Documentation of Indigenous Traditional Knowledge on commonly available plants in Koira Range, Bonai Forest Division, Sundargarh, Odisha, India

ABSTRACT

Mining activities are an important source of revenue for the development of the nation. However, it creates lots of social and ecological imbalance. The major remarked problem is that the local communities of mining areas losses their Indigenous Traditional Practices. Keeping this in view, an attempt has been made to document the indigenous traditional knowledge on commonly available plants in Koira Range, a mining impacted area of Bonai Forest Division, Odisha, India. 29 villages of 4 sections are selected for present survey works. The results revealed that about 63 plants are commonly used by the local communities for different purposes. The practices are documented through present study. The present work will provide a base line data for conservation strategy and biological activities including value addition of available plant wealth.

Keywords: Sundargarh, Conservation of traditional uses, Odisha, Tribal community

1. INTRODUCTION

COVID-19 created a point of attention towards the plants used as a traditional therapeutic agent for primary health care. Globally the researchers, academicians, intellectuals, Govt. officials, Non-Government Organisation and local communities are trying to work on medicinal plants as per their objectives. From last many decades it was needed that we should work on medicinal plants due to global loss. The major reasons behind the global loss of medicinal plants are deforestation, over extraction, introduction of invasive species, anthropogenic activities, climate change etc. Among them, mining activities are essential for development of Nation, but also it creates several negative climatic factors, leads to loss of medicinal plants and their mode of uses. Therefore, urgent need to document, restore and conservation of medicinal plants in mining areas. Keeping this in view, and urgent need of documentation, an attempt has been taken to document the medicinal plants in Koira Range, Bonai Forest Division, Odisha and their traditional therapeutic system.

2. METHODOLOGY

2.1 Study area

Bonai Forest Division is situated between coordinates of 21º 39' 8"N and 85º 30' 23"E towards the North-Western boundary of Sundargarh district of the state Odisha in Eastern India. The study area is situated between coordinates of latitude 21.901723 and the longitude 85.246372 (Figure 1). The Koira forests contain best quality of Sal in association with Asan (*Terminalia elliptica*), Kurum (*Haldina cordifolia*), Sidha (*Lagerstroemia parviflora*) etc. The temperature hovers around 40°C in summer and drop to 8°C -10°C in winter. Koira gets annual rainfall of about 1400 mm during rainy season. The study area is dominated with many tribal communities. Major communities in this area are Munda, Ho, Dehuri, Bhuian etc. [1, 2]

