

# Collaborations and Sustainability in Medicinal and Aromatic Plants Industry: Examining the Business Communication Amongst Stakeholders in MAPs Industry

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## Abstract

The aim of this study is to examine collaborative actions and sustainability in the medicinal and aromatic plants (MAPs) industry. A lot of attention was given to the MAPs industry actors and foreign direct investments. Undoubtedly, the development trend of MAPs industry is tightly associated with the supply sources of farmers and gatherers. Overproduction of MAPs products including organic and cultivated products is very much damaging the biodiversity, food industry and environment. The overlapping of common mission, vision and objectives of industrial partners and stakeholders are quite crucial to overcome industrial, environmental and quality issues. The market share of MAPs products has become harshly competitive. Governmental bodies also have some sectoral plans for cultivation of products and intervention to the whole sector. 'Business – academia – society' relationships were argued in order to highlight to what extent scientific investigations and research projects in the MAPs industry can be effective for structuring network database of the whole farmers and gatherers' information, taking the MAPs industry under the control of State's mechanism (e.g. Ministry of Agriculture) through public sector – private sector – civil society collaborations (i.e. agricultural hybridity). Direct contacts and strong ties of corporations with Ministry of Agriculture may influence more flexibly to draw a direction of the herbs and spices industry in general and MAPs products trading in particular. Local stakeholders' engagement and agricultural hybridity are likely to strengthen local villagers and gatherers for combating poverty, ensuring more prosperity, cleaner environment and sustainable development, as well as providing mutual benefits and reciprocal strategic interests in frame of universal business ethics. Moreover, setting up long-range partnerships and cooperation with foreign partners as stakeholders and interest groups of the aggregate production and marketing process affect the sustainability of MAPs industry, significantly. From the corporations' perspective, the main objectives of foreign corporations are as follows: i) bringing the MAPs products in traceability whereby these can be sourced directly from farmers and gatherers through local partners; ii) identifying suppliers who have the necessary cleaning lines with the capability to meet the raw material specifications; iii) in the long run working with local suppliers for establishing grinding facilities to provide the finished products.

In this study, case study research and semi-structured interviews were followed in the context of paradigmatic research methodology. The authors assured that the replies of the corporations' representatives were kept confidential. Likewise, the corporations' affiliations were coded in order to undertake the investigation with ethical beliefs and moral conducts.

**Keywords:** Collaboration, Sustainability, MAPs Industry, Stakeholders

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## INTRODUCTION

The history of medicinal and aromatic plants (MAPs) utilisation dates back to the beginnings of mankind. People have used these plants since earliest times. These plants played a crucial role in the development of contemporary civilisation as spices. The lives of people and plants are more entwined than is often realised. Some herbs have the power to change our physiological functioning, they have revolutionised medicine, ensured fortunes for those who grow, process and treat them, and in many cases have supposed social and religious significance. Herbs have changed the course of history and in economic terms have greater importance as ingredients in food and medicine, garden plants, cosmetics and perfumery. MAPs have a broad use area, ranging from household use with simple tools, to use in pharmaceuticals, food industry, in that smoke-cigarette, in alcoholic and non-alcoholic drinks, in the varnishes industry of paint and chemical industry. They are used not merely essences that are based on their scented products, but also their special ingredients (Asllani, 2004: 20; Máthé, 2015; Peter, 2004: 1).

MAPs have become industrial products with new aspects like phytotherapy and veterinary medicinal uses, aromatherapy, nutraceuticals, cosmeceuticals, and animal welfare uses widening the scope of the utilisation. New, innovative, value added applications involve their use in functional foods, animal husbandry, as well as plant protection in agriculture. In this respect, the versatile utilisation of essential oils is promising. Contemporary methods in production and uses provided a considerable focus on the importance of quality, safety and efficacy of both MAPs and their produce (Máthé, 2015).

Considering sustainability of the MAPs based enterprises, farming of species that are in high demand and have become threatened, is needed for the sustainable development of MAPs industry as a whole (Kala, 2015: 135). Sustainability is more commonly argued from an ecological perspective in terms of plant populations and ecosystem. A sustainable system for harvesting MAPs is one where fruits, seeds and/or other plant parts can be harvested indefinitely from a set field without detrimental effect on the structure and dynamics on the harvested plant populations (Schippmann et al., 2006: 76). For entrepreneurs, the resource augmentation is required for meeting the need of escalating demand of MAPs and diminishing the gap amongst demand and supply. Cultivation of selected MAPs in the private land, wasteland and outside forest areas may augment the MAPs resources. The available practices for sustainable harvesting of MAPs may help to manage the resource if it is followed appropriately (Kala, 2015: 136). The recognition that the current ways of exploiting the earth's natural resources are not sustainable, logically leads to the consequence that we need to change the way we do things and vice versa. We need to change the way we use resources, produce products, make our preferences, and share our wealth, and so on. And this change is

inescapably associated with social innovation and scientific research projects. Sustainable development therefore needs scientific research projects to realise change. This change is also related to the strategic interests of corporations and their stakeholders. Organisations are moving towards sustainability and this affects the projects they undertake and the way they execute their projects. Thus, sustainability has reshaped the profession of project management and corporate social responsibility (CSR) related projects (Silvius et al., 2017: 3). In this context, collaborations between different MAPs industry actors, stakeholders, governmental bodies, academic institutions, local farmers and gatherers have a vital role for attaining a more sustainable MAPs industry and strengthening functionality of industrial network.

