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**TITLE : USE OF MINOR FOREST PRODUCE FOR MEDICINAL
PURPOSE BY COMMONS OF BHANDARA DISTRICT OF
CENTRAL INDIA**

Key Words - Medicinal plants, quality of life, reserve forest

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1. INTRODUCTION :

India is having rich forest resources. It's geographical coverage is about 32 crores hectors which is less than the required area for the forest cover of the country. There is an uneven distribution of forest cover in various parts of the country. Central India is one of the highest forest cover area (44%) in India. The present study is important because variety of minor forest produce for medicinal purpose are available in this area. Various policies have been formulated for the preservation and conservation of resources and also for the protection of dense forest cover in these areas. Commons are heavily dependent upon reserve forest for MFP for medicinal and other purpose. More strict policies have been framed for the protection of protected forest. Hence it is now not easy to collect forest produce from protected area. Commons are more dependent upon reserve forest for collection and use of produce of the forest in such cases. Messrs, Hooker and Thompson writing as far back as 1855 said : "we have had a considerable experience both in medical and economic botany, and we announce boldly our conviction that so far as India is concerned these departments are at a standstill for want of an accurate scientific guide to the flora of that country". I feel strongly that

still we have to cover a long route because the species are deteriorating and its non-availability will not uplift the quality of life of human being in long run.

2. GEOGRAPHICAL AREA :

Bhandara District is one of the developing district of Central India. The process of urbanisation has been started from last 15 years. About 38% of the districts are urbanised. Due to this development the sacred groups has been negatively affected. Total population of the district is 1,13,835 in 2001. The number of women is less than men i.e. 982 against per thousand men in 2001. The total geographical area of the district is 3717 cubic km. Means 28.5% forest cover is available in the district. By adding shurbs and scattered forest areas to this cover, the reserve and protected area make 40% forest cover in the district.

Out of 1043.145 cubic k.m. forest cover the Reserve forest cover is 808.227 cubic km and protected area is 234.798 cubic km. It shows that out of total forest cover 77.47% is the reserve forest area. Hence most of the rural population of Bhandara District is dependent on MEP for various purpose.

The educational structure of the district is comparatively satisfactory compared to the other districts of Central India. About 80% of the people of the district are literate and 68.11% women are educated. The percentage of educated people in rural area is 76.78% in 2001. After getting certificate or degree most of the young generation is trying to shift or migrate permently to urban areas. It is because less forest based activities, training, use, related small and cottage industries are available to them. Maximum 76.78 percent rural educated people can become a big working force if training in proper way for conservation and preservation of forest produce is provided to them. The training for use of medicinal plants will have better value. Commons will be benefitted in many ways like - increase in income and employment generation, cheap treatment with no side effects, need not to migrate etc.

3. RESEARCH PROBLEM :

The rick forest produce for medicinal purpose of the reserve forest of Bhandara District is deteriorating because of indifferent attitude and lack of interest of young as well as old generation towards the use, conservation and preservation of the plants. Normally the easy availability of modern facilities i.e. readymade

medicines available at medical shops in nearby town is preventing them to develop their attitude for this useful but labourious activity. Local have to devote lot of time and energy for collection of forest produce. Preparation of traditional medicine, processing it etc. are the another time consuming activities.

The medicinal plants like *Baliospermum montanum* (danti), *Semecarpus anacardium* (Bibba), *Cortus speciosus* (pev), *Annona squamosa* (Sitaphal), *Michelia champaca* (Champa), *Higella linn* (Bashpika), *Capparis spinosa* (Ber), *Adansonia digitata* (Gorakamli), *Tinospora malabarica* (Gulvel), *Abrus precatorius* (Gunja), *Coparris decidua* (Ker), *Coparris zeylanica* (Govindi), *Hibiscus rosa* (Jaswand), *Gossypium arborum* (Dev kapas - Cotton), *Bixa orellana* (Latkan) etc. are the important forest produce of this region. However very less attention has been paid to there species. They are very important for day to day use and first aid for common diseases.

4. OBJECTIVES OF THE STUDY :

This study was based on certain objectives like information about medicinal plants available at reserve forest was collected. The use of these plants by the locals was also observed. In the study 12 village were selected to know their dependence of reserve forest. It also focuses on effect of economic and social life of locals due to the use and non-use of there produce. The reasons of indifferent attitudes of the people were also studied. The cost for the preparation of medicines from the plants and occured benefits were analysed. The time spent for the preparation of the medicines, collection of the forest produce, conservation policies adopted by locals were observed. The forest officers and related departments were also included in the disscussions during the study.

