harshingar

		Mirabilis	jalapa	H	Gulal ful
51	Amaranthaceae	Amaranthus	viridis	H	Cholai
		Achyranthes	spinosa	H	Kantelicholai
		Alternanthera	aspara	H	Latjira,apmarg
			sessilis	H	
			philoxeroides	H	
		Gomphena			Murga ful
		Celosia			
52	Chenopodiaceae	Chichorium	antibus	H	
		Chenopodium	album	H	Bathua
53	Polygonaceae	Polygonum	plebejum	H	
			hydropiper	H	
54	Euphorbiaceae	Acalypha	Indica	H	
				H	
		Euphorbia	hirta	H	
			dracunculoides	H	
			geniculata	H	
			hypercifolia	H	
			thymifolia	H	
			pulcherrima	S	
			nivulia	S	
			milli	S(Cult)	
			tirucali	S	
		Phyllanthus	niruri	H	
			maderaspatensis	H	
			fraternus	H	
			emblica	T	Aonla
			acida	T	Shree aonla
		Pedalanthus	thymifolia	H	
		Jatropha	cuercus	H	
			gossypifolia	H	
			podagrica	H	
				H	
		Chrozophora	prostrata	H	Arandi
		Ricinus	communis	S	
55	Moraceae	Ficus	benghalensis	T	Bargad
			religiosa	T	Pipal
			glomerata(recemos a)	T	dumar
			krishnai	T	
56	Capparadaceae	Capparis	zeylanica	Cl	
57	Loganiaceae	Strichnos	nux vomica	T	Kuchla
58	Ebenaceae	Diospyros	melanoxyton	T	Tendu
59	Onagraceae	Ludwigia	ascandense	Hydroph	
60	Najadaceae	Najas	marina	Hydroph	

				.	
61	Lentibulariaceae	Utricularia	exoelata auriculata	Hydroph Hydroph	
62	Menyanthaceae	Menyanthus	indica cristata	Hydroph Hydroph	
63	Potamogetonaceae	Potamogeton	crispus notatus	Hydroph	
64	Orchidaceae	Vanda	tesellata	Epi	Banda
65	Zingiberaceae	Costus	speciosus	H	Kevkand
66	Dioscoreaceae	Dioscorea	bulbifera	Cl	Dangkanda
67	Liliaceae	Asparagus Gloriosa Allium  Aloe	recemosus superba cepa sativum barbadensis	Cl H H H H(succu lent)	Satawari Kalihari Piyaz Lahsun Ghit kumara
68	Araceae	Colocasia Amorphophallus Acorus	esculenta campaulatus calamus	H H H	Kochai Zimikanda Bach
69	Cyperaceae	Cyperus  Fimbristylis Scirpus Schoenoplectus	iria difformis triceps  rotundus miliacea gressus spp.	Ph Ph Ph Ph Ph H H H	Nagarmotha
70	Poaceae	Andropogon Cynodon Echinochloa  Heteropogon  Eragrostis Chloris Dactyloctenium Digitaria Dicanthium  Eleusine Ischemum Oryza	pertussus dactylon colonum crus galli glabrescense contortus  procera barbata aegypticum sanguinalis annulatum  indica rugosum rufipogon	H H H H H H  H H H H  H H H	Doob Savan          Pasahar dhan Dhan

		Panicum	sativa	H	
		Pannisetum	rapens	H	Bajra
		Paspalum	typhoides	H	
			distichum	H	Kodo, Kudela
			scrobiculatum	H	
		Setaria	glauca	H	Kans
		Saccharum	spontaneum	H	Jwar
		Sorghum	vulgare	H	
		Seciolepis	interupta	Hydroph	Genhun
		Triticum	aestivum	.	Makka
		Zea	mays	H	
				H	

**Phytosociological Analysis** revealed that maximum density have been shown by *Sida cordifolia* (1647.8/ha) and *Ageratum conyzoides* (1535/ ha). It was followed by species like *Cassia tora* (1467), *Desmodium triflorum* (1342), *Eragrostis procera* (1219), and *Andropogon pertusus* (1188). It was observed that trees were less dense as compared to herbs .

Highest frequency i.e. 100% was exhibited by *Desmodium triflorum*; *Eragrostis procera*; and *Sida cordifolia*. It was followed by *Ageratum conyzoides*, *Cassia tora*, and *Diospyros melanoxylon* exhibiting 90% frequency.

Minimum frequency i.e. 10% was shown by *Dioscorea bulbiferra*; *Gardenia lucida*; *Helicteres isora*; *Mitragyna parviflora* and *Zizyphus marautiana*.

Average basal area occupied by the herbs was less as compared to that of trees. Maximum D.B.H. (on average basis) was of *Lannea coromondelica* (80.0 cm). *Bombax ceiba* (78.67) . Minimum basal area was shown by species like *Desmodium triflorum* (0.15 cm.), *Eragrostis procera* (0.19 cm), and *Phyllanthus niruri* (0.21 cm).



*Ageratum conyzoides* was most abundantly found species, followed by *Sida cordifolia* (1647.8), *Casia tora* (1630), *Andropogon pertusus* (1484.5) and *Desmodium triflorum* (1342.8).

Plant species like *Dioscorea bulbifera*, *Gardenia lucida*, *Mitrogyna parviflora*, and *Cassia fistula* were the least abundant. Maximum species showed **contagious distribution pattern**.

Herbaceous species occupied lesser ground area as exhibited by their basal area though they were more dense population-wise.

Almost all the plants excepting a few exhibited medicinal properties according to the interactions with the local people.

**Assessment of threat** was determined by abstracting different parameters of community analysis and following plant species were found to be **threatened**.

*1 Abemoschus moschatus*

*2 Abrus precatorius*

*3 Buchanania lanzan*

*4. Dedlacanthus nosutus*

*5. Gardenia lucida*

*6 .Gloriosa superba*

*7. Gymnema sylvestre*

*8. Helecteres isora*

**9. *Hemidesmus indicus***

**10. . *Psoralia corolifolia***

**11 .*Ventilago denticulata***

### **Reasons for Population Decline-**

Reasons for the declining population of these medicinally important plant species were –

- The unplanned cutting for the construction purpose.
- Habitat destruction .
- Unsustainable harvest for the medicinally important plant parts

### **Conclusion-**

It is concluded that the Bilaspur surroundings are full of green wealth. It is very rich in medicinal plants whose properties are well known to the local people. But these are not well documented . Lack of awareness and greed for small benefits lead to the unsustainable harvest of these plants. There is a great need for the ex situ conservation of these medicinally important plants.

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