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Bio-Resource based Value Chains

Identifying cases to develop ABS Good Practices in Maharashtra

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Foreword

DR. VILAS BARDEKAR,
CHAIRMAN MAHARASHTRA STATE BIODIVERSITY BOARD

Conservation of biodiversity, sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources are the three main objectives of the Convention of Biodiversity (CBD, 1992) to which India is a party. In view of the international obligation and for achieving the objectives of the CBD, the Biological Diversity Act (BDA), 2002, was promulgated by the Government of India and became effective from February 5, 2003. In 2012, the Maharashtra State Biodiversity Board (MSBB) was established to implement the BDA 2002 at the state level. As per its mandate, MSBB creates and promotes Biodiversity Management Committees (BMCs) in order to strengthen the ability of the people at the village level to protect, conserve, develop and make sustainable use of natural resources.in compliance to the provisions of the BDA 2002. Access and the sharing of the benefits arising out of the utilisation of genetic resources (hereafter called Access and Benefit Sharing, ABS) is the main mechanism through which commercial utilisation of Bio-Resources and Conservation of Biodiversity will be achieved at the local level.

This study, conducted as part of Indo-German ABS partnership project, identified cases of local collection of Bio-Resources, which can be developed into cases of ABS Good Practices. Model cases of ABS compliant and successful development of alternative livelihood options will be very useful for guiding the BMCs in their efforts of implementing the BDA 2002 within the rural villages of Maharashtra.

MR. ARAKKAL ASHRAF,
MEMBER SECRETARY MSBB

India is one of the 17 mega-diverse countries in the world. Biodiversity supports millions of Indians in their livelihoods and ways of life. Therefore, maintaining its rich biodiversity and natural resources is essential for achieving inclusive and sustainable development.

The ABS Partnership Project aims at strengthening the capacities of various stakeholders, as well as raising awareness and building the capacities of the commercial user groups of Bio-Resources and associated knowledge for the effective implementation of ABS mechanisms under the BDA 2002, in keeping with India's commitments under the Nagoya Protocol, 2010.

MSBB is working with different stakeholders to implement the Biodiversity Act 2002. Formation of BMCs is being done at block and village level. People's Biodiversity Registers (PBR) are being developed to document the biodiversity at the local level.

This study conducted as part of the ABS partnership project supports the implementation of the ABS mechanism at the village level by making the first step towards the development of ABS Good Practices, which can be shared, copied and modified based on the specific requirements of the individual BMCs.

DR. KONRAD UEBELHÖR,
DIRECTOR IGBP GIZ

The ABS partnership project is a technical cooperation between India and Germany and is commissioned by the Federal Ministry for Economic Cooperation and Development (BMZ) under the Indo-German Biodiversity Programme.

The project is being implemented in partnership with the Ministry of Environment, Forest and Climate Change (MoEFCC), the National Biodiversity Authority (NBA) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH with three pilot State Biodiversity Boards of Uttarakhand, Tamil Nadu and Maharashtra.

This document is part of a larger study conducted under the ABS partnership project in the State of Maharashtra. The study gives a way forward to work towards ABS mechanism for the large variety of locally available Bio-Resources by identifying cases, which have the potential to be developed into ABS Good Practices. Good Practice models offer an effective handrail to BMCs for configuring the sustainable use, commercial utilization, and conservation of local Bio-Resources in accordance with the BD Act 2002.

Executive Summary

Models of Good Practice represent critical components in the toolbox of decision support for government and non-government institutions pertaining to rural development and the conservation of biodiversity. The Access and Benefit Sharing Partnership Project conducted a study on Bio-Resource based value chains in Maharashtra in order to identify cases with significant potential for developing models of ABS Good Practice. In accordance with criteria developed prior under the ABS Partnership Project, four cases of advanced commercial utilisation of Bio-Resources (BRs) were selected, documented and analysed to provide the basis for ABS Good Practice development from the state of Maharashtra.

The documented cases demonstrate four different and successful approaches undertaken by NGOs in assisting local communities towards sustainable collection and commercial utilisation of BRs. The individual approaches showcase various elements of possible development of alternative livelihood options including (a) the creation of community owned companies and value added through pre-processing, (b) the effective involvement of government boards as nodal point for trade, (c) the efficiency of globally recognised product certification, and (d) the concurrent social and conservatory benefits from the ex situ cultivation of BRs.

While all four cases provide tangible improvements especially for forest dependant people, the particular characteristics included in two of the cases mark them as very good candidates for further development into ABS Good Practice.

The development of ABS Good Practice can significantly support the implementation of the Biodiversity Act 2002, for example through incorporating indicators of compliance such as (1) the involvement of Biodiversity Management Committees (BMCs) as key stakeholders for managing the use of BRs from the area of their local jurisdiction, and (2) users sharing benefits from the commercial use of BRs as per the mandate of the BDA 2002.

1. Background

The state of Maharashtra expands from the centre of India's west coast about 850 km to the east crossing a coastal plain, the Western Ghats and almost the entire Deccan Plateau. Its horizontal expansion and elevation gradient (0–1646 m) include nine different agro-climatic zones with a large spectrum of habitat specific Bio-Resources (BRs). More than 7000 species of medicinal plants alone are recorded from Maharashtra[1]. The livelihood of many people is dependent on using local BRs, although the dependency varies across the agro-climatic zones (Fig. 1).

BRs are mainly collected by certain communities including forest dwellers, tribal people and other associated communities. They sell the collected BRs mostly to local traders. Through a

1 Planning commission report on Conservation & Use of Medicinal Plants, March 2000.

chain of traders and middlemen the BRs reach the main market. The network of traders still operates in a very traditional and less organised fashion, which favours the trader rather than the collector.