5. STUDY LINE :

It is a known fact that disease, decay and death have always co-existed with life, the study of diseases and their treatment must also have been contemporaneous with the dawn of the human intellect. The primitive man must have used as thesapeutical agents and remedial measures those things which he was able to procure most easily. There is no authetic record of medicines used by the primitive man. Increase in urbanisation process in the district is not allowing people to get the benefits of such plants easily. Hence the coming generation are

shifting towards easily available readymade medicines. They are not bothered about the side effects of artificial medicines which gives instant relief to them. It is cost wise not affordable to them. This situation tells that locals are away from nature's gift which is easily available at their door. Hence the attempt has been made to study the problems of less dependency on the medicinal plants is not providing cheaper and better life to the locals. Simple indigenous technology helps the people in conservation and making use of medicinal plants. But locals are moving away from this benefit. Their understanding about the use of such produce, their adoption, paying attention and making use will preserve the resources to a wider extent. If this awareness increases it will be a supportive livelihood package for the commons.

6. **SAMPLE DESIGN :**

The reserve forest of Bhandara District has been chosen for this study line. There are eight ranges in the district. Each range has three forest circles consisting of 6 to 7 villages. For the present study two forest ranges (Highest and lowest reserve forest cover) have been selected. Three forest circles have been present in each range. Hence from each forest circle again two two villages are selected having highest and lowest reserve forest cover. It means the study consists of two ranges, six forest circles and 12 villages. It is shown in the following chart -

	Range	Reserve forest (RF) cubic k.m.	Forest Circles	Name of the villages
1.	Jamkandri (Highest Reserve Forest Area) (HRF)	165.860	Kandri (55.752) Mangarli (31.49) Zendezari (58.459)	1. Pittesur (16.642) 2. Hiwara (6.762) 1. Mangarli (10.194) 2. Ranbha (7.163) 1. Vitpur (13.351) 2. Aasesur (8.158)
2.	Bhandara (Lowest Reserve Forest Area) (LRF)	64.174	Koka (21.856) Palora (30.424) Bhandara (6.934)	1. Chandrapur (8.862) 2. Koka (0.629) 1. Dongardeo (8.298) 2. Kisanpur (4.771) 1. Dahamararin (6.934) 2. Saleghati (4.921)

Note : 1=HRF, 2=LRF The figures in the bracket are showing cubic kms.

About 11-13 households were selected from each villages and total household covered for the study were 145. Some issues like use of forest resources for medicinal purpose, knowledge about the plants were also considered for the study. Use of 36 species were identified.

6. THE RESULTS :

The respondents (145 H.H.) are using various plants for medicinal purpose. 36 plants have been selected on the basis of their availability in the area and its usefulness for the human being for first aid treatment and total cure for common diseases like fever, asthma, snakebite, malaria, diarrhoea etc. The detailed list (botanical names, local names, use and numbr of households dependent on the plants) of the plants has been enclosed (ANNEXURE -1) The pattern of the use of plants by the respondents is given below-

plants (No)	purpose/use for curing diseases	method of use and knowledge about the plants	Distance covered to collectr plants and its availability	percentage of respondents using plants
Trees (22)	Mainly used for fever, laxative enrich blood, Tonic, cough vatas, loss of appetite, diarrhoea, snake-bite.	Traditional (Indigenour) methods. Based on experience	66% trees available at 1-3 Km.s 34% very close to their home	41
Herbs/ Shrubs (12)	Fever, Cough, vatas, snake-bite prevents promotion of pus, improves appetite, external injuries	Indigenous methods Locals consults the older/senior persons	81% herbs/shrubs near to the residence 19% difficult to identify	58
Climbers (02)	Tonic/Snakebite	Traditional methods	100%-5-10 k.m.	01

The following conclusions can be drawn out of it-

1. The dependance of locals is reducing sharply even for easily available plants.
2. Locals are not interested in acquiring knowledge about the use of plants because of the easy availability of medicine for cough, diarrhoea, fever, snake-bite, external injuries etc.
3. The young generation seems to be not interested in the use of plants because its conservation and preservation is a labourious work and it takes time to get results. According to them no processing unit or small industries are developed in this area. Though only 5-6 families in these two ranges are having tiny manufacturing unit only for local demands. The entry in protected areas is totally stopped. However some encroachment can be observed. Such encroachments are not only for medicinal plants but for other commercial purpose also.
4. Their social/economic life has been definitely affected by both use and non-use of the forest produce.

