Chapter 43
Setting Priorities for the Development of Medicinal Plants Sector in J&K (Kashmir) and Their Progress Towards Nanotechnology

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ABSTRACT

Medicinal plants have assumed global importance in view of their ever increasing usage in health care system. This resurgence of interest in herbal medicine has largely been an outcome of the realization of ill effects which other systems are inflicting on human beings. In India more than 7500 of the plants are being regularly employed in treating different ailments. Nearly 40% of known medicinal plants of Kashmir Himalaya are used in the Indian Pharmaceutical Industry alone. However, the continued exploitation of this resource from natural habitats in the absence of any cultivation programme has resulted in the extirpation of many herbs which require formulation of pound policies on the part of Government. Besides to empower the local communities the development of General Awareness Programs and their execution at the farmer's field is highly desirable. This may involve the establishment of Medicinal Plant Conservation Parks. The combination of nanotechnology and traditional medicine may provide a very useful tool in designing future medicines with improved bioavailability profile.

DOI: 10.4018/978-1-5225-3158-6.ch043

1. INTRODUCTION AND BACKGROUND

Being essential for human health, medicinal plants provide a great motivation for conservation and management. According to an analysis, 25% of all prescriptions in the Organization for Economic Co-operation and Development (OECD) countries and upto 60% of those in Eastern Europe prove to consist of unmodified or slightly altered higher plant products (The Lancet, 1994). They embrace such important therapeutic categories as anticonceptives, steroids and muscle relaxants for anaesthesia and abdominal surgery (all made from the wild yam); quinine and aretemisinin against malaria; digitalis derivatives for heart failure; and the anticancer drugs vincristin /vinblastin, etoposide and taxol. These agents cannot be fully synthesized in a cost-effective manner. Therefore, their production requires reliable supplies of plant material either from cultivation or from the wild. However, the continuous extirpation of the natural resource will prohibit the unlimited usage of the herbs by the pharmaceutical industry. At the same time, habitats are declining and wild harvesting of medicinal plants is contributing to the pressure felt by ecosystems as a whole. Trade often magnifies this pressure by affecting biodiversity more widely. In fact, this state of affairs urged the health professionals and plant conservation specialists to admit through Chiang Mai Declaration that attention of the United Nations should urgently be drawn towards:

1. The vital importance of medicinal plants in healthcare.
2. The increasing and unacceptable loss of the medicinal plants due to habitat destruction and unsustainable harvesting practices.
3. That plant resources in one country are often of critical importance to other countries.
4. The significant economic value of medicinal plants used today and the great potential of the plant kingdom to provide new drugs.
5. The urgent need for international cooperation and coordination to establish programmes for conservation of medicinal plants to ensure that adequate quantities are available for future generation.

As such, we must identify priorities in the field of medicinal plant conservation and commercialization.

In the first formal meeting of the Medicinal Plants Specialist Group (MPSG), Nina Marshall (1996) noted that Special Survival Commission's (SSC) mission is to "conserve biodiversity by developing and executing programmes to study, save, restore and wisely manage species and their habitats". A sensible strategy for this focus is to develop a "TOP 50" listing of threatened medicinal plants. This can be achieved by adapting five steps which include: -

1. Identification of major sale sites.
2. Identification of medicinal species in trade
3. Preparation of a short list of species in trade
4. Short listing of priority traded species further on the basis of commonness or rarity *and lastly.*
5. Setting of priorities on the basis of phylogenetic distinctness.

With this objective in mind, a number of countries have already initiated exploration and evaluation of the medicinal herbs of their respective regions. The TRAFFIC Europe Project focuses on the exploitation of European indigenous medicinal plants. The project launched during 1995 involves survey and evaluation of medicinal plants of Spain, France, Hungary and Albania. A similar work is going on under