Various MAPs industry actors, stakeholders and organisations and their members exchange information, form mutual understandings, coordinate activities, exercise influence, generate and maintain systems of beliefs, symbols, and values through effective communication. Communication has been called the “nervous system of any organised group” and the “glue” that holds organisations together (Poole, 2017a). According to another description, “communication is the transmission of information and meaning from one individual or group to another” (Guffey and Loewy, 2013: 7). Successful mergers, acquisitions and global alliances, including international joint ventures, long-range partnerships and strong collaborations depend on the successful transfer of knowledge so that learning can occur, ideally on both sides of the cooperation. The barriers that inhibit and the bonds that enforce communication and knowledge transfer across organisational boundaries can critically affect the exchanges across them (McNett, 2017).

There are different types of communication. This research encapsulates communication with stakeholders of corporations that vary in various scales. In this framework, business communication has a binding implication and crucial role in cooperation of managers and representatives.

## **1. Research Methodology**

In this study, case study research, semi-structured interviews and document reviews were followed in the context of paradigmatic research methodology. The authors assured that the replies of the corporations’ representatives, academics and public authorities were kept confidential. Likewise, the corporations’ affiliations were coded in order to undertake the investigation with ethical beliefs and moral conducts.

Case study can demonstrably exhibit coherence (i.e. consistency, synchronism, logic, and being all of a piece) dependability and confirmability. In a sense, a case study is never finished; it is merely due. A case study research indicates the multiple realities constructed by the respondents in the inquiry; illuminates in what directions it has taken account of the mutual forming of phenomenal

characteristics in that site; rejects generalisability and the drawing of nomothetic consequences; takes into account the value influences; impinges on the inquiry, including the values that dictated the preference of an issue, the values that impelled the preference of theoretical argumentation or context. In other words, a case study research is related to theoretical structuring and it is based on the requirement to understand a real-life phenomenon with investigators gaining new holistic and in-depth insights, clarifications and remarks regarding to formerly uncertain rich experiences of practitioners that may stem from creative exploration and the design of investigation (Aliu et al., 2016: 5-6).

Case study method was applied to the corporations operating in the MAPs industry to illustrate the collaborations they have carried out with their stakeholders. Likewise, the study examines the cooperation and joint actions of corporations, governmental and non-governmental institutions in various MAPs projects.

The authors communicated with 86 people (39 people working at 20 different corporations; 15 people working at 6 different quality and standardisation organisations; 14 people working at 3 different logistics companies and 18 people working independently as collectors) and conducted semi-structured interviews with them via face-to-face discussion and e-mail. The responses generated from the oral discussion and e-mails were prepared in a text transcription. According to the responses, most important aspects of MAPs industry were highlighted and compared with the literature review of MAPs industry to find out the gap amongst the theory and practice dimensions.

## **2. Collaboration and Sustainability In MAPs Industry**

Sustainability via collaboration in MAPs industry is a process involving all types of interactions between MAPs industry actors and stakeholders in many contexts – i.e. people who may not agree with one another. In dealing with inconveniences, misunderstandings and technical conflicts regarding how to organise, consume and produce in responsible ways, learning does not take place in a vacuum but rather in rich social contexts with innumerable vantage points, interests, values, power positions, beliefs, existential needs and inequities. One of the most effective tools is people's capability to collaborate for solving problems, determining plans, implementing, assessing, and redesigning industrial applications in an ongoing process. Collaborative efforts have been developed along with our knowledge of the challenges and issues that are mostly encountered by MAPs industry actors and stakeholders. Inter-organisational collaboration efforts cross governments, scientific disciplines, geographic boundaries, and communities and seek to build on the strengths of various stakeholders working together (e.g. businesses, governments, NGOs, communities) to plan and implement interventions and responses (Allen, 2016: 241-242).

Apart from the use of existing knowledge and documentation of MAPs, there are number of stages in MAPs industry from gathering of MAPs from the wild to the farming, processing, marketing, value addition, manufacturing, drug development and capacity building. Each stage on its own shapes the basis for an exclusive enterprise. Realising the scope of MAPs worldwide, many national and international organisations, including the United Nations Development Programme (UNDP), the World Health Organisation (WHO), the World Wide Fund for Nature (WWF), German Organisation for Technical Cooperation (*Deutsche Gesellschaft für Technische Zusammenarbeit – GTZ*), Natural Resource Defence Council, and the UK Department for International Development (DFID) have come forward to support the MAPs sector.