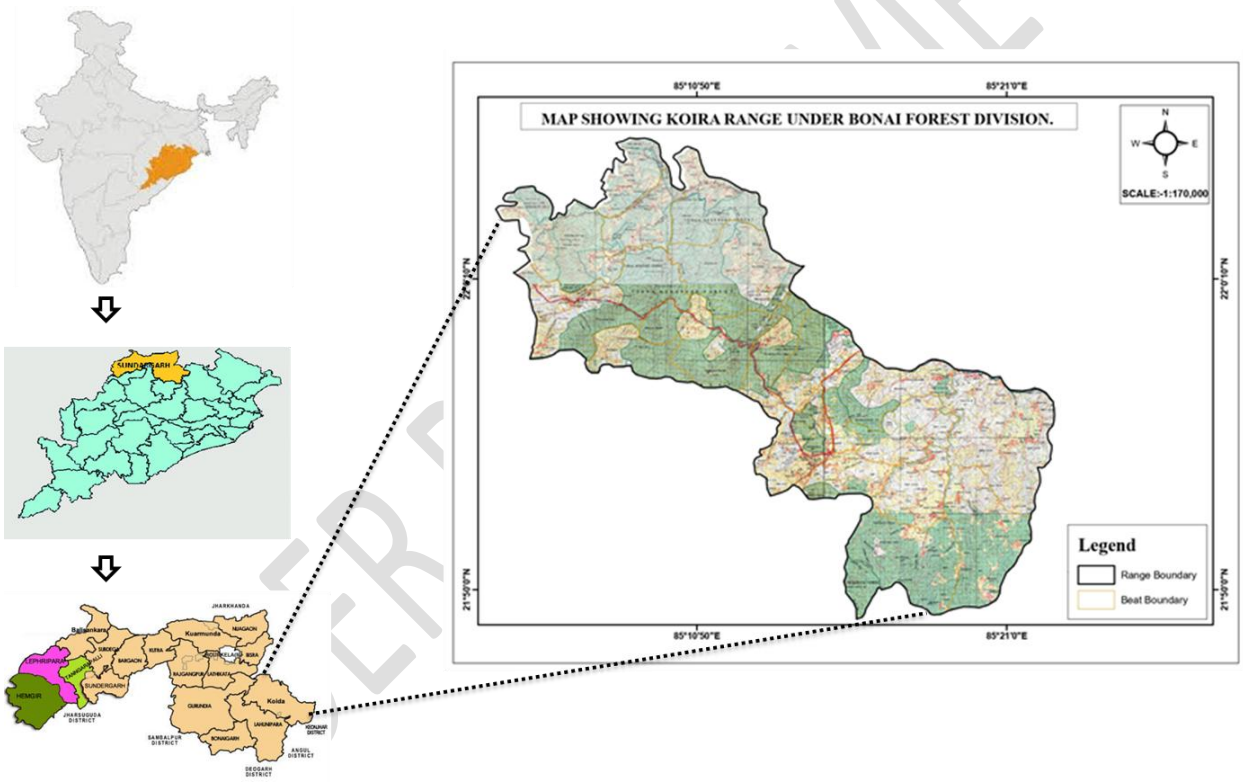

Figure 1: Geographical location of study area

2.2 Data collection

Field works was carried out throughout the year of 2021 on some common medicinal plants available in the study area. Ethno-botanical information was collected through semi-structured interviews [3]. Plants were identified with help of the Flora books [4,5] available literature. The information regarding the usefulness of these medicinal plants was gathered from the villagers as well as traditional healers, particularly the old people (40-60 years) from 29 villages of the study area by direct interview (Plate 2 - 4).

3. RESULTS

Conservation of Indigenous Traditional Knowledge (ITK) through documentation is need of hour throughout the world particularly, in mining areas and high anthropogenic impacted areas. The present result is outcomes of survey works in 29 villages of mining areas of Koira Range, Bonai Forest Division, Odisha, India. The results revealed that 63 commonly available plants species are recorded which is used under Indigenous Traditional Practices. It was observed that the maximum species belongs to Fabaceae family followed by Asteraceae, Dioscoreaceae, Rubiaceae etc. It was noted that some common wild edible plants are consumed in traditional ways. The tubers of *Dioscorea bulbifera* are burnt and consumed as snacks whereas the tubers of *Dioscorea hispida* are kept overnight in running water and consumed as a vegetable (Figure 2). *Antidesma ghaesembilla*, a very common leafy vegetable among the Munda tribe, locally known as Matha saga (Figure 3). Likewise leaves of *Hibiscus sabdariffa* is used as leafy vegetable in Munda community and also they use the fruits to make a sweet & sour chutney (Figure 4). The fully ripen fruits are also eaten raw or cooked. Details are described and listed in Table 1 and the colour photographs of enumerated species are provided (Plate 1).