Presently the primary collectors of BRs face the challenge of finding suitable markets which would provide acceptable prices for the quality and quantity of BRs they can offer. In addition, price fluctuations as well as a lack of current market and price information at the local and regional level are evident in this trade. This affects the income of the primary collectors, who are solely dependent on the middlemen or village level traders. Concurrently, financial and logistic constraints make it difficult for local collectors and producers to interact and negotiate more closely with potential clients which would promise better returns.

2. Implementation of Biological Diversity Act (BDA) in Maharashtra

The Maharashtra State Biodiversity Board (MSBB) was established in 2012. MSBB initiated the process of creating Biodiversity Management Committees (BMCs) at the local level (Village Panchayat). With a mandate to constitute 28500 BMCs across the state, MSBB has constituted around 23772 or more than 83% of the target BMCs at Gram Panchayat level until July 2018. Presently MSBB has prioritised (a) the process of training and capacity building for the constituted BMCs, and (b) the support of NGOs which assist the BMCs in the documentation required for the People's Biodiversity Register (PBR). So far 42 PBRs are prepared within the state of Maharashtra. In September 2018, the Government of Maharashtra has appointed officers at the rank of Deputy Conservator of Forest as Nodal Officers of MSBB for their respective district to strengthen the process of effective implementation of the BDA at the village level.

3. The Study

One of the key focus areas under the scope of the ABS Partnership Project is to develop Good Practices of Access & Benefit Sharing (ABS). The present study was conducted to support this key focus by analysing the value chains of specific BRs which (1) have their source area in Maharashtra, (2) provide better livelihood opportunity to local communities (providers), and (3) are important under aspects of conservation. At the outset, several ongoing BRs related initiatives of local NGOs in Maharashtra were screened (Fig. 1). Four NGOs were shortlisted through a primary survey based on following criteria:

1) High level of community involvement,

2) Effectiveness in ensuring conservation,
3) Innovative approaches,
4) Sustainability and
5) Scalability and or Replicability

The resulting shortlist includes the NGOs (1) Applied Environment Research Foundation (AERF), Pune, (2) Gondwana Herbs, Gadchiroli, (3) Medicinal Plant Conservation Centre (MPCC), Pune, and (4) Bhartiya Agro Industries Foundation (BAIF), Gadchiroli.

The activities of the selected NGOs related to commercial utilisation of BRs were documented and analysed pertaining to the improvements achieved for conservation on one hand and the livelihood of local communities on the other hand.

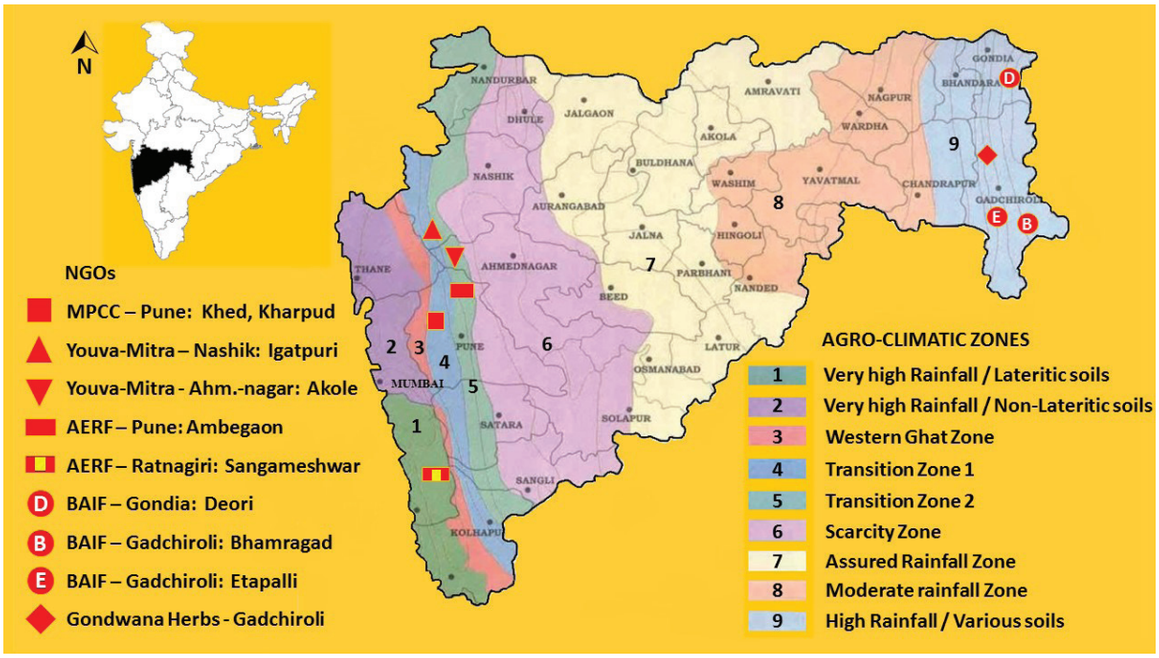

FIG.1 SELECTED NGOS AND CORRESPONDING LOCATIONS OF ESTABLISHED BRS VALUE CHAINS

4. Key highlights of the study

Eminent progress in commercial utilisation of BRs achieved by the NGOs are presented NGO-wise in the following paragraphs. The different market linkages, which have been newly established through the support of the NGOs, are shown in the flow charts (Figs. 3, 5, 7, and 9).

