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Review

Medicinal and aromatic plants: Boon for enterprise development

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ABSTRACT

Medicinal and aromatic plants (MAPs) have been recognized as an important resource for health care and perfumery since antiquity. At present, there is a vast scope for enterprise development in this natural resource. The wealth of knowledge on the use of MAPs and different stages of MAPs sector, including collection, cultivation, processing, marketing, value addition and manufacturing, each stage on its own forms a base for an exclusive enterprise. Realizing the enormous potential for building up entrepreneurship in the MAPs sector, the present paper aims to review and discuss the ways and areas of concerns for MAPs-based enterprise development, including certification, value addition, marketing and policy frameworks.

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1. Introduction

Medicinal and aromatic plant species (MAPs) form a vital resource for enterprise development. Many MAPs have been deeply rooted and associated with human civilization and evolution from time immemorial (Kala, 2000, 2005; Gurib-Fakim, 2006). The historical and cultural acceptability and reliability of MAPs may place this precious natural resource in high demand while carving out enterprises in biodiversity (Kala, 2009, 2011a). The wealth of existing knowledge on the use of MAPs provides the basic strength for building an enterprise. Apart from the use of existing knowledge and documentation of MAPs, there are number of stages in MAPs sector from collection of MAPs from the wild to the farming, processing, marketing, value addition, manufacturing, drug development and capacity building. Each stage on its own forms the basis for an exclusive enterprise.

Realizing the scope of MAPs worldwide, many national and international organizations, including the United Nations Development Programme (UNDP), the World Health Organization (WHO), the World Wide Fund for Nature (WWF), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) Germany, Natural Resource Defense Council, and the Department for International Development (DFID) United Kingdom have come forward to support the

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MAPs sector. The World Bank has launched projects to support the farming and conservation of MAPs. Besides, the Government of India has been promoting cultivation of medicinal plants through various schemes and programs. The National Medicinal Plants Board (NMPB) was set up in 2000 for developing the medicinal plants sector in India and also creating synergies among various stakeholders (Kala and Sajwan, 2007). Realizing the vast scope of entrepreneurship in the MAPs sector, the present paper aims to review and discuss the ways and areas of concerns for MAPs-based enterprise development.

There are many issues and means of developing MAPs-based enterprise that include availability of raw materials, collection and cultivation of MAPs, supply chain management, manufacturing herbal products, branding, standardization, quality control, safety, efficacy, consumer's satisfaction and viability of enterprise. The present study focuses on the relatively less studied but extremely important aspects of MAPs-based enterprise such as certification and value addition, marketing, regulatory mechanism including laws and policies, herbal tourism and capacity building. This may enable entrepreneurs to chalk out successful business plan related to the MAPs sector.

2. MAPs for poverty reduction

The poor people generally live in remote rural areas that include areas rich in natural resources such as forests. These areas suffer from different combinations of problems, including governance, market and resource endowment failures (Deshingkar, 2010). In India, approximately 275 million people (27% of the total population) are known to live in the forest fringes and they mainly depend on forests for their livelihood (Sinha et al., 2010). Likewise, many countries including Brazil, Honduras, Malawi, Mozambique, Uganda, Indonesia and Vietnam are rich in forest cover. However, the positive correlation between high forest cover and high poverty rate (the percentage of the population that is poor) warrants that forests hardly help in reducing the rate of poverty (Sunderlin et al., 2008).

In view of managing risks and improving standards of living and household well-being, migration is quite high in remote areas and chronically poor groups. The final impacts of migration however are not always beneficial and may result in increasing risk of injury and exposure to diseases and noxious substances, as well as the negative impacts of long separation from home and family (Deshingkar, 2010). It is important to take forestry more seriously in development planning and policies. Besides, the value additions and innovations in forest resources, especially in MAPs, may help to mitigate poverty and associated problems.

