Export and import pattern of medicinal plants in India

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Abstract

Medicinal plants also play an important role in the lives of rural people in India with few health facilities. The plants that possess therapeutic properties or exert beneficial pharmacological effects on the animal body are generally designated as “Medicinal Plants”. They play a significant role in providing primary health care services to rural India. They serve as therapeutic agents as well as important raw materials for the manufacture of traditional and modern medicine. Substantial amount of foreign exchange can be earned by exporting medicinal plants to other countries. In India there are 880 medicinal plants species involved in all India trade. Of this, 48 species are exported and about 42 spices are imported. The Ministry of Environment and Forests, Government of India, reveals that there are over 8000 species of medicinal plants grown in the country. About 70 percent of these plants are found in the tropical forest; spread across the Western and Eastern Ghats. The Export-Import Bank of India, in its report for the year 1997, puts medicinal plants related trade in India at $5.5 billion and the same is growing rapidly. According to World Health Organisation (WHO) the international market of herbal products is around $6.2 billion, which is poised to grow to $5 trillion by the year 2050. Unfortunately, India’s share in the global medicinal plants related export trade is just 0.5 percent. The export of Medicinal plants is Rs.33453.23 lakhs during 1991-92 to 2002-2003. Its overall trend has been increased in 0.21 percent. And the average Import of Rs.2827.01 lakhs. Also its trend has been increased in 0.39 percent.

Keywords: Medicinal plants, herbs, green-plants.

Introduction

A medicinal plant is any plant which, in one or more of its organ, contains substance that can be used for therapeutic purpose or which is a precursor for synthesis of useful drugs. This definition of Medicinal Plant has been formulated by WHO. Cultivation of medicinal plants especially high value medicinal plants is creating new dimension in the field of Agriculture. The medicinal plant industry puts together the various facets of this multi-disciplinary industry and its global interest. The need for developing countries to acquire technologies and techniques for programmed cultivation of medicinal plant cultivation includes old philosophies, modern impact of traditional medicines, and methods of assessing the spontaneous, process technologies, phytochemical research and information sources. India has the oldest, richest and most diverse cultural traditions in the use of medicinal plants. According to a report by the WHO over 80 percent of the world population relies on traditional medicine, largely plant base, for primary healthcare. Medicinal plants are the local heritage with global importance, World is endowed with a rich wealth of medicinal plants. Herbs have always been the principal form of medicine in India and presently in they are becoming popular throughout the developed world, as people strive to stay healthy in the face of chronic stress and pollution, and to treat illness with medicines that work in concert with the body’s own defense. People in Europe, North America and Australia are consulting trained herbal professionals and are using the plant medicines. Medicinal plants also play an important role in the lives of rural people, particularly in the remote parts of developing countries with few health facilities.

Medicinal plants constitute an important natural wealth of a country. They play a significant role in providing primary health care services to rural people. They serve as therapeutic agents as well as important raw materials for the manufacture of traditional and modern medicine. Substantial amount of foreign exchange can be earned by exporting medicinal plants to other countries. In this way indigenous medicinal plants play significant role of an economy of a country. Past century there has been a rapid extension of the allopathic system of medical treatment in India. It generated commercial demand for pharmacopieial drugs and their products in India. Efforts have been made to introduce many of these drug plants to farmers. Several research institutes have undertaken studies on the cultivation practices of medicinal plants, which were found suitable and remunerative for commercial cultivation. The agronomic practices for growing Poppy, Isabgol, Senna, Cinchona, Ipecac, Belladonna, Ergot and few other have been developed and there is now localized cultivation of these medicinal plants commercially (Purohit and Vyas, 2005).

WHO suggest that increase in many infection diseases, not those which are newly emerging it can be linked to the range of environments threats this includes destruction of or encouragement in to wild life habits changes in the distribution availability of surface water, agriculture land use change including proliapration of both livestock and crops, uncontrolled urbanisation residents to pesticides chemical used to control certain diseases vector, climate variability and change migration and
international travel trade and accidental or international human interaction of pathogens. Forest is the important repositories compounds from wild organisms. However, it has been estimated that fewer than 5 percent of tropical plant species have been examined for their medicinal value. Human population rise and the demand for medicine increases the over exploitation of traditional medicines is of growing concern; particularly as at the same time continued environmental destruction means that available resources are decreasing.

**Methodology of the study**

This study used only secondary data through out its analysis. The concepts used in the study are medicinal plants Exports and Import so on. The statistic tools used in the study are Annual Growth and Linear Regression Models were applied to find out the trend pattern of export and import of medicinal plants in India.