4.1 APPLIED ENVIRONMENT RESEARCH FOUNDATION (AERF) PUNE

Location: Sangameshwar, Ratnagiri and Bhimashankar, Pune

Bio-resources: Hirda (Terminalia chebula) and Baheda (Terminalia bellirica)

In the region of the northern Western Ghats, indiscriminate logging of forests for satisfying immediate monetary needs is resulting in severe degradation of forests and habitat. This situation is particularly true and has serious ramifications for key biodiversity areas and forest ecosystems which are part of the global biodiversity hotspot in the Western Ghats.

FIG. 2 COLLECTION SITE OF BAHEDA IN A SACRED GROVE, SANGAMESHWAR

In order to restrict forest degradation, habitat loss and the resulting consequences for local people, AERF introduced an alternative livelihood option for the forest dependent communities. AERF decided to implement the FAIRWILD certification scheme specifically for the promotion of the sustainable collection of the non-timber forest produce Hirda (Terminalia chebula) and Baheda (Terminalia bellirica).

The FAIRWILD certification is an international certification scheme, which has one of the most stringent protocols and requirements with respect to biodiversity conservation, sustainable harvesting methods, and monetary benefits to resource owners, and it ensures ownership of and access to target resources and equal sharing of benefits.

Hirda and Baheda are collected from the community managed forests and sacred groves in the northern Western Ghats of Maharashtra. These two BRs represent good examples for the strong interdependency that can exist between communities and their BRs, as the latter are utilised but also persist in ecologically intact and conducive environments through the particular care of the communities.

The local communities from 16 villages are involved in the sustainable collection of the fruits.

AERF assisted the communities in forming their own trade base called Nature Connect. Hence, they also conduct primary processing and sell their products to the UK based company "Pucca Herbs" via Nature Connect. This initiative is collectively implemented by locals and the certified BRs are sold at premium price. The certification also safeguards that 20% of the profits earned by the company is shared with the local community as royalty.

Summary of the AERF initiative:

Number of villages involved	12 villages in the Sangameshwar Block, Ratnagiri 4 villages in Bhimashankar, Pune
Improvement in local livelihood	Increase in annual household income (approx.) INR 10,000
Improvement under conservation aspects / Impact on Forest Habitat	80% reduction in tree cutting, Sustainable harvesting, Monitoring the access of BRs

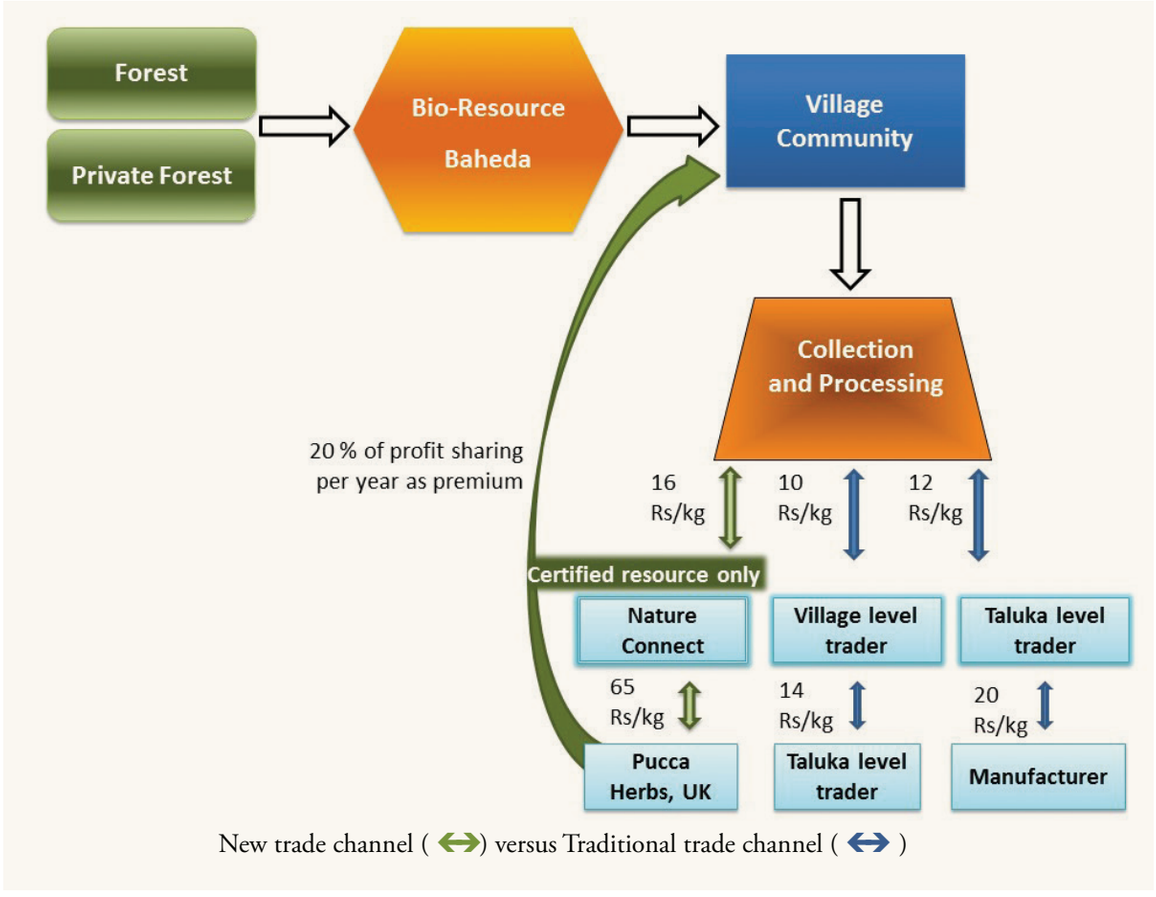

FIG. 3 FLOW CHART SHOWING THE VALUE CHAIN DEVELOPED BY AERF FOR THE BIO-RESOURCE BAHEDA

4.2 GONDWANA HERBS

Location: Jambulkheda Block and Kurkheda Block, Gadchiroli District

Bio-Resources: 145 varieties of BRs with the bulk volume of traded BRs made up by Mahua (Madhuca longifolia) and Bija (Pterocarpus marsupium).