The local using these produce for medicinal purpose is saving about Rs. 600/- per year. Because they need not to visit medical doctors for fever, stomach ache, cough, etc. For snake-bite, blood and urinary related diseases they can provide first-aid treatment and then visit doctors if necessary. For tonic and seasonal diseases they are dependent upon fruits, seeds etc. available in the reserve forest. For ritual purpose they use flowers, stems etc. They believe that use of such plants at least once in a year help them to save from viral diseases.

It shows their dependance on forest produce saves about Rs. 600-700. Because they are getting it free of cost. It has also been observed that more nature friendly approach if developed properly may help them to save Rs. 1000-1200 per year. Some rare herbs, shrubs, climbers are still available. They are rich in terms of life saving diseases. It is necessary to preserve and conserve them.

The locals not using the medicinal plants have to depend upon other sources which are costly. For such locals retaining of quality of life against some diseases is low. With this poor quality of life the expenditure for diseases like fever, cough etc increases. Those having supplementary income source along with agricultural

income are able to purchase costly drugs from medical shops. But most of the villages cannot do this.

As mentioned in the table the locals are using some traditional methods like-

A Direct use of the plants -

1. Use of fruit juice (e.g. *Aegle marmelos* - Bel) for prevention from heat, urinary troubles, chronic diarrhoea etc.
2. Use of leaves and stems - *Tinospora Mataborica* (Gulvel) for heat reduction in summer.
3. Use of seeds as purgative - *Absus precatorius* (Gunja)
4. Use of seeds, fruits for healing cracks - *Micchelia champaca* (champa)

Indirect use of plants by making paste, boiling mixing with milk etc.

1. For killing lice/destroying worms-seeds pasted and applied. e.g. *Annona squamosa*- (Sitaphal)
2. Used for removing tridosha, cause abortion- After boiling leaves/flowers e.g. *Sida acuta* (Chikana)
3. Used for snake bite - Extract juice and mix with wine than applied - (e.g. *Raphanus sativus* (Muli)
4. Flowers, leaves stems are used for routing out cough, fever, hair loss etc. Processed with water/oil than applied.

The cost of preparation and preservation of such products for first-aid treatment is very low. For processing it requires insignificant amount. Hence it is absolutely free of cost. But for the collection of climbers, herbs, shrubs and trees or cycles etc. It costs Rs. 30-50/- per month. Hence transport and other related expenditure are not much. There are low cost preparations with no side effects. The conservation and preservation of the species is little difficult and time consuming because -

1. Lack of water facilities.
2. Lack of awareness about the produce.
3. Non-support from the agencies like NGO's, private organisations and forest department and
4. Lack of futuristic approach.

The indifferent attitude of forest department is also a serious factor for the healthy growth of the plants. They could have made various things compulsory to locals for their betterment. It could become a part of social forestry, Like -
1. Apart from 36 plants, plantation of neem trees, tulsi, jaswand etc. can be encouraged for plantation. At the backyard/courtyard of the house the plantation of these trees could have been made compulsory.

Protection, preservation and conservation of endangoured species should become an important part of the duties of forest department people.

MATHEMATICAL EXPRESSION :

VARIABLES -

I **Dependent variables** : Dependence of locals on medicinal plants (DLMP)

II. **Independent variables** : Shurbs (s), climbers (c), Trees (T), Hurbs (H),

Diseases - 1, Disease - 2, Disease - 3, Disease - 4

$$DLMP = f(S,C,J,H)$$

$$DLMP = f(D1, D2, D3)$$

There is a positive correlation between the DLMP and availability of S, C, T, H within one km of their village R^2 is 0.762812. The availability of some climbers and trees is not easy. It is more than 5 kms. from their residing place. The R^2 for such relationship is 0.1062. Hence the locals are less dependent upon such plants.

Staying near to the nature is an important concept for Gond community. They understand that their quality of life may not be improving but definately retaining against diseases like cough, Asthama, bronchitis etc. Cure for snake bite, poisonouus insect through nature based medicines is successful activity. They are also successful in controlling wound healing, pus formation etc. The overall sturdiness of this community is much more than the city people because of use of medicinal plants in Bhandara district. Hence their knowledge about some plants and the uses also positively correlated with the availability and plantation of the plants. The number of local planting at their home for their own benefits are very less. This gives an idea that they are used to provide first-aid treatment for common diseases. Though the young generation of this area is not paying attention towards these methods. This indifferent attitude is going negative for acquiring knowledge about useful plants. In the long run it will not be transferred to the coming generations. It

is also seen that this indigenous knowledge is close to Aurvedic treatment pattern which is gaining importance at world level.

