Export target markets of medicinal and aromatic plants

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ABSTRACT

Medicinal and aromatic plants play a significant role in meeting the needs of the traditional medicine which, are found both in domestic and overseas markets. The aim of this research is prioritization of medicinal and aromatic plants importing countries using relative import advantage index and five other indices during the period of 2000–2014. The structure of the global import market for medicinal and aromatic plants was also examined using the Herfindahl-Hirschman index. Main findings revealed that Singapore, Japan, Germany, Malaysia, and the U.S. have the highest importing advantage. The structure of global market of medicinal and aromatic plants is mostly competitive. Designing export promotion strategies to markets with higher relative import advantage is recommended.

1. Introduction

Medicinal and aromatic plants (MAPs) play a great role in supply of food supplements for personal care of the mankind alongside the therapeutically active substances. Thus medicinal plant based industry is a promising sector and source of enormous economic growth potential (Gunjan et al., 2015). The developed countries are using medicinal systems that involve the use of herbal drugs and remedies. Most of the medicinal plant material in the world market originates from these countries, although their export volume is small. As world demand for medicinal plants increases, there is an ample opportunity for these countries to expand their global export. The annual volume of global trade in medicinal plant materials in 90's amounted to an average of 400,000 metric tons, valued at $1.2 billion (Lange, 2001). Nearly 30 percent of the MAPs global trade (under HS 1211) is made up by top two countries of the import and export. China and India from Asia; Egypt and Morocco from Africa; Poland, Bulgaria and Albania from Europe; Chile and Peru from South America are important supply sources. The U.S., Japan and Europe are the major consumers of the world (Vasisht et al., 2016). Liquorice roots, Ginseng roots and Tragacanth are among the top MAPs traded items. About 80 percent of medicinal plants supply in the world market is sourced from the wild collections (Vasisht and Kumar, 2002; UN Comtrade, 2016).

This growing trend in MAPs market is also indicated in other reports. According to World Health Organization estimate in 1991, the herbal medicine market in European countries was about $6 billion,

with Germany accounting for $3 billion, France $1.6 billion and Italy $0.6 billion, while in other countries was $0.8 billion. In 1996, this market value grew to about $10 billion, the U.S. share was about $4 billion, India about $1.0 billion and other countries was $5.0 billion. In 1997, the European market value alone reached about $7.0 billion with 50 percent share for German market (Harvey, 1999).The overall global market for botanical and plant-derived drugs was valued at $23.2 billion in 2013, $24.4 billion in 2014 and $25.6 billion in 2015. This value is expected to reach $35.4 billion in 2020 with a compound annual growth rate of 6.6% from 2015 to 2020 (BCC research, 2015).

MAPs is extremely important for health-care needs of three quarters of the world's population living in the developing countries. The use of MAPs, whether in most indigenous form to make decoctions whether or in most modern form of herbal cosmetics, is steadily increasing. Numerous new avenues have emerged for innovative use of medicinal plants. Therefore, before considering the supply sources of medicinal plants and mechanics of the trade and export, it is essential to have an understanding of demand points of medicinal plants and its target market.

Target marketing is a key marketing concept. Although, the operation arena of marketers is changing, the target market selection is still a critical issue which must remain on the strategic agenda. What is needed is a systematic analysis of market attractiveness criteria, which are relevant to all parties in the economic chain (Dibb and Simkin, 1998). The identification and selection of target market groups influence and often directly determine all of ensuing decisions regarding

types of services, distribution, pricing, and communication. Selecting target market is a two-stage process. The first stage is to divide a market into potential target markets or segments, a process known as market segmentation. It recognizes that different client groups have different demands that may justify the development of different services and/or marketing mixes to expedite agency's exchange with them. The second stage is to select which segment or segments the agency will endeavor to serve with a particular offering (Crompton, 1983). A target marketing approach requires focusing on one or more selected market segments and the development of separate marketing programs for each segment (Lewison and Hawes, 2007).

The use of target marketing is based on the premise that those who are targeted have a pronounced affinity for the product or brand (Aaker, 1999). By highlighting this affinity, marketers will successfully meet their desired outcome such as purchase intent, attitude towards the ad, brand, and product. One explanation of why this targeting works is due to the shared cultural knowledge displayed in the marketing communication (Aaker et al., 2000; Brumbaugh, 1997). Target market increases firm's chances of success by selecting a well-defined group of potentially profitable customers. In other words, the success of targeted marketing is driven by a consumers' inference of similarity between some aspects of firm's communication effort (Hutt and Speh, 2010; Whittler, 1989). Target market is a relatively homogeneous group of people having similar service preferences with whom an agency seeks to exchange (Crompton, 1983). It is the process of allocating resources effectively by focusing marketing efforts on a selected part of the total market (Zikmund and d'Amico, 2001).