Gondwana Herbs is a Gadchiroli based initiative, supported by the State Forest Department to achieve sustainable livelihood options for local communities who are dependent on forest-based BRs.

FIG. 4 PROCESSING FACILITY OF GONDWANA HERBS AT GADCHIROLI

The NGO referred to in this initiative is 'Jillha Vanaaushati Vaidya Mandal', which is registered with the District Charity Commissioner Office.

The schemes within the State Forest Department and other government departments such as Tribal Sub Plan (TSP) and District Planning and Development Council (DPDC) also provide financial support to this initiative. The livelihood option developed here includes that Joint Forest Management Committees (JFMCs) were mandated to collect BRs from the forests through the communities and sell them to Gondwana Herbs.

Presently about 145 Non-Timber Forest Produces (NTFP) are collected following approved sustainable harvest methods that are monitored by the managing committee of the NGOs. The collectors maintain a quality standard as prescribed by Gondwana Herbs.

In addition, the Forest Department has supported the setup of a processing facility. Various products such as Ayurvedic supplements and nutraceuticals are manufactured and sold under the brand name of 'Gondwana Herbs' through 11 government authorised outlets across the state of Maharashtra. The profit earned by the 143 JFMCs, which are actively involved in the BRs collection, are utilised for village development activities.

Summary of the Gondwana Herbs initiative:

Number of villages involved	143 villages within the district of Gadchiroli
Improvement in local livelihood	Increase in annual household income (approx.) INR 16,500
Improvement under conservation aspects / Impact on Forest Habitat	Monitoring of the access to BRs

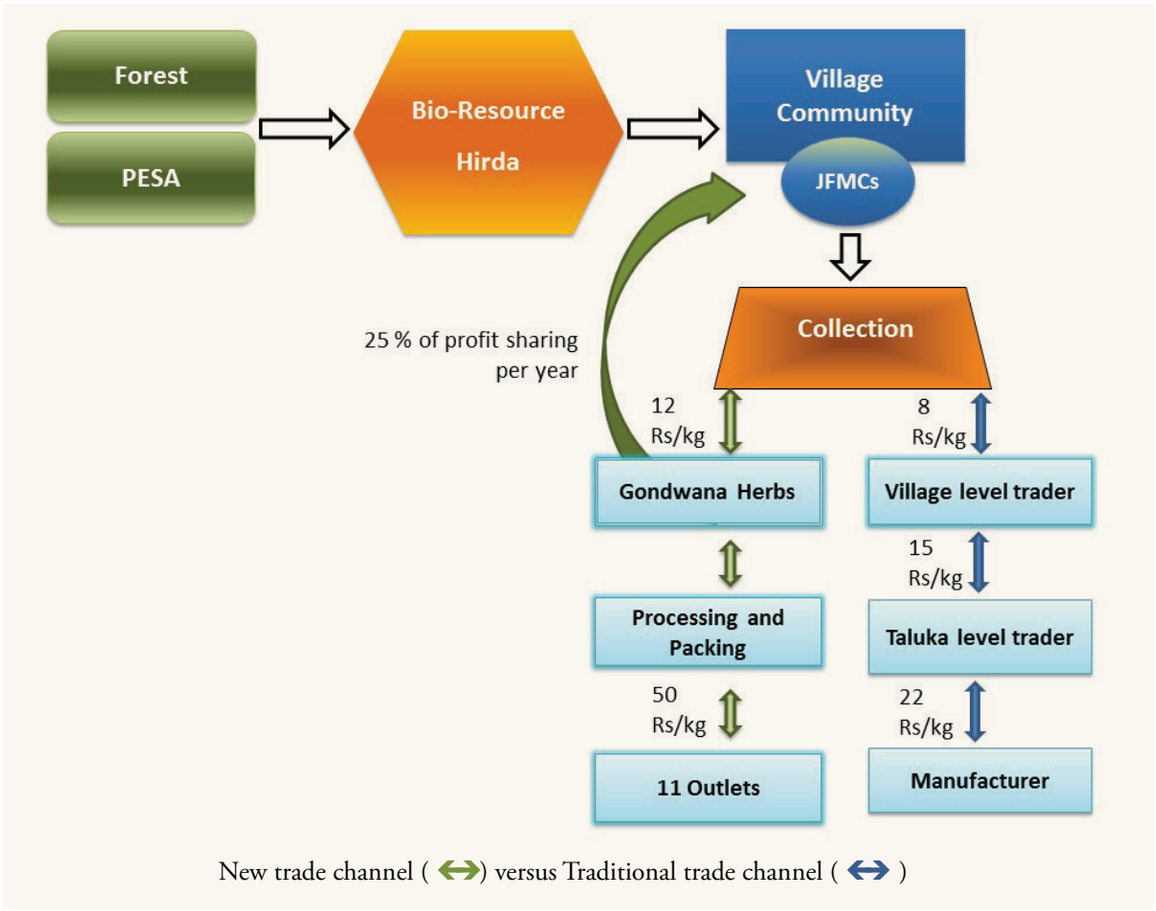

FIG. 5 FLOW CHART SHOWING THE VALUE CHAIN DEVELOPED BY GONDWANA HERBS FOR HIRDA

4.3 MEDICINAL PLANT CONSERVATION CENTRE (MPCC)

Location: Khed Block, Pune

Bio-Resources: Shikakai (Acacia concinna), Vavding (Embelia ribes), and Bal Hirda (Terminalia chebula)

