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MAPs AND ESSENTIAL OILS FROM NEPAL

Market Analysis And Market Entry Strategy
In the USA Market



Imprint

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Market Analysis And Market Entry Strategy In the USA Market



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Scope of the Study

Based on the Nepal Trade Integration Strategy (NTIS) 2010, a proposal in implementing the NTIS in the sector of Medicinal and Aromatic Plants (MAPs) was submitted to the Enhanced Integrated Framework (EIF) by the Government of Nepal (GoN). The Implementing NTIS in Medicinal and Aromatic Plants (IN-MAPs) Project, with the objective to strengthen the capacity of the MAPs actors in coordination and implementation of the NTIS is financed by the EIF, the German Federal Ministry for Economic Cooperation and Development (BMZ) and Government of Nepal (GoN). On behalf of the BMZ, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH supports the Ministry of Forests and Soil Conservation (MoFSC) to execute the IN-MAPs project.

CLOSE SYNERGIES was built with the Nepali - German Trade Promotion Programme (IN-MAPs TPP) and the Nepali-German Inclusive Development of the Economy (INCLUDE) Programme focusing on the implementation of the NTIS and providing support in the MAPs sector in Nepal. The IN-MAPs Project Collaborates extensively with the PAG and other Development Partners involved in the MAPs sector.

To facilitate this activity of the IN-MAPs project, an in-depth study to analyse the main markets for MAPs and Essential oils and preparation of Market Entry Strategies was needed being the basis for further export promotion intervention of the MAPs sector in Nepal.

The research objective of this study was to identify the size and opportunities in five selected markets for eleven selected MAPs, Essential oils and Commodities that are locally collected and processed in Nepal.

The selection of the markets and products was done in two steps:

1. Discussions with stakeholders to identify current markets, desired markets, main current products and future products in Nepal during visits from between 1 - 6 November 2015.

2. Presentation of the summary of the study in the core group meeting on the 6th of November - see Annex 8.

Markets: The USA, Germany, France and India were the most desired markets among the stakeholders and companies. China was chosen because of its size and fast growth. Besides, it is geographically close to Nepal.

Products: The priority products were Timur, Mentha, Asparagus, Cinnamon and Chiuri which are the main products in the six target districts of the Nepal-German INCLUDE programme in the Mid-Western

and Far-Western regions of Nepal: Banke, Kailali, Pyuthan, Surkhet, Dang and Kanchanpur - see Annex 9. The other products were selected through discussions and suggestions by JABAN, NEHHPA and other relevant stakeholders during the meeting.

The study provides recommendations to comply with the strict market access requirements, develop options to access the five selected markets, and gives recommendations for an overall global market access strategy. This is done by providing relevance on:

- How to enter these markets with the best opportunities for the selected MAPs products from Nepal.
- How to comply with market access requirements in the USA, Germany, France, China and India and recommend how to enter these markets, providing addresses of potential trade partners, useful organisations and trade fairs in each country.
- Giving the best recommendations for a global market access strategy for Nepali companies and suggest how to move forward to reinforce the MAPs sector in Nepal in a sustainable manner with the support of governmental institutions, trade associations and NGOs.

The main topics in the second part that is covered in Chapter 3 and were further discussed during the validation workshop on 22nd of August 2016 with the stakeholders include:

- Current situation of the MAPs/Essential oil sector in Nepal.
- Choosing the best of the five markets for Nepali exporters based on market size and detailed trade statistics.
- Global Trends in ingredients in the three key segments (flavour, fragrance, medicinal) and opportunities for the eleven selected products from Nepal.
- How to comply with Access requirements (Legislative, Quality and Voluntary).
- How to jointly apply for Organic Labelling (e.g. by organic growers group).
- Dealing with competitive countries and how Nepal can differentiate by a USP (Unique Selling Proposition).

- Recommended strategy to strengthen the sector in Nepal to the benefits of all actors in the value chain to encourage collaboration on all levels and to attract foreign companies for sustainable sourcing to gain more security in supplies, fair prices and know-how for farmers, collectors, cooperatives and exporters.
- Enhancing the marketing skills by companies and cooperatives by taking a more customer oriented approach by using marketing mix (product, price, distribution and promotion strategy).