Traditionally, MAPs are also associated with rural poor communities and hence known as the poor man's business. Over 6500 and about 700 species of MAPs are found in India and Nepal, respectively, including 250 endemics known to occur across biogeographic zones (Kala, 2005, 2009; UNEP, 2013). This vast resource of MAPs presents endless opportunities for establishing plant-based cosmetics and pharmaceutical enterprises. In India alone, 270 million people depend directly or indirectly on non-timber forest produce, including MAPs, for their livelihoods (Rasul et al., 2008). The growing demand for herbal-based environmental-friendly products helps in strengthening rural economies and improving livelihoods.

The rural poor use MAPs for their health care, livelihood and income improvement (Kala, 2007, 2010, 2015). Still, at present, MAPs harvesters are, generally, people who live at the margins of economic and political systems and have low levels of formal education (Cunningham, 1997). MAPs collection is considered to be attractive to rural poor, as it is presumed that such practices require low technical skills, and the resource is freely accessible, which can provide instant cash in times of need (Edwards, 1996). On the other hand, unfortunately, the arduous nature of collection work, low returns, and little prospects for generating sufficient capital assets to escape poverty discourage people from MAPs collection.

MAPs collectors may not engage in collection work if there are other options available. Moreover, MAPs are generally sold through long marketing chains with high transaction costs (Kala, 2011b, 2013a). Besides, most value added processes in MAPs are performed outside the community, which deprives the community of getting the actual shares of the benefits. These are some of the challenges that entrepreneurs must overcome in establishing any MAPs enterprise. Since the entrepreneur is driven by perception of opportunity and initiation of changes (Roy, 2011), the MAPs sector though possesses ample opportunities it demands innovations and innovative ideas to reap the benefits.

MAPs being a specialized produce need thorough investigations, especially in case of reducing poverty. MAPs acts as a safety nets which may prevent increasing poverty of poor by reducing their vulnerability to risk, particularly when subsistence agriculture or cash crops fail, or when illness occurs in the family (Marshall et al., 2007). MAPs provide an income as a gap filling during the non-agriculture season that supplements the farming and other income-generating activities. The benefits from MAPs depend on the seasonal and periodic availability. In view of sustainability of the MAPs based enterprises, farming of species, especially those who are in high demand and have become threatened, is needed. The stock of MAP species may be enriched through establishing herbal gardens, planting in the degraded forests and large-scale farming. Farming of MAPs is itself an enterprise, which can improve the living standard of its cultivator. Incorporations of innovations in traditional farming may help to grow the enterprise.

Mycorrhizal inoculation is one such innovative step which can improve the quality and bioactive phyto-constituent in medicinal plants. Scientific investigations claim the overall increase in the root biomass, seed weight, early flowering, and marginal increase in the bioactive phyto-constituents in the inoculated medicinal plants than the controlled ones. The mycorrhizal inoculated plants are known to facilitate the better uptake of nutrients, and such plants offer higher resistance to various soil and root born pathogens (Boon, 2011).

3. Resource management

Continuous efforts are being made by the Government of India for establishing and streamlining the traditional systems of therapy, especially Ayurveda, Unani, Siddha, Homeopathy and Naturopathy (Kala, 2008). In 1964, the Drugs and Cosmetics Act 1940 was amended with the inclusion of a chapter for licensing and manufacturing of Ayurveda, Siddha and Unani drugs for trade. The Central Council of Indian Medicine was established in 1971 as per the Indian Medicine Central Council Act, 1970, with an objective to prescribe minimum standards of education in Indian Systems of Medicine viz. Ayurveda, Siddha and Unani (http://ccimindia.org/introduction.html). In 1978, the Central Council for Research in Ayurvedic Sciences was established for formulation, coordination and development of research in Ayurveda (http://www.ccras.nic.in/). In 2000, the NMPB was set up for overall development of the medicinal plants sector (Kala and Sajwan, 2007). Accordingly, the State Medicinal Plants Board was set up in every state and union territory of India. The State Biodiversity Boards were also set up as per the Biological Diversity Act 2002, which help in documentation and management of MAPs by preparing People's Biodiversity Registers through Biodiversity Management Committees. The Biological Diversity Act 2002 not only deals with conservation of biodiversity