In a more extensive perspective, there are various organisations and institutions that can be considered as MAPs industry stakeholders. These can be listed as such: European Agency for the Evaluation of Medicinal Products; European Diatom Database Initiative (EDDI); European Environment Agency (EEA); European Nature Information System (EUNIS); EUROPEAID; United States Environmental Protection Agency (US-EPA); American Public Health Association (APHA); US Agency for International Development (USAID); Food and Agriculture Organization (FAO); Fairtrade Labelling Organisations International; Centre for Global Development; Fish and Wildlife Associates, Inc., Whittier, NC; International Federation of Organic Agricultural Movements; International Atomic Energy Agency (IAEA); International Dark-Sky Association (IDA); International Union for Conservation of Nature (IUCN); Regional Environmental Centre (REC); International Council for Medicinal and Aromatic Plants (ICMAP); Swiss Research Institute for Medicinal and Aromatic Plants (MEDIPLANT); Scottish Environmental Protection Agency (SEPA); Indian National Research Centre for Medicinal and Aromatic Plants; Central Institute of Medicinal and Aromatic Plants (CIMAP); Federation of Medicinal and Aromatic Plants Stakeholders; International Commission for Non-Ionizing Radiation Protection (ICNIRP); United Nations Economic Commission for Europe (UNECEE); United Nations Environment Programme (UNEP); United Nations Conference on Trade and Development (UNCTAD); the Forest Stewardship Council; Saskatchewan Herb and Spices Association; International Social and Environmental Accreditation and Labelling (ISEAL) Alliance and so on (For a more detailed list, see Annex 1). There are also many indexes that facilitate investigations conducted in the MAPs research field: Aromatic and Medicinal Plants Index (AMPI); Benthic Index of Biotic Integrity (B-IBI); Genetic Diatom Index (GDI); Index of Biological Integrity (IBI); Lincoln Quality Index (LQI); and Trend Biotic Index (TBI); Database of Medicinal and Aromatic Plants (DOMAP); Springer Nature Index. Moreover, the World Bank has launched

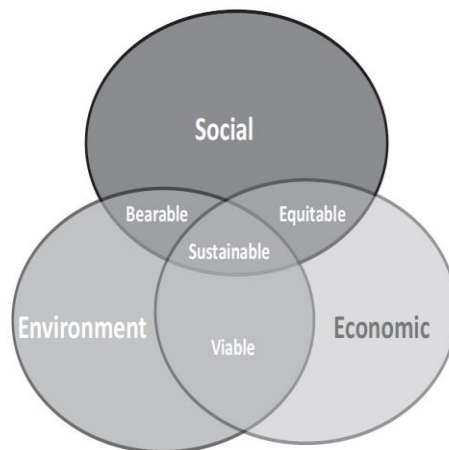
scientific research projects to support the farming and conservation of MAPs (Kala, 2015: 134-135). As a result of the effective cooperation of all these institutions, sustainability notion has begun to be considered more important in the MAPs industry.

Sustainability can be defined as “adopting business strategies and activities that meet the needs of the corporations and their stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future’ (Silvius et al., 2017: 1-2).

The use of and trade in MAPs is an issue where conservation and development interests meet and where sustainability can only be achieved by sharing responsibilities and acting jointly (Kathe et al., 2003: 7).

The quality of environment, water, air and soil quality and biological diversity depend on the advantage and support of the proper management of environmental conservation policies, as well as preventive measures towards environmental degradation, pollution and human healthcare. This is a prerequisite for meeting the requirements deriving from national or international standards (Miho, 2011: 9). In this context, environmental monitoring provides information on the current situation and conditions of environment; monitoring discovers changes that may occur in the environment by human activity or other causes; during the monitoring the quality of environment is tested and necessary measures are taken to improve the situation and conditions (Miho, 2011: 17).

**Figure 1: The Three Dimensions of Sustainability**

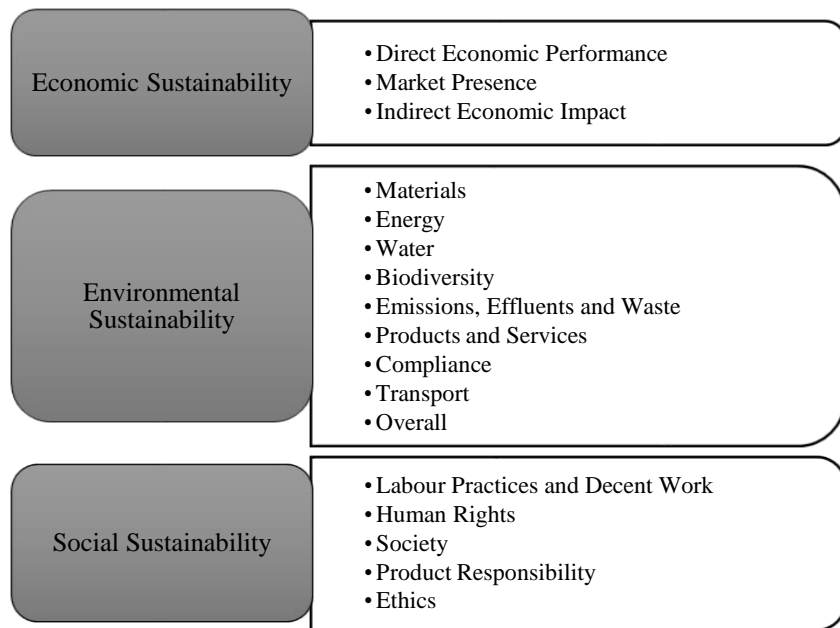


**Source:** Silvius et al., 2017.

The notion of sustainability is based on synthesis or harmony between the three dimensions: *social equity*, *environmental protection* and *economic prosperity*. In the business world these three dimensions are often called

“people, planet, profit (PPP).” The PPP abbreviation implies that a corporation ought to take its decisions with consideration of people – its employees as well as other stakeholders and society – and the planet – that is, the environment – as well as profit. Yet the primary objective of most companies is to generate shareholder value, the “profit” dimension is well represented in business strategies and policies. Hence, companies are organised with a strong orientation towards the economic perspective (Silvius et al., 2017: 9). In Table 1, three dimensions of sustainability were categorised as economic sustainability, environmental sustainability and social sustainability.