Methodology for the study

EXTENSIVE DESK RESEARCH was conducted where all available secondary source information was accessed. A thorough search was made using official statistics (ITC, Eurostat), research databases, market reports - including from Euromonitor, trade press, trade associations/web portals (COSSMA, Food Navigator, Food for Trade, Food World, Organic-Bio etc.), company information sources, governmental and non-governmental trade information as well as other information via the internet.

FIELD RESEARCH was done at international shows (Food Ingredients in Paris 2015, Biofach in Nuremberg in 2016) and through discussions and face-to-face and skype/phone interviews conducted with buyers, technical experts in the field and relevant consultants between November 2015 and March 2016.

Limitations

The scope of this study is primarily on the development and potential in exports markets in terms of significance (market size), key segments and market opportunities. The current situation of the MAPs sector in Nepal is briefly reviewed and issues like production capacity of the exporting companies but policy making were not requested in the ToR.

However, some recommendations are given in Annex 8 based on the results of the validation workshop with the stakeholders.





Acknowledgement

This market study was made under the Nepal-German Trade Promotion Programme (TPP) led by the Ministry of Commerce (MoC), Government of Nepal and with Technical Assistance by the the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). I especially would like to thank Mr. Durga Datta Regmi as well as Dr. Peter Richter, Ms. Himadri Palikhe, Ms. Safala Shrestha, Ms. Jannu Chudal, Mr. Pankaj Kumar Das and Mr. Robert Glass of GIZ for their support.

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Khanal (ANSAB), Ms. Aruna Shukla (JABAN), Mr. Samir Dhungel (Khaptad Aroma), Mr. P.K. Sharma (Gyan Herbals), Mr. Sanjay Jain (Bahubali Herbal Essences), Mr. Jagannath Koirala (HPPCL), Mr. Jan Pieter Servaas, Mr. Ian Liddell and - last but not least - my wife Jacqueline for all her support.

I sincerely appreciated the spirit of cooperation and openness of all.

It has been a great challenge to make this study and having more insight in the complex but very interesting world of MAPs and Essential oils. I sincerely hope that this market study will be a good reference tool for all stakeholders and will contribute to further development of the MAPs sector in Nepal.

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ABOUT 3,000 SPECIES OF MAPs ARE TRADED INTERNATIONALLY AND
2,000 IN EUROPE (GERMANY, SWITZERLAND, FRANCE). MAPs ARE
MOSTLY USED IN THE PHARMACEUTICAL INDUSTRY FOR TABLETS,
CAPSULES, POWDERS AND EXTRACTS. THE GLOBAL MAPs IMPORT
ROSE BY +3% SINCE 2010 AND REACHED IN 2014 A VOLUME OF
673,564 TONNES, VALUED AT US\$ 2,724 MILLION.



EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

PRODUCT AND COUNTRIES

This market study covers 11 selected MAPs and essential oils from Nepal and a number of other relevant types. These are: Timur (*Zanthoxylum armatum*), Mentha (*arvensis*, *cornmint*), Asparagus, Cinnamon (*Cinnamomum tamala*), Butternut (*Diploknema butyracea*) Spikenard (*Nardostachys jatamansi*), Chamomile (*Matricaria chamomilla*), Soapnut (*Sapindus mukurosi*, Wintergreen (*Gaultheria fragrantissima*), Anthopogan (*Rhododendron anthopogon*), Ginger (*Zingiber officinale*). Others are Citronella, Palmarosa, Lemongrass, Valerian (*Valeriana officinalis*), Turmeric (*Curcuma longa*), Large Cardamom, Sweet flag (*Acorus calamus*) and Yarshagumba (*Ophiocordyceps sinensis*). The covered export markets in this study are: USA, France, Germany, China and India.

GLOBAL SCENARIO

About 3,000 species of MAPs are traded internationally and 2,000 in Europe (Germany, Switzerland, France). MAPs are mostly used in the pharmaceutical industry for tablets, capsules, powders and extracts. The global MAPs import rose by +3% since 2010 and reached in 2014 a volume of 673,564 tonnes, valued at US\$ 2,724 million. **Supplies of MAPs by Nepal** was just 0.2% of global imports most of which were destined for India and China, although exports to China significantly dropped (yarshagumba). In 2015, MAPs exports by Nepal were 3,172 tonnes valued at US\$ 4.7 million.