The Foundation of Revitalization of Local Health Tradition (FRLHT), an ENVIS centre for medicinal plants, initiated a project for the establishment of Medicinal Plant Conservation Areas (MPCA) throughout India. Since the establishment of MPCA in Maharashtra, the NGO Medicinal Plant Conservation Centre (MPCC) has functioned as the local partner for the FRLHT initiative.

MPCC made significant progress towards growing all indigenous, locally known, collected, and medicinally important plant

FIG. 6 HONYAKOLI MEDICINAL PLANT CONSERVATION AREA (MPCA)

species from the different agro-climatic regions in special nurseries. While setting up MPCAs, MPCC also documented local traditional information related to practices and application of medicinal plants.

With the involvement of local communities, MPCC has established 13 MPCAs in Pune. Local communities collect BRs like Shikakai, Vavding and Hirda from MPCAs and sell it collectively through profitable market linkages established by MPCC.

The collectors are also trained by MPCC in sustainable harvesting techniques and knowledge on primary processing. All BRs collected from MPCAs are collectively auctioned and sold to the highest bidder. Most of the bidders are taluka level traders. This mechanism ultimately results in increased profits for the communities and higher transparency in the value chain.

Summary of MPCC initiative:

Number of villages involved	13 villages in the Khed block, Pune
Improvement in local livelihood	Increase in annual household income (approx.) INR 7,600
Improvement under conservation aspects / Impact on Forest Habitat	Sustainable Harvest

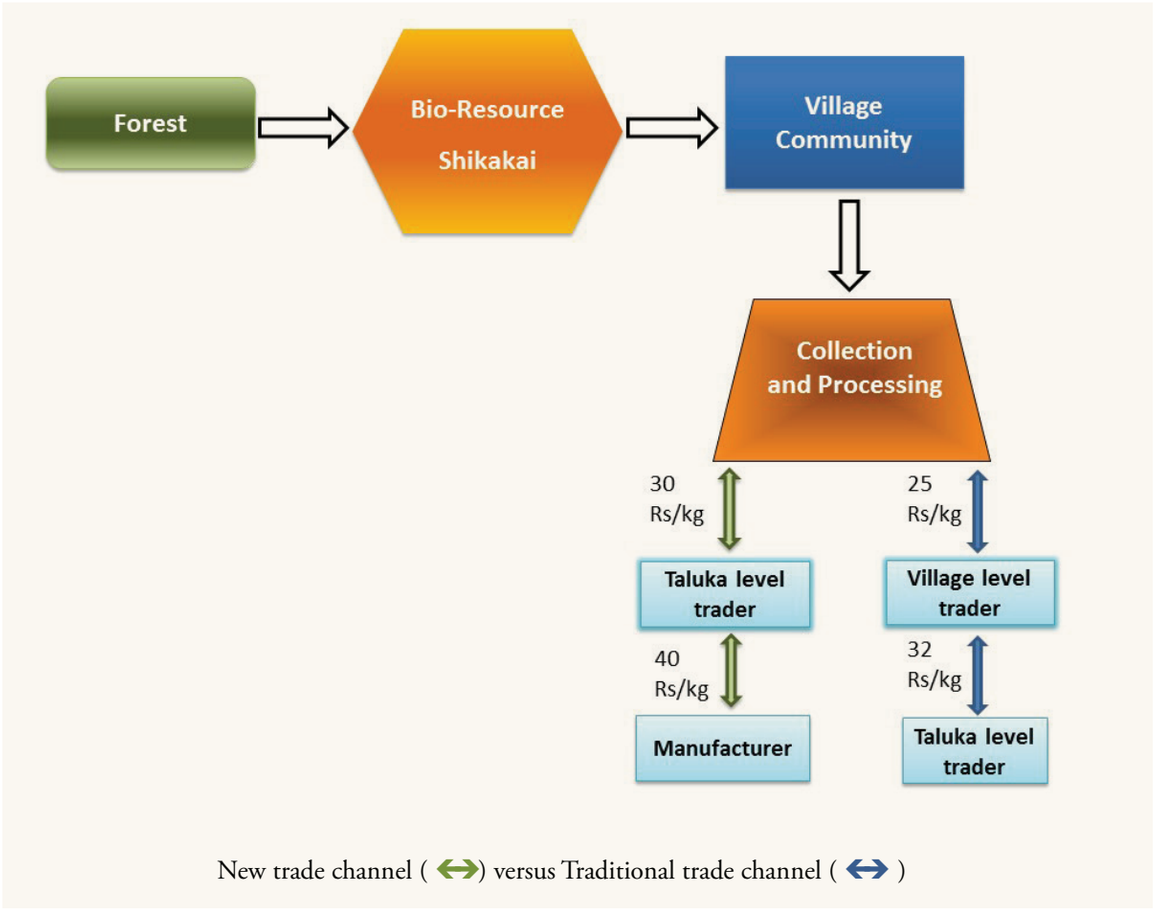

FIG. 7 FLOW CHART SHOWING THE VALUE CHAIN DEVELOPED BY MPCC FOR SHIKAKAI

4.4 BHARTIYA AGRO INDUSTRIES FOUNDATION (BAIF)

Location: **Ettapali Block of Gadchiroli District**

Bio-Resources: **Tussar Silk and Lac**

The scope of the ongoing project of BAIF in collaboration with the Silk Board of India (SBI) is improving the value chain and increased engagement of communities in the collection and production of the two high valued BRs Tussar silk and Lac. Both are available from the area of the Ettapali Block of Gadchiroli District.