**Figure 2: Overview of Indicators in the Sustainability Reporting Guidelines**



**Source:** Silvius et al., 2017.

According to Figure 2, economic sustainability title covers direct economic performance, market presence and indirect economic impact. Environmental sustainability title comprises materials, energy, water, biodiversity, emissions, effluents and waste, products and services, compliance, transport and overall issues. Social sustainability title encapsulates labour practices and decent work, human rights, society, product responsibility and ethics.

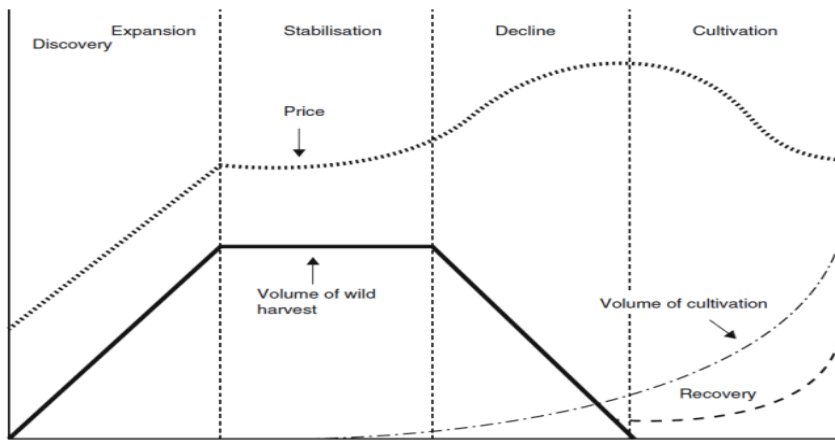
In the light of aforementioned clarifications, sustainable development needs to take into account the use of biological and natural resources for satisfying human needs; however, it must be made in accordance with environmental protection so that these needs are satisfied not only for the present generations but for future generations. Sustainable development combines the carrying

capacity of a natural ecosystem with the demands and other social desires of societies. Similar to what is argued above, the field of sustainable development can be split into three constituent parts – i.e. environmental sustainability, economic sustainability and social-political consistency (Miho, 2011: 21).

Global cooperation in biotechnology progresses in an inappropriate fashion that solely benefits the bio-industry and negates economic interests of biodiversity-rich countries and traditional-knowledge-holding communities. The knowledge and material ensured by the developing states and its communities are gained at low cost by the bio-industry; whereas, the outcomes of research and development (R&D) – pharmaceuticals – become subject of intellectual property (particularly patents) rights, and might be commercialised exclusively by the right-holders. This point turns on distributive justice. Furthermore, some find that industrial and commercial actions – such as R&D, exploitation of pharmaceuticals, and the technological progress so attained – ought to be conducted in a manner that is not impartial but contributively to other societal needs – such as conservation of diversity. This perspective hinges on the sustainability of these actions (Koopman, 2006: 133).

Another thought derived from contemporary business science is that collaboration amongst rivals improves the competitiveness of MAPs industry as a whole. Hence, progressive companies invest in formal and informal information systems between participants in the MAPs industry, they allocate ample money for translators and interpreters within their own companies to ease information sharing, they invest in skill-building in partner companies and agencies, and they invest in systems to expand transmission of information to a broader community, thus enhancing market transparency. Forward-looking corporations invest in internet access and web presence for their business partners in developing countries (Brown, 2006: 72). Collaborations amongst global corporations and local stakeholders are indispensable because sustainable development requires stability, affordable prices, good quality products, honest and trustworthy relationships with suppliers and so on.



**Figure 3: Transition Phases from Wild Harvesting to Cultivation**

Source: Dajic-Stevanovic and Pljevljakusic, 2015: 149.

Figure 3 indicates that after wild resources decline with over-harvesting, raw material prices increase and cultivation becomes economically feasible; more resilient species can recover (Dajic-Stevanovic and Pljevljakusic, 2015).

According to Lange (2006), most of the market share in 1991–2003 was associated with 12 states, globally. The reported annual global export amounted on average to 467,000 tonnes (value 1.2 billion USD) (Mathe, 2015: 133). Wild-collection takes place in states with low income level, or in states with large unprivileged social groups where gathering is often an additional or even the merely income. Nepal, Mexico, Turkey, Albania and Bulgaria can be given as examples. Consequently, plant populations are often locally over-exploited. Overall, these states are a very cheap source for botanicals. The relatively low prices for wild-harvested plant material is one fact to prevent the rapid incline of the share of cultivated plant material in trade which is much more expensive (Lange, 2004: 184).