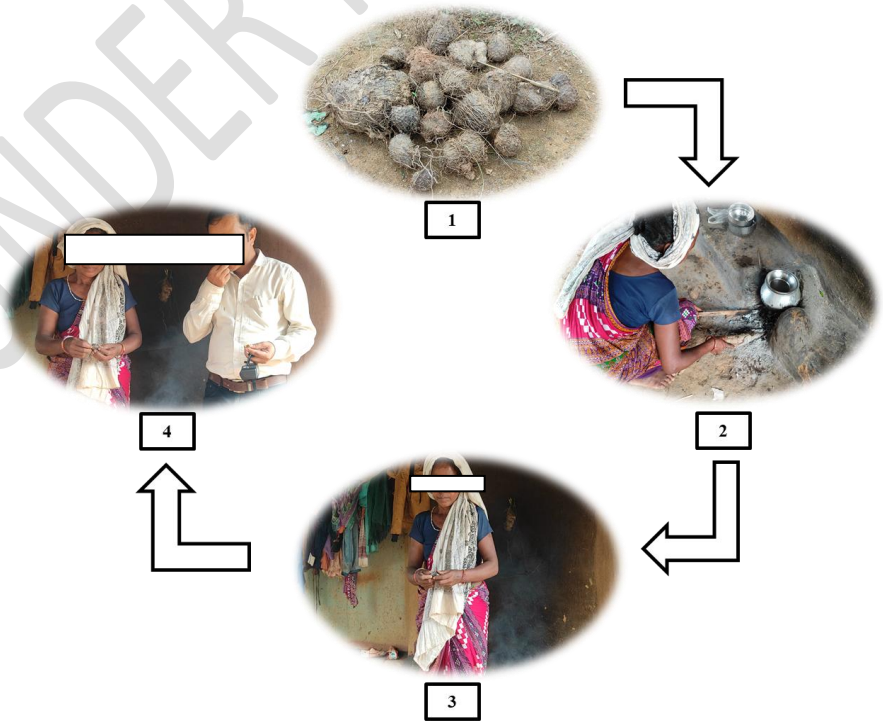

Figure 2: Indigenous Traditional Knowledge on consumption of *Discorea bulbifera* tubers by Munda tribe 1) Collected tubers of *Dioscorea bulbifera*, 2) Tubers are roasted, 3) Peeling of roasted tubers, 4) Roasted tubers are consumed by the comminity and author

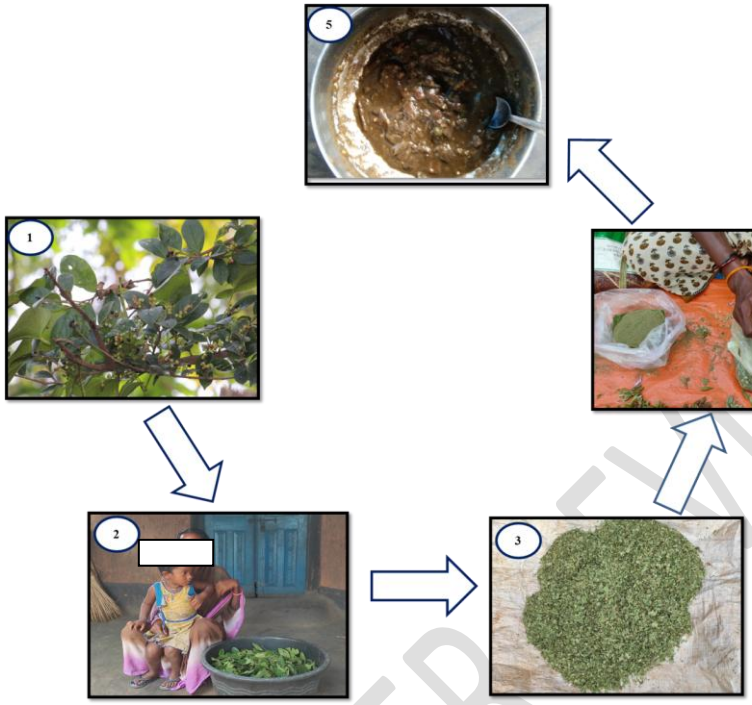

Figure 3: Indigenous Traditional Knowledge on consumption of *Antidesma ghaesembilla* leaves by Munda tribe 1) Plant in wild, 2) Leaves of *Antidesma ghaesembilla* collected by Munda tribe, 3) Processing of leaves, 4) Selling in local market, 5) We tasted the dish made from the powered leaves