**Annual growth rate formula:** The meausurement of India’s medicinal plants export growth is done through annual growth rate formula.

\[ y_t = y_0(1+g)^t \quad \text{(or)} \quad P_2 - P_1 \quad \frac{x 100}{P_1} \]

Where \( P_2 \) =Current year export; \( P_1 \) = previous year export

**Linear regression model:** A regression is a statistical analysis assessing the association between two variables. It is used to find the relationship between two variables. A regression of \( y \) on \( x \) is a way of predicting values of \( y \) when values of \( x \) are given.

\[ y = a + bx \]

where \( a = \frac{\sum y_i - b \sum x_i}{n} \) and \( b = \frac{\sum x_i y_i - \frac{1}{n} \sum x_i \sum y_i}{\sum x_i^2 - \frac{1}{n} (\sum x_i)^2} \)

Where \( x \) and \( y \) are the variables; \( b \) = The slope of the regression line; \( a \) = The intercept point of the regression line and the y axis; \( N \) = Number of values or elements; \( X = \) First Score; \( Y = \) Second Score; \( \Sigma X = \) Sum of the product of first and Second Scores; \( \Sigma Y = \) Sum of Second Scores; \( \Sigma X^2 = \) Sum of square First Scores; \( n \) being the number of data pairs; \( a \) and \( b \) are known as the linear regression coefficients. The independent variable is the regressor, and the dependent variables are called regressand.

**India’s export of medicinal plants**

According to EXIM study, there are 880 medicinal plants species involved in all India trade. Of this, 48 species are exported and about 42 spices are imported.

Another survey conducted by the Ministry of Environment and Forests, Government of India, reveals that there are over 8000 species of medicinal plants known in the country. About 70 percent of these plants are found in the tropical forests; spread across the Western and Eastern Ghats. The Export-Import Bank of India, in its report for the year 1997, puts medicinal plants related trade in India at $5.5 billion and the same is growing rapidly.

According to WHO, the international market of herbal products is around $6.2 billion, which is poised to grow to $5 trillion by the year 2050. Unfortunately, India’s share in the global medicinal plants related export trade is just 0.5 percent.

The World Bank in its latest report on the potential of India’s forests to generate income has praised efforts of Madhya Pradesh and Assam in marketing medicinal plants. However, the report states that the country’s natural resources are not being fully exploited. India’s share in the global export of medicinal plants just 0.52 percent not withstanding its having 15,000 species of such plant. The market structure for medicinal plants in most states of the country is weak and focuses largely on local trading. Over the past 10 years there has been a considerable interest in the use of herbal medicines in the world.

Regarding the export of medicinal plants India’s contribution to the international market is comparatively very low. Utilizing our biodiversity and proper planning, India products can very enter the overseas markets. This can be achieved only through proper development of medicinal plants, standardization of the extracts and keeping the quality. WHO has recognized the effectiveness of traditional system of medicinal and its safety (Tannan and Tannan, 2006).

**Country wise export of medicinal plants**

Table 1 shows that India’s exports of medicinal plants in 2004-05 declined by 12.92 percent over the previous year when the same rose-dived to Rs.263.08 crore as against Rs.302.11 crore in the previous year. India’s exports have continuously been showing a declining trend from Rs.334.17 crore in 2002-03 to Rs.302.11 crore in 2003-04 and Rs.263.08 crore in 2004-05. USA
India is the largest exporter, with a significant growth in the export potential of medicinal plants in this region (The Natural resources India Foundation (NRIF) Pilot study on mechanism for sustainable development and promotion of herbal and medicinal plants in the state of Uttaranchal (India) forwarded to ser division, planning commission, government of India. New Delhi.