In other words, MAPs by nature can be both wild harvested and cultivated. MAPs are harvested by locals and sold to persons in the next segment of the value chain (consolidators or processor/ exporter). Cultivation of MAPs has been on the rise due to shortage of wild harvested MAPs, many times due to unsustainable harvesting practices of wild MAPs, and at the same time due to encouragement given by the governments (i.e. the Ministry of Agriculture) in the form of subsidies (Paul, 2014: 5).

However, over-harvesting, land conversion and habitat loss increasingly threaten a considerable portion (approximately 15,000 species, or 21 per cent) of the world's MAP species and populations. Therefore, approaches to wild MAP collection that engage local, regional and international collection enterprises and markets in the work of conservation and sustainable use of

MAPs are urgently needed (Leaman, 2006: 98; Leaman and Salvador, 2005: 4).

Some basic challenges for sustainable wild-collection contain the lack of knowledge about sustainable harvest rates and practices; undefined land use and rights; and lack of legislative and policy guidance. From market viewpoint, domestication and cultivation ensure several advantages over wild-harvest for production of plant-based medicines: (i) while wild-collection often offers material adulterated with unwanted sometimes harmful other plant species, cultivation provides reliable botanical identification; ii) wild-harvest volumes are dependent on many factors that cannot be controlled, and irregularity of supply is a common feature. Cultivation guarantees a steady source of raw material; (iii) wholesalers and pharmaceutical corporations can accept volumes and prices over time with the grower; (iv) the selection and development of genotypes with commercially desirable traits from the wild or managed populations may offer opportunities for the economic development of the medicinal plant species as a corp.; (v) cultivation allows controlled post-harvest handling and, therefore; (vi) quality controls can be assured; (vii) product standards can be adjusted to regulations and consumer preferences; (viii) cultivated material can be easily certified “organic” or “biodynamic” although certifiers and other agencies are also presently developing wild-crafting standards (Schippmann et al., 2006: 75-81).

### **3. Business Communication Amongst Stakeholders In MAPs Industry**

The ability to communicate is a managerial necessity. Communication is the tool by which a manager manages. Luthans and Larsen asserted that the best way to determine how managers communicate is to examine the relationship between the communication behaviours of managers and their managerial activities. The communication behaviours of managers are taken up in terms of channels, time allotments, initiation of contact, frequency of occurrence, and contexts. Managerial activities are either supposed or prescriptively determined by experience, common sense, or folklore (Luthans and Larsen, 1986: 161-163). Investigating the communication behaviour and activities of 120 managers in 5 diverse organisations, Luthans and Larsen found that the majority of communication behaviours was reportedly between managers and their subordinates. Similarly, managers tend to communicate more with others outside their organisations than they do with peers, employees outside their supervision, or superiors (p. 172). Communication with actors inside and outside of an organisation creates a stakeholder communication network.

Business communication has primarily focused on written communication in business, the emphasis being on “the exchange of messages that support the goal of buying and selling goods or services.” Business communication continues to be interested in communication both inside and outside the organisation. Internal messages common to the discipline range from

memoranda and reports to interviews and meetings; external messages involve letters and conferences, while speeches are for both inside and outside audiences (Shelby, 1993: 252-253). Business communication is communication intended to help a business achieve a fundamental goal, to maximise shareholder wealth and strategic interests (Shelby, 1993: 245).

In business communication, the hardware, software, organisational structures, and social procedures by which individuals collect, process, and exchange information with other individuals are considered as communication technology. The expanding array of new communication technologies has had major influences on organisations. These technologies have affected organisational design. The capacity of electronic mail, teleconferencing, video conferencing, and fax to enable coordination and collaboration at a distance permits organisations to adopt more dispersed forms. Likewise, new communication technologies have an impact over organisational behaviour. If members are permitted to use technologies such as electronic mail with few restrictions, the consequence is often an “opening up” of the organisation (Poole, 2017b).

There are large number of stakeholders in MAPs sector, which include growers, herbal practitioners, manufactures, research institutions, universities, state forest department, non-governmental organisations (NGOs) and so on (Kala, 2015: 136).

The structure of the trade in MAP material in Europe is very complex and varies from country to country, depending much on whether the country is a consumer (Germany, France, UK, Spain) or a source country (Albania, Bulgaria, Hungary, Turkey):

- 1) In producer countries, in general, material is purchased from collectors or cultivators through several middlemen to exporters; these middlemen may be district trades, local dealers, or village cooperatives.
- 2) Collectors of MAP material from the wild are, in most cases, rural people, retired people, or often women and children. Collecting provides in most cases a supplementary income and is done either with or without prior contractual agreement with a trader or a producer.
- 3) In consumer countries the imported merchandise is delivered either to other wholesalers, or to different kind of industries, such as the pharmaceutical, cosmetic or food industry, extract producers, packaging companies, second level retail suppliers, and different kind of outlets.
- 4) The trade in MAP material in countries belonging to the former Eastern bloc has changed in recent years, largely owing to changes from strictly organised, state-controlled trading systems, based mostly on country-wide networks before the fall of communism to free and

diversified markets, with an increasing number of competing, private companies.

- 5) In Germany, besides the mainstream trade two small trades can be observed: trade in “green” commodities, and trade for use in traditional East Asian or Chinese medicine (Lange, 1998).

Overall, there are four basic categories of MAPs industry actors (see Table 1). These namely are producers, traders (i.e. level 1, level 2) and intermediaries (i.e. range of agencies).