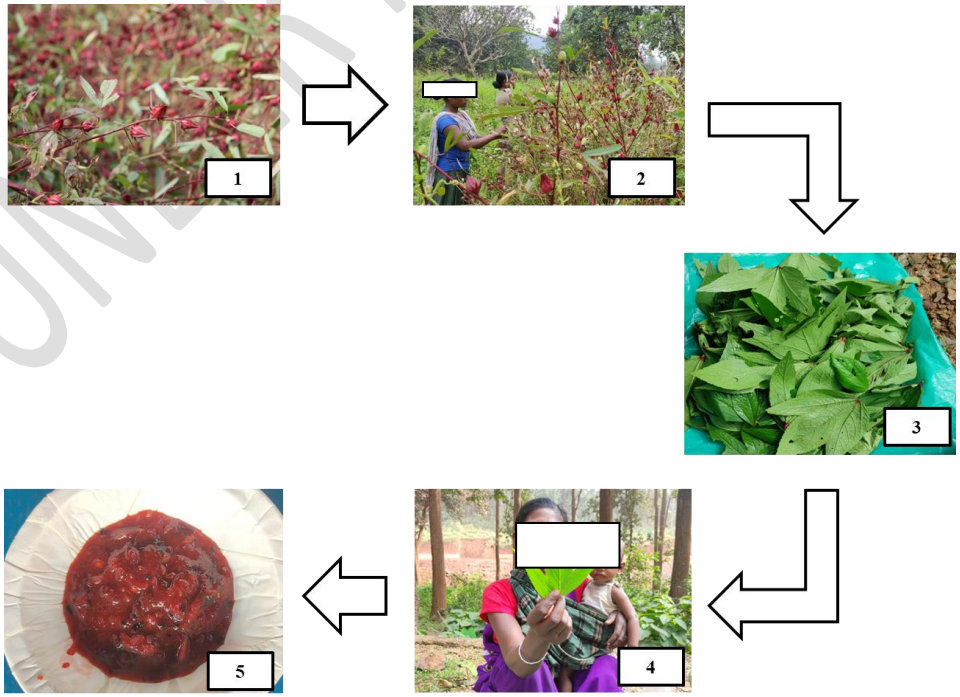

Figure 4: Indigenous Traditional Knowledge on consumption of *Hibiscus sabdariffa* leaves and fruits by Munda tribe 1) Plant in wild, 2) Collection of leaves and fruit of *Hibiscus sabdariffa* 3 & 4) Selling in local market, 5) Chutney made from fruit of *Hibiscus sabdariffa*

DISCUSSION

There are numbers of research papers are published on traditional therapeutic knowledge from the state but less or no reports are available from study areas. Recently Kumar et al. (2021) reported Some Common Medicinal Plants in Barsuan Range, Bonai Forest Division. They reported 50 medicinal plant species of 47 genera belonging to 32 families. Tribal communities in the study area mainly depend on medicinal plants to fight against diverse diseases and disorders like skin diseases, diabetes, rheumatism, jaundice, typhoid, fever etc.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