7. INDIAN FLORA -

The Indian flora was well recognised by the Britishers. Lot of studies have been done on Himalayan flora, and some on Central India. Its importance is well examined and explained by Aurvedic theropists. It is greatly to the credit of the people of India that they were acquainted with a far larger number of medicinal plants than the natives of any other country on the face of the earth. The vegetable Materia Medica of the Greeks, Romans, Egyptians, Jews, Babylions, Persians, Chinese and Arabs does not display such an extensive knowledge of medicinal plants and drugs or does any of the authoritative medicinal works of the Hindus. The knowledge of herbs possessed by the aborgines of America, Australia or Africa is also not very great. Regarding the medicinal agents of the American Indian Mr. R.F.Stacey says -"From a through Investigation In am convinced that the list is not lengthy, and that there is but little to be learned from their school of practice or reportoise of medicinal agents.

8. ERA OF GLOBALISATION :

The existance of Indian flora specially of Central India is still important for the improving quality of life. However the Alphabetiv treatment is spreading fast. The multinational corporations of North are involved in the process. Various drugs for fever, cough , body ache, asthama, blood enrichment etc. are available and now reached to the village level in India through MNC's. With big banners and repeated advertisement in medica are also capturing Indian villages for sale of the medicines. However the less concentration is paid towards the use of indigenous resources. The common are not paying interest and efforts for the natural and safe resources. Big MNC'S want profit and not bothered about the side effects of the drugs sold by them. The young locals of Bhandara district is not aware of the economics of these profit making companies. Hence in globalisation process the money power dominates the commons in many ways. like They are away from their local natural resources, Easy use and availability of drugs as well as quick releif are responsible for generating indifferent attitude towards the indigenous drugs. Even the retaining of knowledge about plants is not done.

Under liberalisation and privatisation process various construction activities are started with involvement of foreign money and matters. They want their own ways of development. Some natural resources are destroyed due to these activities. The locals were totally dependent on these resources. Now they are compelled to leave their traditional activities. It is also applicable for Bhandara district. This situation is responsible for making poor people more poor. The economic situation of sacred group is deteriorating.

CONCLUSION :

The dependence on medicinal plants is reducing due to globalisation and urbanisation process. Lack of interest of the new generation is clearly visible in this respect.. Though it is equally true that the medicinal plants can be easily preserve and conserve. There is a need of environmental education for the locals of this region. The locals should be aware of the proper use of plants. All health issues have to be studied in the context of available medicinal plant.

Understanding health issues and conservation, preservation of the plants done on need based approach will be useful for local as well as global level. The availability of medicinal plants at reserve forest will not only increase the quality of life of locals but will generate income and employment to them. The knowledge, skills and manufacturing of products will be also useful at global level.

This study shows that it is a hightime to provide full attention for plantation, and conservation of endangered plants in reserve forest. It is also necessary to protect the species easily available in the forest at present.

POLICY RECOMMENDATION :

- 1 Reserve Forest Protection Act should be made strong for the proper implementation of policies.
- 2 Environmental education for children should be made compulsory at rural as well as urban areas.
- 3 This education pattern must be included in the adult education, continuing education and in extension activities of the colleges and schools.
- 4 Commons with the help of NGO's must come up to understand the value of such plants and than act upon it

- 5 Forest officers must pay special attention for the conservation of such species. Their interaction with locals will bring a great change in this respect.
- 6 All the household of the villages should be encouraged to plant some species at their backyard and courtyard of their house.
- 7 A processing unit with local experts, botanists cosmetic technologists should be established to start small industry of herbal and medicinal product.
- 8 The establishment of herbal casonatic manufacturing unit will be useful for local and global levels.
- 9 Separate section in the environmental ministry should be formed to keep watch on the development of plants. It can have a feedback report from reserve forest areas and suggest various norms for further development.
- 10 The continues research activities based on social, economical and botanical front must be encouraged. The recommendations of study should get weightage for the future plans of the country.