Global production of essential oils was estimated at over 160,000 tonnes in 2014. By volume, the ten most common oils take up 80% of the total world market. Brazil, India, USA, China, Egypt, Mexico, Guatemala, Morocco, Indonesia and Vietnam are main exporting countries. Particularly Indonesia, Sri Lanka, Vietnam expanded their exports and invested in scientific and technical training.

Twelve large flavour and fragrance houses dominate the global essential oil market with a sales value of US\$ 2.3 billion in 2014. Their value chains are well integrated with the top industry players. In order to produce oils of a constant quality, they work with loyal and reliable raw material suppliers and have their logistics operations well organised. Future prospects for essential oils are bright.

Exports of essential oils from Nepal are very small, but are on the rise. Between 2010 and 2015, exports of essential oils rose by a CAGR of 11% from US\$ 974 to 1,626 thousand. By volume, exports rose from 21 to 37 tonnes. The USA has become the largest destination (by value), followed by France, Belgium, Germany, UK and Canada, while exports to India dropped by 30%. Most Nepal oils are limited supply oils. The best opportunities for MAPs and oils from Nepal are in three following key segments: premium flavour (natural health food and organic food), premium BPC (Beauty and Personal Care) products and Pharmaceutical (herbal traditional medicines).



THE STUDY PROVIDES RECOMMENDATIONS TO COMPLY WITH THE STRICT MARKET ACCESS REQUIREMENTS, DEVELOP OPTIONS TO ACCESS THE FIVE SELECTED MARKETS, AND GIVES RECOMMENDATIONS FOR AN OVERALL GLOBAL MARKET ACCESS STRATEGY.

APPROACHING THE SELECTED MARKETS

FLAVOUR: Premium flavour is the largest key segment where sales are expected to be US\$ 93,156 million by 2019. In the USA, this segment is expected to reach sales value of US\$ 59,378 million. Especially millennials and baby boomers, recognise that unprocessed fresh food or organic food is healthy, tasty and can help to slim down. In France and Germany, consumers prefer fresh food of a good quality even if they can buy this less frequent due to a limited budget. Driven by popular reality TV competitions and more immigrants (Germany), people become more open to cuisines from other countries. There is a trend towards organic beverages with typical (spicy) tastes and herbal teas rather than sweet carbonated drinks. Interesting Nepal oils in the premium flavour segment are:

- **Timur and curcuma** can be used in exotic dishes having new exciting tastes and are good for health (digestion, immune system, performing well etc.).
- **Ginger and cinnamon** could be used in the drink industry especially in the healthy fresh drinks, as it provide good taste as a compensation for reduced use of sugar.
- **Timur, curcuma, ginger, cinnamon** can be used in new natural herbal teas in mixture blends or with hot milk cappuccino-alike drinks ("Tea -Latte").
- **Wintergreen** having many different uses such as in sugar confectionery (candies, chewing gums), bakery products, frozen dairy, soft drinks and alcoholic drinks.

Spices and taste enhancers in organic dishes or vegetarian dishes definitely gain more ground in the Western market. In China organic food is still something new, although fresh healthy food is growing.

Further reforms in the Chinese economy, will further generate a middle class population that is expected to reach 854 million people by 2035. China shows the largest growth rates in all segments and premium food sales is expected to reach US\$ 61,401 million by 2019, being larger than the USA.

FRAGRANCE: Sales is expected to reach US\$ 46,555 million in 2019 where the USA and China will be the main markets. In the premium BPC segment, concern about side effects of synthetic ingredients makes the industry go "greener" Interesting Nepal types of oils in the premium BPC segment:



- **Rhododendron** is used in skin care, shampoos, bath gels/soap, because of its fresh, sweet floral aroma. Evoking sympathy in the world of New Age and yoga, rhododendron will be interesting in women's perfume (typical floral note). It can be used, as well, in air fresheners in China or India.
- **Ginger** is used in men's aftershave creams/lotions, men's perfumes and in skin and hair products for both women and men. Ginger has multi-functional properties.
- **Jatamansi has anti-aging properties**, is a natural deodorant, and can be used in hair loss and hair colour restoration - an issue among the ageing populations in the USA and in Europe.
- **Jatamansi, ginger and timur** can be used in men's perfumes including in the popular Oud and woody based types among affluent men. This also applies for cinnamon.
- **Butternut** can be used in skin care as a moisturizer, in shampoos and shower gels as an alternative to shea butter from Africa.
- **Palmarosa** used in perfumes with its sweet, rose like scents. Other uses include soaps, lotions, facial steams and hair treatments.