**Table 1: The Categorisation of MAPs Industry Actors**

Producers	Traders (Level 1)	Traders (Level 2)	Intermediaries (Range of Agencies)
Wild-collectors	The wild-collectors themselves	Companies that blend products to sell onward to retailers	Government regulatory agencies in the originating country
Subsistence farmers	Farmers, rich or poor	Companies that manufacture and retail under a brand name	Government regulatory agencies in destination and trans-shipment countries
Better-off farmers	Amateur traders, often neighbours of the producers	Fair Trade organisations that buy and sell MAP using several market channels	National and international NGOs working to raise local incomes
Corporations and government entities	Professional traders of various sorts	End-users who buy direct from farmers	Bilateral or multilateral development agencies
	Trade associations		Government development agencies
	National and international corporations		Trade associations in the originating country
	Development agencies – national or international – actively engaged in trade		Trade associations in the destination country (and occasionally in trans-shipment countries)
	Government entities including MAP monopolies and forest management bodies		Special-interest groups in any country

**Source:** Brown, 2006: 69-70.

These stakeholders interact in many places along a complex and unevenly administered marketing chain in which each actor has a different agenda. Even though profit is the acknowledged goal in business, the description of

profit differs from one person to another. Some stakeholders, development agencies in particular, have rural development, livelihood security or maybe environmental diversity or sustainability as their purpose, not corporate profit (Brown, 2006: 70).

#### **4. Stakeholders Feedback and Recommendations**

In this study, 39 company executives, 15 public and private representatives, 14 logistics representatives, 18 independent collectors were contacted. These executives and representatives are coded as; (A<sub>1</sub>-A<sub>39</sub>), (B<sub>1</sub>-B<sub>15</sub>), (C<sub>1</sub>-C<sub>14</sub>), and (D<sub>1</sub>-D<sub>18</sub>) respectively.

The feedback and recommendations from these stakeholders are listed below:

- 1) Recently, the MAPs industry has been affected by high level of technological advancements and these have encouraged private sector companies to conduct research and development (R&D) studies and analyses. Companies have oriented to collaborations with universities and research institutes due to their desire to invest in human resources and their surrounding environment. Companies cannot afford such a burden on their own because they want to share their responsibilities and create synergy for attaining a maximum level of profitability. Stakeholders who came together through common projects have the potential to expand their collaborative actions and bring different types of public sector actors, private sector actors and civil society organisations into their structures and make the MAPs industry more diversified and sustainable. For instance, a multi-national corporation (MNC) which is quite active in MAPs industry has been conducting the “Albanian SAGE Project” by means of creating a productive atmosphere for such collaboration. The corporation that is conducting the “Albanian SAGE Project” has been awarded a very prestigious international environmental standard (i.e. Rainforest Standard) which is integrating social, environmental and economic well-being (A<sub>1</sub>-A<sub>39</sub>; B<sub>1</sub>-B<sub>15</sub>). The Rainforest Standard (The RFS) is the world’s first fully integrated forest carbon credit standard, built from the ground up by Columbia University’s Centre for Environment, Economy, and Society, Bolivia’s PUMA Environmental Fund Foundation, Brazil’s Fund for Biodiversity, Colombia’s Environmental Action Fund, Ecuador’s National Environmental Fund, and Peru’s Trust Fund for National Parks and Protected Areas to accommodate the ecological conditions and social realities of the Amazon region and the demands of emerging carbon markets. It integrates in a single standard all requirements and protocols for carbon accounting, socio-cultural and

- socio-economic impacts, and biodiversity outcomes (The Rainforest Standard, 2017).
- 2) A chronicle issue in which communicative problems are experienced in MAPs industry seems to be related to the use of concepts. Especially, the widely use of common references in botanical names in Latin as well as the forms most commonly used by various plant names in different languages can cause confusion and increase complexity of business communication in MAPs industry. Hence, such communications of linguistic matters force people using multiple media environment and lead to the necessity of reducing uncertainty in the MAPs industry (A<sub>1</sub>-A<sub>39</sub>; D<sub>1</sub>-D<sub>18</sub>).
  - 3) Certification, standardisation and inspection for organic farming products have become very crucial. In this context, certificates and standards that are mostly required are listed as follows: (i) Certification of Equivalence (EU Reg. n. 834/07, EU Reg, 889/08 and following integrations and modifications), based on ACB Standard for equivalency to EU for third countries; (ii) Certification of National Organic Programme (NOP) Compliance, Rule / CFR 205 with standards mandatory in USA; (iii) Certification of Japan Agricultural Standards (JAS) Compliance, standards mandatory in Japan; (iv) Inspection activity aimed at verifying the compliance with “Garanzia AIAB Italia Standards”, 100% organic and from Italian origin; (v) Certification of Canada Organic (COR) Compliance CAN/CGBS-32.310 standards mandatory in Canada; (vi) Inspection activity aimed at verifying the compliance “Naturland Standards”, voluntary certification system which grants the use of the related certification mark of NATURLAND – anerkannt ökologischer Landbau; (vii) Inspection activity aimed at verifying the compliance with the BIO SUISSE standards, voluntary certification system which grants the use of the concerned certification mark given by the Swiss organisation named BIO SUISSE; (viii) Inspection activity aimed at verifying the compliance Soil Association Standards, voluntary certification system which grants the use of the related certification mark of SOIL ASSOCIATION; (ix) Certification of Law of Organic Products (LPO) – standard mandatory in Mexico; (x) Kosher Certificate; and Hazard Analysis Critical Control Point (HACCP) Certificate (A<sub>1</sub>-A<sub>39</sub>).
  - 4) Exporters in MAPs industry are requested the Good Manufacturers Practice (GMP) and Drug Master File (DMF) standards by buyers such as pharmaceutical companies (A<sub>1</sub>-A<sub>39</sub>; B<sub>1</sub>-B<sub>15</sub>).
  - 5) US Customs and Border Protection (CBP) has implemented a phase of Importer Security Filing (ISF) enforcement. ISF forms that are filed late will be subjected to a 5000 USD liquidated damage penalty.