4. REFERENCES

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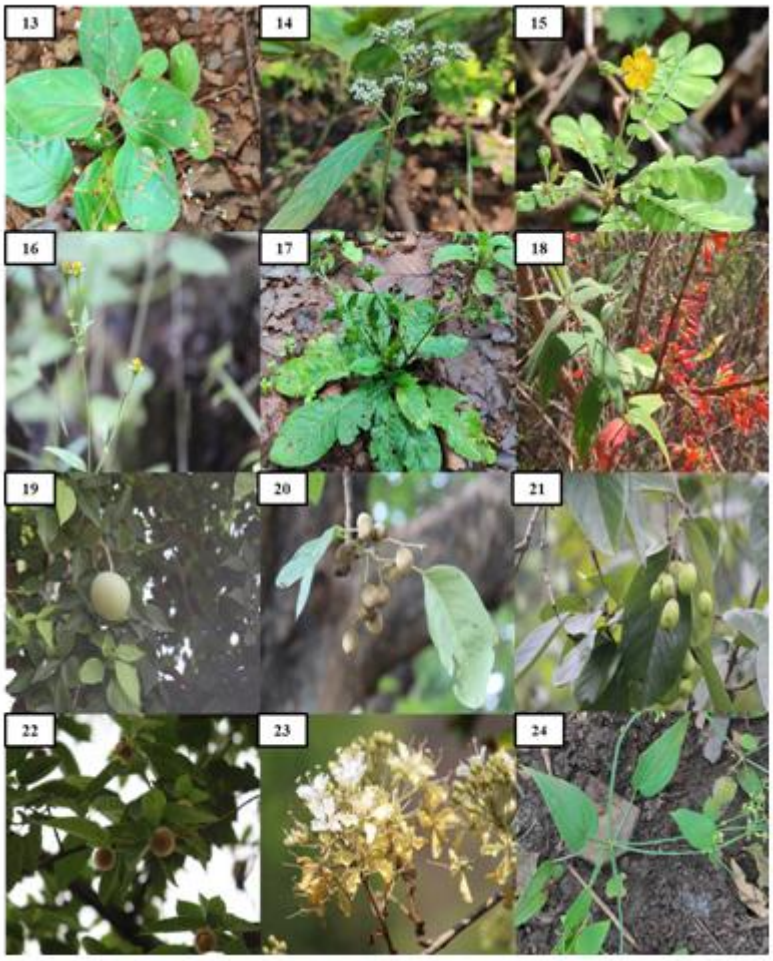
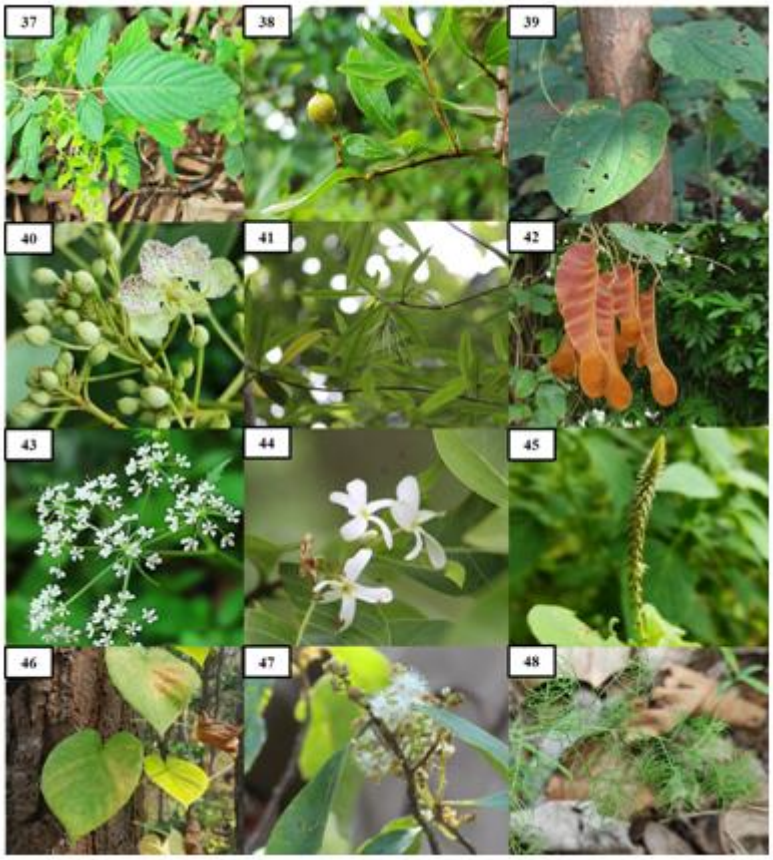
Plate 1: 1) *Andrographis paniculata*, 2) *Hemidesmus indicus*, 3) *Ageratum conyzoides*, 4) *Desmodium triquetrum*, 5) *Celastrus paniculatus*, 6) *Millettia pinnata*, 7) *Evolvulus alsinoides*, 8) *Cissampelos pareira*, 9) *Cassia fistula*, 10) *Baccharoides anthelmintica*, 11) *Bauhinia malabarica*, 12) *Grona triflora*



13) Hedyotis ovatifolia, 14) Knoxia sumatrensis, 15) Biophytum sensitivum, 16) Acmella paniculata, 17) Elephantopus scaber, 18) Woodfordia fruticosa, 19) Aegle marmelos, 20) Terminalia bellirica, 21) Terminalia chebula, 22) Haldina cordifolia, 23) Phanera vahlii, 24) Rubia cordifolia