<table>
<thead>
<tr>
<th>Year</th>
<th>Export Quantity (Tonns)</th>
<th>Export Value (Rs. in lakhs)</th>
<th>Growth increasing/decreasing</th>
<th>Import Quantity (Tonns)</th>
<th>Import Value (Rs. in lakhs)</th>
<th>Growth increasing/decreasing</th>
</tr>
</thead>
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<tr>
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<td>387444.43</td>
<td>19485.66</td>
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<td>3566.97</td>
<td>1426.16</td>
<td>-</td>
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<td>37405.18</td>
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<td>2887.97</td>
<td>1629.02</td>
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<td>32948.78</td>
<td>22191.03</td>
<td>9.73</td>
<td>4341.92</td>
<td>1346.36</td>
<td>-20.99</td>
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<td>1994-95</td>
<td>35953.07</td>
<td>28280.73</td>
<td>21.53</td>
<td>4467.34</td>
<td>1662.13</td>
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<tr>
<td>1995-96</td>
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<td>31301.50</td>
<td>9.65</td>
<td>2623.70</td>
<td>2032.45</td>
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<tr>
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<td>42592.97</td>
<td>40814.00</td>
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<td>40754.97</td>
<td>41671.63</td>
<td>2.06</td>
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<td>33953.64</td>
<td>-47.39</td>
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<td>2001-02</td>
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<td>36160.45</td>
<td>6.10</td>
<td>5378.15</td>
<td>2550.98</td>
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<td>2002-03</td>
<td>40168.42</td>
<td>31645.13</td>
<td>-14.27</td>
<td>6673.46</td>
<td>3857.84</td>
<td>33.88</td>
</tr>
<tr>
<td>Average</td>
<td>68957.65</td>
<td>33453.23</td>
<td>-</td>
<td>4864.60</td>
<td>2827.01</td>
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<td>R²</td>
<td>0.21</td>
<td>0.42</td>
<td>0.65</td>
<td>0.39</td>
<td>-</td>
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</tbody>
</table>

Source: Natural resources India foundation (NRIF) Pilot study on mechanism for sustainable development and promotion of herbal and medicinal plants in the state of Uttaranchal (India) New Delhi.

Table 2. Import and export structure in India during the period 1991-92 to 2002-03.


Continuous to be the largest market for Indian medicinal plants. However, exports to this market have shown the same trend-declining to Rs.98.51 crores in 2004-05 as against Rs.111.92 crores in 2003-04 and 135.63 crores in 2002-03. The other market showing a declining trend in 2004-05 over the previous year included Japan (36.13%), Hong Kong (33.30%), Taiwan (31.55%) and France (17.85%). On the other hand, the market showing a significant growth included UAE (83.04%) and Pakistan (26.20%).

Tamil Nadu Sate Tuticorin Region at present, medicinal plants and herbal extracts worth Rs.40 crores are exported annually through the port, it will augment the export potential of medicinal plants in this region (The Hindu, February 28th 2006). India is the largest exporter, next only to China, accounting for about 13 percent of the global exports. USA is the principal market for Indian medicinal plants, accounting for 50 percent of exports. Psyllium husk (Isobgul husk) emerged as the largest item of exports registering a record growth of 162.80 percent when the same reached a level of Rs.154 crores against Rs.58.60 crores. The export of Jajoba seed, which happened to be the largest item of export in the year 2003-04, declined drastically in 2004-05 by reaching a low level of Rs.8.53 crores as against Rs.89.07 crores in 2003-04, registering thereby a steep decline by 90.42 percent. The other item showing a steep decline during the period comprised Garcenia (79.59%) Gymnema powder (50%), other fresh/dried cut. Crushed and powdered leaves (39.36%) Phyrethrum (27.98%) Senna leaves and pods (24.32%), and the fresh/dried cut, crushed and powered bark, husk &rind (20.59%). On the other hand, the plants registering a phenomenal growth comprised galangal rhizomes and roots (364.10%) and basil, Hyasop, Rosemary sage, Svyory (194.74%).

Conclusion

In India average export of Medicinal plants is Rs.33453.23 lakhs during 1991-92 to 2002-2003. Its overall trend has been increased in 0.21 percent. And the average Import of Rs.2827.01 lakhs. Also its trend has been increased in 0.39 percent.

Suggestions

1. The export subsidy for the medicinal plants should be hiked to increase production and supply.
2. The awareness campaign should be connected to the cultivators every year.
3. Allocate funds for conducting Research and Development not only to improve varieties of medicinal plants and enhance their availability but also establish their efficacy in various clinical conditions.

4. Set up export promotion zones exclusively for medicinal plants and herbal products in potential States like Gujarat, Rajasthan, Haryana, Tamil Nadu and Andhra Pradesh, which have gained significantly in cultivation and processing of medicinal plants and herbs.

5. Harvesting, drying and storage of medicinal plants must ensure the purity and safety against microbial contamination and quality deterioration.

6. There should be a linkage between growers and pharmaceutical companies to ensure marketability of raw drugs.

7. The village cultivation of medicinal plants should ensure health, nutrition and environmental security.

8. Immediate approach should be bestowed to establish the State Medicinal Plants Board in each State of the Country along with training facilities is available in the state Agricultural Department, Forest Department and other allied NGOs etc.

9. The farmers normally used traditional manure. The Government should propagate through to various media and encourage the use of modern chemical fertilizers for the cultivation of medicinal plants.

10. The government should create marketing facilities for these plants.

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