FIG. 8 COLLECTION AND SORTING OF TUSSAR SILK COCOONS IN ETTAPPALI

Tussar silk production is well established in the whole Gadchiroli region. It is mainly used in preparation of traditional garments and articles. Lac is a scarlet resinous secretion of lac insects such as Kerria lacca. Lac is the base substance for Shellac, which has various uses and immense value in the paper, paints and varnish industries, and thus can provide high economic return to the lac cultivators and the local communities.

BAIF has posted Community Resource Persons (CRPs), who are responsible for sustainable implementation of the project in their villages. They undertake capacity building of local communities and have gained excellent rapport with them. The majority of the participants in training programs for Tussar silk production are women. This indicates that this livelihood option diversifies family income with the women taking the new opportunity for employment. The overall production of Tussar silk increased by about 25% due to good acceptance of the alternative livelihood option and active participation of local people.

With the support of BAIF, Tussar silk cocoons and Lac are now produced by local communities in a much more professional manner. Market linkages are established, wherein silk cocoons are procured by the Silk Board of India and Lac is collectively sold through a transparent auctioning process. The villagers use parts of the income for conservation measures such as plantation of host trees for the insects producing the two BRs, i.e. mainly Terminalia arjuna (Arjun sadada) and Terminalia cuneata (Ain). Also this case shows inter-dependency between communities and BRs, as the proliferation of the insects is fostered by the local people.

Summary of the BAIF initiative:

Number of villages involved	28 villages in the Ettappali Block, Gadchiroli
Improvement in local livelihood	Increase in annual household income (approx.) INR 7,000
Improvement under conservation aspects / impact on Forest Habitat	Host Tree Plantation

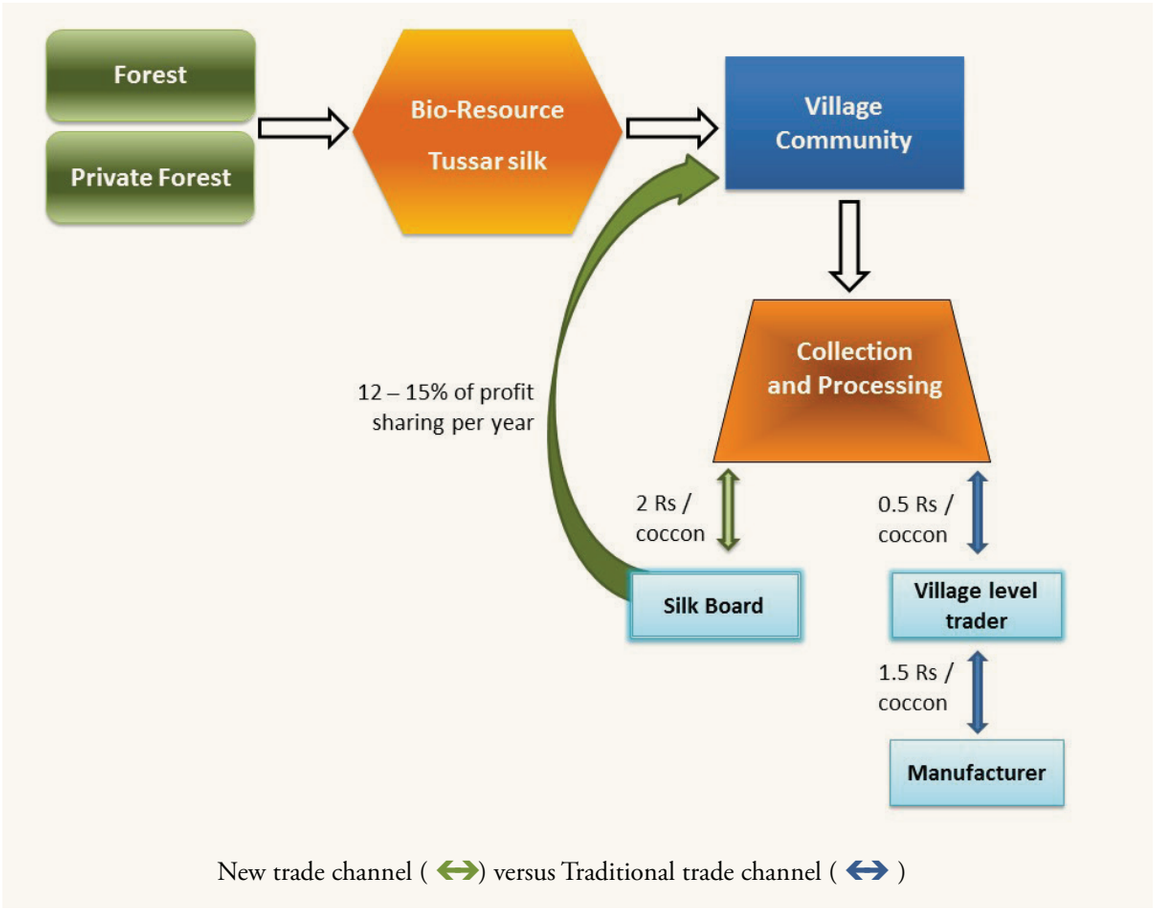

FIG. 10 FLOW CHART SHOWING THE VALUE CHAIN DEVELOPED BY BAIF FOR TUSSAR SILK

5. Commercial uses of the selected Bio-Resources from Maharashtra

The study has identified some key BRs which are commercially used in Maharashtra, and which have a high potential for inclusion in the ABS mechanism (Fig. 10).