25) Diospyros melanoxylon, 26) Mesosphaerum suaveolens, 27) Dioscorea bulbifera, 28) Scoparia dulcis, 29) Plumbago zeylanica, 30) Anisomeles indica, 31) Careya arborea, 32) Sida cordata, 33) Curculigo orchioides, 34) Bidens pilosa, 35) Helicteres isora, 36) Smilax zeylanica



37) Phyllodium pulchellum, 38) Lawsonia inermis, 39) Dioscorea puber, 40) Phanera retusa, 41) Alstonia scholaris, 42) Butea superba, 43) Pimpinella heyneana, 44) Wrightia antidysenterica, 45) Achyranthes aspera, 46) Tinospora cordifolia, 47) Symplocos racemosa, 48) Asparagus racemosus

Plate 2: Collection of information on Indigenous Traditional Knowledge from different sections of Koira Range, Bonai Forest Division, Odisha, India.

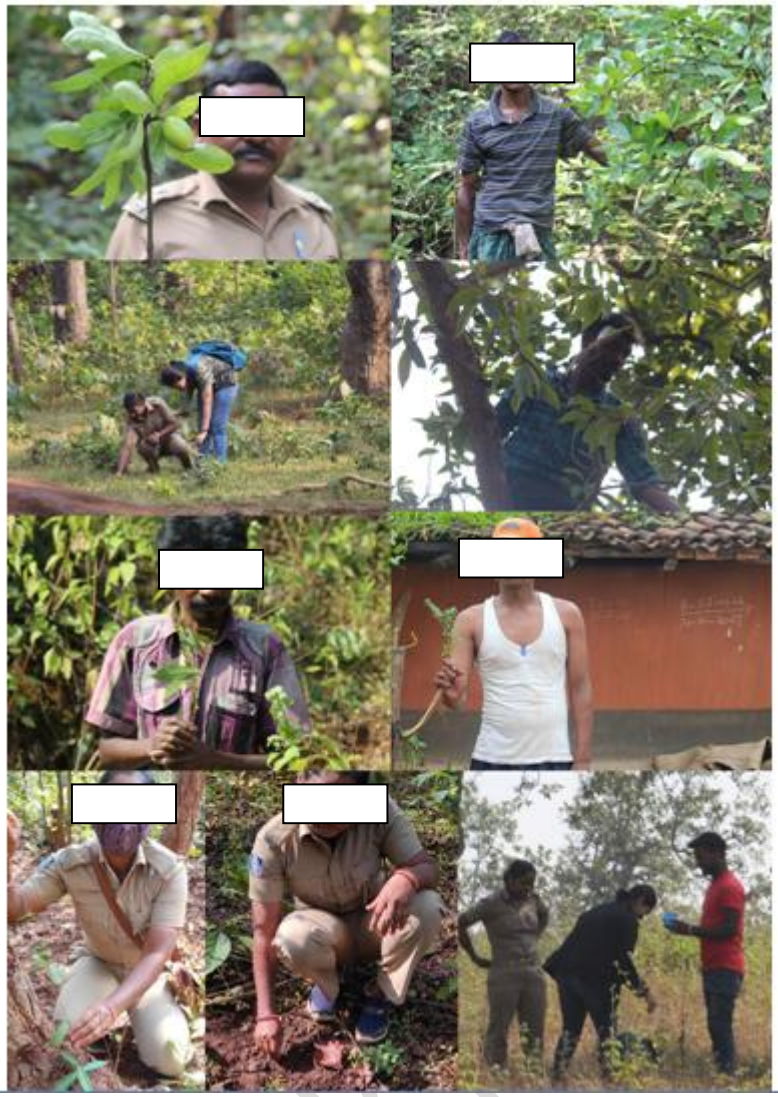


Plate 3: Collection of information on Indigenous Traditional Knowledge from different sections of Koira Range, Bonai Forest Division, Odisha, India