Furthermore, for marketing practitioners seeking attractive target markets, the question of definition remains a fundamental problem (Dibb and Simkin, 1998). It is important to know that attractive market is one where there is potential growth, there are few players, the competition is weak, and the customer has an unsatisfied need for the product to be supplied. Thus, decisions about target market attractiveness must be made within the context of environmental factors, competitive conditions and available resources (Cooper, 1993).

The literature on identifying MAPs' target market is very poor and most of the previous works have only focused on analysis of trade flows. All Eastern and Southeastern European countries are often cheap source and rich in abundance of medicinal and aromatic plants for both traditional domestic use and export. The production of this plant material relies to a large degree on wild-collection with an estimated annual collection of 30,000–40,000 tons of dry herbs (Lange, 1997, 1998, 2001, 2002, 2003, 2004a, 2004b, 2004c). UN Comtrade database has recorded trade data for approximately 180 countries since 1962 (Lange, 2006). According to data for 2015, total global MAPs' import and export value was $3.02 and $3.18 billion, respectively (UN Comtrade, 2016). In India (as one of the main MAPs' exporters) there are 880 medicinal plants species involved in all Indian trade, where 48 species are exported and about 42 spices are imported. The Export-Import Bank of India, in its annual report for 1997, puts medicinal plants related trade in India at $5.5 billion (Kumar and Janagam, 2011). China as another major player in MAPs market, exported more than 1.3 billion kg of MAPs in 2013 with a value exceeding $5 billion. (ITC, 2016). Ozguven et al. (2005) reported that 447 MAPs' species were traded in Turkey where 139 species entered to world market. The Iranian herbal market (Shirinbakhsh and Alikhan, 2013), indicated the existence of relative comparative advantage for 50 percent of all MAPs' species. Although, The Iranian export competitiveness of these products has noticeably reduced. As the production of MAPs still relies to a large extent on wild-collection (Bhattarai, 1997; He and Ning, 1997; Lange, 1998, 2002; Robbins, 1999; Kupke et al., 2000; Kathe et al., 2003), profound knowledge of their trade flows and market structure, as well as, their origin is essential for assessing its trade impacts on the concerned plant populations (Lange et al., 2006).

Due to rapidly increasing importance of MAPs' trade in last decades, main motivation of preset study is lack of knowledge on structure and prioritization of MAPs' target markets that can be proper guide for marketers and countries investing on its export.

2. Materials and methods

2.1. Relative import advantage index (RMA)

The relative importance of an industry in the total trade is usually measured by the revealed comparative advantage (RCA) or Balassa index (Ferto and Hubbard, 2003; Latruffe, 2010; Wijnands et al., 2008). If it is related to the export, it measures the export share of a country in the total world export of a given product relative to the country's total export share in the world export of all products. Conversely, if it is related to the import, it measures the import share of a country in the total world import of a given product relative to the country's total import share in the world import of all products. The relative import advantage (RMA) index is as follows:

$$RMA_{ict} = \frac{(M_{icj}/M_{iwt})}{(MT_{cj}/MT_{wt})} \tag{1}$$

RMA_{ict} The RMA index for industry i, country c in period t.
M_{icj} The import value of industry i, country c in period t.
M_{iwt} The import value of industry i in the world in period t.
MT_{cj} The total import value of all industries of country c in period t.
MT_{wt} The total import value of all industries in the world in period t.

A value below unity indicates that country imports are relatively less than the world average and can be regarded as an indicator of competitive advantage. A value above unity indicates high import level or re-export of products due to comparative advantage of other sectors or country's location (Vollrath, 1991; OECD, 2015). In addition to RMA, four other indicators are used to prioritize the global target markets including; m_1 as average import values during a period, m_2 share of global import values for each country, m_3 the annual import share of a product in a country m_5 is the average growth rate of import values (in percent) for each country. Table 1 shows the characteristics and definitions of the above indices.

2.2. Prioritization of target markets

Countries importing MAPs were prioritized based on five import potential indicators that show the current demand situation of importing countries. In order to get more accuracy and provide better understanding of the market characteristics, the weighted average of the above mentioned indices for each country was calculated as follows:

Table 1
The target markets' determining Indices.
Source: (Alamdarloo and Hassani, 2009)

Index	Definition
$m_1 = \overline{M}_{ij}$	The average import value of commodity i by country j in period t.
$m_2 = \left[M_{ij}/M_w \right] \times 100$	The share of import value of commodity i by country j to the world import value of that commodity.
$m_3 = M_{ij}/M_j$	The annual ratio of import value of commodity i by country j to the total import value of country j.
$m_4 = RMA_{ij} = \dfrac{\left(M_{ij}/M_j \right)}{\left(M_{iw}/M_w \right)}$	The relative import advantage of country j for commodity i.
$m_5 = \left[\sqrt[t]{\left(M_{ijt}/M_{ij1} \right)} - 1 \right] \times 100$	The average annual growth rate of import value for commodity i by country j in period t.
$m_6 = \overline{M} = \sum_{i=1}^{5} w_i M_i / \sum_{i=1}^{5} w_i$	The weighted average of the 5 indices for country j.