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APPENDIX -1

NAME AND USE OF THE PLANTS AVAILABLE IN THE DISTRICT

Category - Trees

Sr. No.	Botanical and local Names	Uses	No. of Household using plants out of 145
1	Clematis triloba (Moravela)	1. Laxative 2. Leporasy 3. Fever	15
2	Michelia Chempaca (Champa)	1. Naushia fever 2. Seeds and fruits for heeling cracks	121
3.	Annona Squamora (Sitaphal)	1. Enrich blood 2. Killing lice 3. Heeling wounds of cattles. 4. destroying worms 5. good tonic	145 Eating regularly by in the season due to delicious in teast
4.	Annona reticulate (Ramphal)	1. Tonic 2. Useful for blood complaints	75
5.	Nymphas a stellala (Nilkamal)	1. Strengthen the body 2. Promote hair	12 (Now rarely found)

6.	Bixa Orellana (Latkan or Shendri)	1. Cough, Vatas 2. Headach 3. Blood diseases 4. Present mosquito bite	145
7.	Postulaca quadrifide (Ranghal)	1. Cough 2. Low fever 3. Skin diseases	15
8.	Sida acuta (Chikana)	1. Urinary discharge 2. Removing Tridosha 3. Cause abortion	04
9.	Avershea Carambala (Kamasakha)	1. Fever (Eating direct fruit) 2. Diarrhoea 3. Vomitting	15
10.	Avershea bilimbi (Bilambi)	1. Rdieving thirst	110 (Supported by old women)
11.	Impatiens balasmine (Tareda or Gulmendi)	1. Pains in joints 2. Tonic 3. Flowers for burns	12
12.	Limnonum (Idalimba)	1. Cough, Vatas 2. Lung troubles, 3. Inffemation (diluted juice)	145 (Supported by old generation)

13. Acida (Lime or limbu) sour	1. Loss in appetite 2. Constipation 3. Cough	145
14. Limetta	1. Cooling but cause cough (Lime sweet or Limbu) 2. Removes Vata 3. Jaundice	145
15. Peronia elephantum (Kavath or Kaitha)	1. Blood impurities 2. Seeds for heart diseases 3. Plup for external use for bites of venomous insects.	145
16. Aegle maremelous (Bel)	1. Palpitation of the heart 2. Urinary troubles 3. Cronic Diarrhoea 4. Prevent heat	145
17. Ailan thus exedsa (Adulsa)	1. Diarrhoea 2. Dysentery 3. Ear ach 4. Cough	100 (old women use it more)
18 Bosurelbia Serrate (Salai)	1. Cough, bronchitis asthama 2. dysentery 3. Snake bite	145 (with combination they give)
19. Choroxylon Swietenia (Bhirs)	1. Leaves for wounds 2. Bark for asringent	130 (Gond community)

20. Cardeaspermum holicacabam (Kanfuti)	1. Rheumatism 2. Stiffness of limbs 3. Snake-bite 4. Ear-ach	135
21. Buchananca Spreng (Achar or Char)	1. Juice of leaves are digestive 2. Blood purificr 3. Prickly heat & itch	145
22. Semecarbur anacrdium (Bilbba)	1. Skin diseases 2. dysentry 3. loss of oppitite	98

Category - Herbs/Shurbs

1. Nigella Linn (Bashpika)	1. Fever 2. Paraluisis 3. Eye scores 4. Piles	20
2. Brassica Campertria (Dahakobi)	1. Removing Cough, Vatas 2. Cure Skin eruption 3. Good in piles, Ulser	145 (women use it more)
3. Ramphanus Sativus (Radish, Muli)	1. Vatas, 2. Tumours 3. Leprocy 4. Snake-bite (with wine mix)	110

4.	Gynandropsis Gynandra (Kanphodi)	1. Snake-bite 2. Prevent formation of pus 3. Ear ach	50
5.	Capparis dicitua (Ber)	1. Cure ear ach	145
6.	Capparis dicitua (Ker, Karelor)	1. Improves appetite 2. Lambago 3. Hicough, cough asthama	70
7.	Capparis Zeylanica (Katerni, Govindi)	1. Removing tridosha 2. Cough	110 (Used more by Gound House holds)
8.	Hibiscus rosa-Sinensis (Jaswand)	1. Cough 2. Flowers for fever 3. Hair Growth	10
9.	Gossypium herbaceum (Kapas, Rui)	1. Juice of fresh leaves 2. For snake bite 3. To procure abortion or for abortion	99 02
10.	Gossypisum arboreum (Dev Kapas, Cotton)	1. Milk used of conjunctivities for infants 2. External remedy in burns	08

11. Tribulus Terrestris (Ghokasu)	1. Enrich blood 2. Mouth trouble and painful Gumes 3. Fruits as tonic	12
12. Pnophytum Sensitivum (Lajalu / Lajri)	1. Leaves rubbled with water allow thirst in bilious fevers	17

Category climbers

1. Tinasposa malaborica (Gulvel)	1. Tonic 2. Liver complains 3. Heat Reduction	47
2. Abrus precaterius (Gunja)	1. Asthama 2. Snake-bite 3. Seeds- purgative (But large dose is poision)	20