In order to ensure timely ISF transmission, filing must occur at least 24 hours before the cargo departs for the USA (A<sub>1</sub>-A<sub>39</sub>; C<sub>1</sub>-C<sub>14</sub>). Key value chain actors from the private sector such as organisers of gathering and purchase points, small integrated processors and exporters, and large integrated export corporations require expertise to conceive what investments and other next steps they ought to take to improve their value chain as business relationships (Furth, 2015: 2).

Guidelines for the sustainable collection of Non-Timber Forest Products (NTFP) ensure beneficial models for sustainability of value chain as business relationship in MAPs industry. Models for NTFP that might be especially useful for MAPs industry comprise the certification system of the Forest Stewardship Council (FSC), the International Federation of Organic Agricultural Movements (IFOAM), and Fairtrade Labelling Organizations International (FLO). Likewise, the 1993 WHO/IUCN/WWF Guidelines on the Conservation of Medicinal Plants and the 2004 WHO Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants provide general guidance and principles for the development of a global framework of practice standards for MAPs industry (Leaman and Salvador, 2005: 4-5).

## **CONCLUSION**

The MAPs industry was grown on a different structure under the influence of economic, social and political changes in the last three decades. At the beginning of the 1990s, actors operating in the industry have become more and more diversified with the increase of collaborations and strategic partnerships. Thus, they bought administrative improvements and facilitated the use of technology of leading companies of European countries. In addition, various collaborations have become a necessity for recruiting Small and Medium-sized Enterprises (SMEs) to enhance the quality of production process and attaining certain international standards. Merely collaborations between corporations are not adequate to meet these requirements. International organisations have been undertaken various projects by launching funding and grant schemes (e.g. EUROPEAID, USAID and so on) within the framework of agreements that exist amongst countries to ensure regional development.

It can be put forward that all these efforts have provided positive results in the development of MAPs industry. However, strengthening the MAPs industry is likely to be possible mainly through the improvement of all parts and segments operating in the process ranging from the first manufacturer to the last consumer. For this reason, the interaction between miscellaneous actors and stakeholders must take place on a common ground to enforce the value chain of each stakeholder that affects the industry and vice versa.

Especially for emerging economies, agriculture is a driving force and can act as a trigger to the whole economic growth of the country, also having a great impact on four other pillars – namely, poverty reduction, equity (including by gender), food security and environmental sustainability (Galanopoulos et al., 2011: 35).

In the light of these considerations, collaborations and partnerships between developed countries and developing countries at macro level, inter-industrial cooperation at mezzo level and “collaborations with companies and organisations which have technical efficiency fully available” (Galanopoulos et al., 2011) provide and structure a network of business communication in which miscellaneous and key stakeholders can create strong collaborations in MAPs industry and have a sustainable functionality in a long-term perspective.

It is worth noting here that SMEs ought to be included to stakeholder collaborations and business communications. Undoubtedly, enhancing the quantity and quality of local and small scale projects will contribute to the development of MAPs industry as a whole. If companies that process raw materials recruit and ensure training opportunities to collectors in villages and create projects aiming to gather plants by causing a minimum level of damage to environment, it will absolutely contribute to the enhancement of total quality management of the MAPs industry.

Taking clarifications above into account, the quality of communication that companies have with their stakeholders is a significant factor. In particular, the precautions that can be taken before the production process will enable the product reaching the final consumer without giving a negative impact to the overall quality. While companies operate their activities by refraining from mistakes in their communications, they are exposed to difficulties in collaborations with other organisations that require expert knowledge and increasing data transfer. For example, companies need to take advantage of specialist expertise when they are involved in joint sectoral and scientific projects. Companies need to communicate with university staff, collaborate with them and receive consulting service from them in the context of scientific research projects and they ought to demonstrate their efforts towards achieving this ultimate objective for ensuring a sustainable competitive advantage, solid business communication and effective collaboration with key stakeholders in MAPs industry. In this manner, such requirements will push the managers of companies to self-empowerment. Probably, managers feel themselves in a position that they are able to make their commercial discourse in a more scientific and technology-driven manner.

For future studies, this investigation recommends that researchers ought to conduct empirical studies which methodologically test arguments that are structured on reliable scales. It is also advised to the scientists that the gap



amongst “theory and practice” is a disadvantage and it divides people who are active in scientific world and practitioners who have grown in MAPs industry. Theoretical and practical perspectives and approaches must overlap with each other to obtain an idealised level of development of MAPs industry.