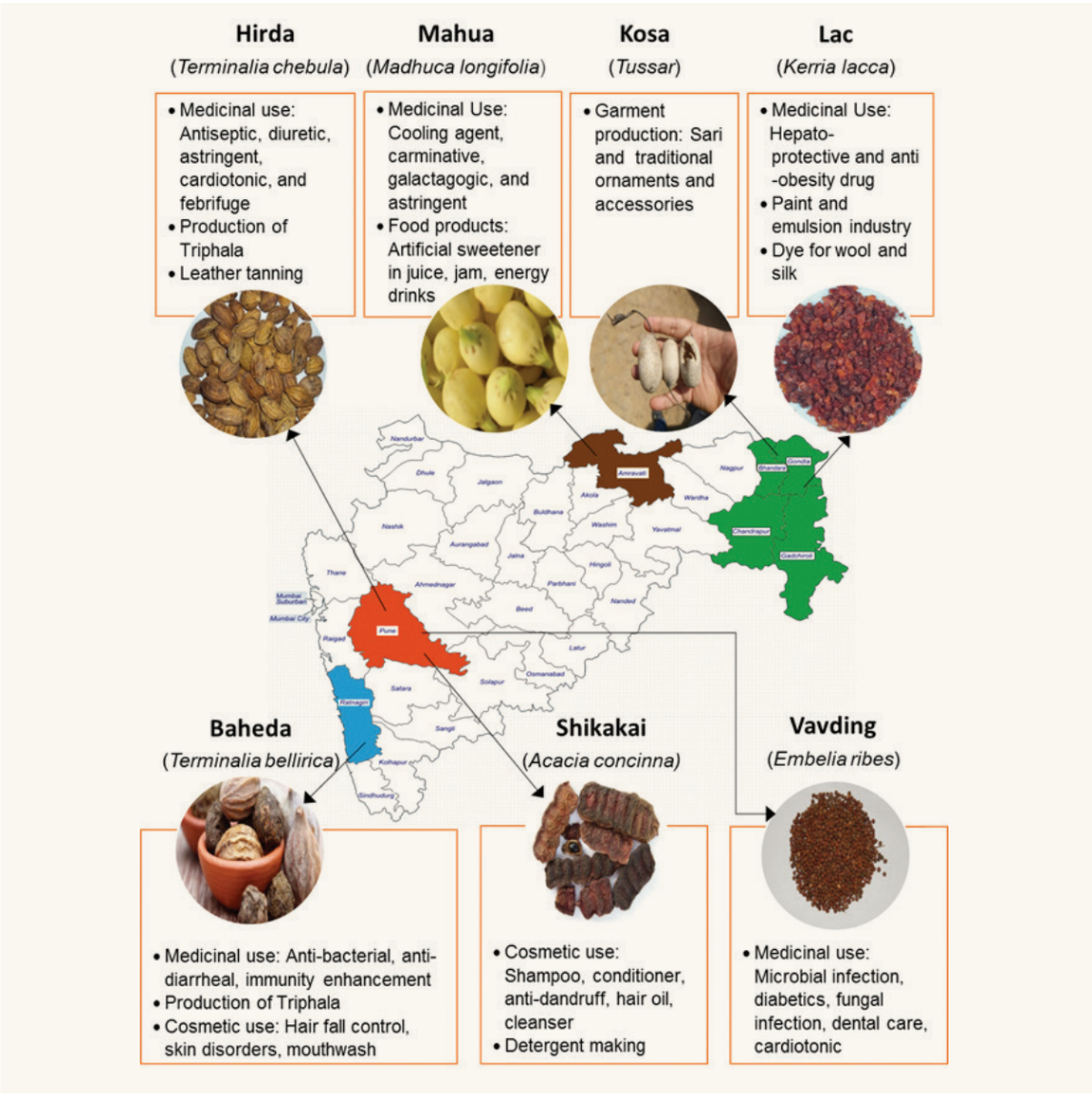

FIG. 10 SELECTED BIO-RESOURCES WITH HIGH POTENTIAL FOR INCLUSION IN THE ABS MECHANISM

The commercial values of the BRs compiled in Fig. 10 can be roughly estimated by considering the kind of final market products which the manufacturers/industries supply. Many of them supply market sectors which currently enjoy large growth rates such as pharmaceuticals, health

care products, and cosmetics. The demand in some of the BRs is emphasised further by the enormous number of about 1100 Ayurvedic drug companies which were registered with the Food and Drugs Administration in Maharashtra alone in 2016. The same number also outlines the large potential that lies with (a) pre-processing to keep quality standards, and (b) better market linkages, e.g. straightforward between BMC owned companies and manufacturer. The cases identified for having high potential for developing ABS Good Practices can help in guiding BMCs to achieve higher returns for both local livelihood and conservation.

The study additionally surveyed 320 households from 28 villages to analyse the impact of BRs utilisation on the livelihood of the local people (Fig. 11).

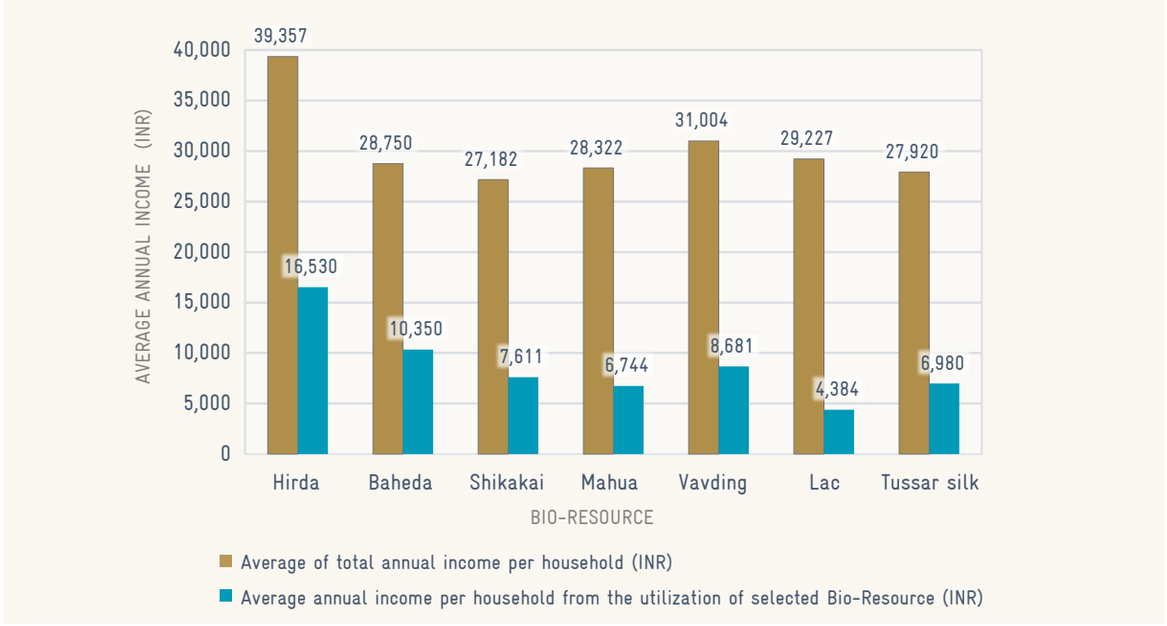

FIG. 11 AVERAGE ANNUAL INCOME PER HOUSEHOLD INVOLVED IN COLLECTING BIO-RESOURCES (IN INR), AND THE SHARE OF AVERAGE ANNUAL HOUSEHOLD INCOME CONTRIBUTED BY THE COMMERCIAL UTILISATION OF THE SELECTED BIO-RESOURCES

Most of the households (HH) surveyed are small and marginal farmers with average land holdings of around 1.5 acres. The primary occupation of these tribal HHs is agriculture, followed by occupation as daily wage labour at farms or in local industries, and in the third place comes occupation as collectors of BRs. However, as cultivation on the small land holdings is mostly for household use (subsistence farming), the true margin of income generation through agriculture is minuscule. Also, the wage opportunity in villages is very limited and rather entails frequent migration. The survey also showed that 70% of the BR collectors are women, which means that collection of BRs is important for (a) improving and diversifying HH income, and (b) empowering women for community development.

Better collection practices and effective market linkages can have significant positive effects for the BR collectors. An even larger impact can be expected from the establishment of functional BMCs and the compliance of BRs users to the BDA 2002. This will generate higher financial returns for the villages in the forms of (a) better income for local livelihood, and (b) the financial benefits shared by the BR users for local conservation measures.

6. Conclusions

Some cases of Bio-Resource utilisation analysed as a part of this study reflect the great extent of inter-dependency of community and Bio-Resources particularly in remote rural environments such as in the Vidharva region around Gadchiroli and in northern Western Ghats. The overall study demonstrates the importance of awareness among the providers about the rights given to them under the BDA 2002 for the successful establishment or the improvement of profitable value chains.

All cases documented in this study represent good examples of sustainable resource use for NTFP based livelihoods. However, two ABS related key elements are clearly missing:

1. Involvement of BMCs as key stakeholders for managing the use of BRs from the area of their local jurisdiction.
2. Users sharing benefits from the commercial use of BRs as per the mandate of the BD Act 2002.

The focus of the study was to identify cases for the development of ABS Good Practice. "Good Practice" in general is a practice which has been proven to work well, produce good results and can therefore be recommended as a model to be shared, so that a larger number of people can adopt it.

The present study looked at four selected cases of NGOs facilitating better livelihood for local people through better use of NTFPs. Each of the four approaches developed by the NGOs showcase notable improvements in terms of alternative livelihood options and conservation of biodiversity. Two of the case studies, i.e. the approaches taken for better commercial utilisation of (a) Hirda and Baheda by AERF, and (b) mainly Mahua by Gondwana Herbs, include characteristics which are closely corresponding to key criteria required for ABS Good Practice cases. These model characteristics include (a) the development of a "Participatory" approach, (b) the achievement of facilitating "Transparent" management and value chains, (c) the "Equitable" sharing of benefits, (d) a high degree of "Sustainability" and (e) "Replicability" of the operational process.

The identified cases can be developed into ABS Good Practice models under the scope of the ABS Partnership Project. The next steps required for the development of a Good Practice model are: (Step 1) Pilot BMCs will be selected from the specific study area.

The NGOs, which have developed the approaches, will (Step 2) be involved to undertake the capacity building of the pilot BMCs, (Step 3) assist the BMCs in developing their PBRs, and (Step 4) provide support to the BMCs to successfully implement their function, for example, to negotiate with users the benefit sharing on the commercial utilisation of local Bio-Resources.

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