## Annex 1: Medicinal Plants & Natural Ingredients Sector Organisations

Organisation Names	Official Websites
Agribusiness in Sustainable Natural African Plant Products (ASNAPP)	<a href="http://www.asnapp.org.za/">http://www.asnapp.org.za/</a>
Agricultural Export Council (AEC) Egypt, Medicinal and Aromatic Plants Committee	<a href="http://www.aeegypt.com/">http://www.aeegypt.com/</a>
American Botanical Council (ABC)	<a href="http://abc.herbalgram.org/">http://abc.herbalgram.org/</a>
American Council for Medicinally Active Plants (ACMAP)	<a href="http://www.acmap.org/">http://www.acmap.org/</a>
American Herbal Products Association (AHPA)	<a href="http://www.ahpa.org">http://www.ahpa.org</a>
Asia Network for Sustainable Agriculture and Bioresources (ANSAB)	<a href="http://www.ansab.org/">http://www.ansab.org/</a>
Association for African Medicinal Plants Standards (AAMPS)	<a href="http://www.aamps.org/en/">http://www.aamps.org/en/</a>
Association for Medicinal and Aromatic Plants of Southeast European Countries (AMAPSEEC)	<a href="http://www.amapseec.org/">http://www.amapseec.org/</a>
Association pour les Plantes Médicinales et Aromatiques de Guadeloupe (APLAMEDOM-Guadeloupe)	<a href="http://aplamedom.fr/">http://aplamedom.fr/</a>
Association pour les Plantes Aromatiques et Médicinales de la Réunion (APLAMEDOM- Réunion)	<a href="http://www.aplamedom.org/">http://www.aplamedom.org/</a>
Associazione Italiana fra Coltivatori, Raccoglitori, Trasformatori, Importatori, Esportatori, Grossisti e Rappresentanti di Case Estere di Piante Medicinali, Aromatiche, Spezie, Estratti Vegetali, Oli Essenziali e loro derivati (ASSOERBE)	<a href="http://www.assoerbe.eu/">http://www.assoerbe.eu/</a>
Canadian Herb, Spice and Natural Health Products Coalition (CHSNC)	<a href="http://www.saskherbspice.org/CHSNC/">http://www.saskherbspice.org/CHSNC/</a>
Central Herbal Agro Marketing Federation of India (CHAMF)	<a href="http://www.chamf.org/">http://www.chamf.org/</a>
Chamber of Herbal Industries of the Philippines, Inc. (CHIPPI)	<a href="http://chipi.org.ph/">http://chipi.org.ph/</a>
Egyptian Medicinal and Aromatic Plants (EMAP)	<a href="http://www.emap-eg.org/">http://www.emap-eg.org/</a>
European Herb Growers Association (EUROPAM)	<a href="http://www.europam.net/">http://www.europam.net/</a>
European Herbal Infusions Association (EHIA)	<a href="http://www.ehia-online.org/">http://www.ehia-online.org/</a>
Federazione Italiana dei Produttori di Piante Officinali (FIPPO)	<a href="http://www.fippo.org/">http://www.fippo.org/</a>
Filière biologique des plantes de santé du Québec	<a href="http://www.plantesmedicinales.qc.ca/">http://www.plantesmedicinales.qc.ca/</a>
Instituto Peruano de Productos Naturales (IPPN)	<a href="http://www.ippn.org.pe/">http://www.ippn.org.pe/</a>
International Council for Medicinal and Aromatic Plants (ICMAP)	<a href="http://www.icmap.org/">http://www.icmap.org/</a>
International Trade Union of Genuine Regional Materia Medica (TUGRMM)	<a href="http://www.tugrmm.com/en/">www.tugrmm.com/en/</a>
Jadi Buti Association of Nepal (JABAN)	<a href="http://www.jaban.com.np/">http://www.jaban.com.np/</a>
National Medicinal Plants Board (NMPB)	<a href="http://nmpb.nic.in/">http://nmpb.nic.in/</a>
PELERO CZ o.s. (Association of the Producers and Processors of Medicinals and Aromatic Plant and Spices)	<a href="http://www.pelero.cz/">http://www.pelero.cz/</a>
Phytotrade Africa	<a href="http://phytotrade.com/">http://phytotrade.com/</a>
Polski Komitet Zielarski (Polish Herbal Committee)	<a href="http://www.pkz.pl/">http://www.pkz.pl/</a>
Regional Network for Medicinal and Aromatic plants in the Near East and North Africa (AARENINA)	<a href="http://www.aارينena.org/MHPWeb/">http://www.aارينena.org/MHPWeb/</a>
Singapore Chinese Medicines and Health Products Merchant Association	<a href="http://www.tcm.org.sg/">http://www.tcm.org.sg/</a>
Société Marocaine des Plantes Aromatiques et Médicinales (SOMAPAM)	<a href="http://somapam.voila.net/">http://somapam.voila.net/</a>
Verein für Arznei- und Gewürzpflanzen (SALUPLANTA e.V.)	<a href="http://www.saluplanta.de/">http://www.saluplanta.de/</a>

**Source:** Brinckmann, 2014: 48-49.

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