In the premium fragrance segment, the perfume culture stays in France and Germany, while the US market has quickly become mature due to an overkill of celebrity perfumes. China shows the largest growth rates in the premium BPC segment. The middle and western part will develop and the baby & childcare category will further rise (two-child policy).

India accounted for 84% of Nepal exports in 2015 most of which are MAPs. The majority of Indian people are poor and wages per day are much lower than in Western countries or in China. MAPs from Nepal will be still required for hand soaps, fabric wash, talcum powder, oral care products, shaving creams and oil products traditionally used in hair care, skin care and Ayurvedic health care products. Along with the expected population and (slowly) rising middle class population, demand for premium flavour and premium BPC products will grow as well as the traditional products.

PHARMACEUTICAL: In health care and dietary supplements, curcuma is discovered as one of the new herbal medicines. The popularity of traditional

Chinese medicine is rising as in the USA with the expansion of Chinese pharmaceutical companies that also target American people looking for alternative medicines. **Aromatherapy** continues to be popular driven by active promotion, direct selling via social media, the awareness and popularity of aromatherapy is still rising, and this form of self-medication is moving more to the mainstream market. Common uses of essential oils are for well-being, healing purposes (respiration, digestive, immunity, anti-oxidant) and reduction of stress.

DIFFICULTIES FOR NEPAL TO OVERCOME

- **A weak infrastructure** where MAPs need to come a long way on foot from remote villages in the mountains. There is a lack of proper packaging material and limited access to electricity.
- **Nepal's landlocked position**, its lack of fuel and raw materials needed for manufacturing. The economy is closely tied to India or China. The open border with India giving room to smuggling.
- **Exports of MAPs/oils by Nepal are largely overshadowed by India.** Indian traders buy MAPs direct at low prices for the production of oils in India, promoted as Indian or Himalaya products.
- **Low recognition.** Many people in Western markets know Nepal as a country, but in essential oils there is no clear recognition between oils from Nepal or from India. In addition, the image of Nepali oils might be affected, if some Indian companies sell adulterated oils.
- **Farmers or collectors usually have no clear idea** about the consumer taste of particular essential oils, specific seasons or shortages/movements in demand or the purpose of use.

MARKET ACCESS REQUIREMENTS

Legislative requirements are mandatory and subject to penalties if they are ignored, especially in Europe and USA. These are related to environmental protection, food safety for consumers and hygiene. The regulatory barriers to enter the USA market are lower than Europe. In Food legislation, HACCP rules must be respected and a Certificate of origin must be submitted. In Europe, there are regulations on MRLs,

OBTAINING ORGANIC CERTIFICATION IS HIGHLY RECOMMENDED AS THIS WILL CONTRIBUTE TO ENHANCE THE QUALITY OF THE MAPS SECTOR.

traceability and a phytosanitary certificate is required.

Cosmetic regulation. In the USA, the FDA requires that every ingredient must be substantiated for safety before going to market. In Europe, a cosmetic safety assessment must be carried out and regulations regarding herbal traditional medicines are extremely strict. The best option is to export the MAP or oil as a herbal food supplement. Much care must be taken regarding claims.

Recommendations to improve the quality include:

Use the best plants; motivate collectors; use same plants from same harvests; minimize the time between harvesting and distillation and keep the oil glass bottles, aluminium or steel drums in clean places. Organic certification is highly recommended and will contribute to enhance the quality of the sector. Procedures for MAPs and Essential oils can be done by Nepali companies, or jointly as an OGG (Group of Organic Growers).

RECOMMENDATIONS FOR THE MAPs SECTOR

- **Make Nepali MAPs and essential oils more visible** by clear positioning that conveys the ‘purity of Nepal oils coming from the roof of the world’ and differentiates with oils from India
- **Collected from the wild** in an ultra-clean natural environment is unique to Nepal e.g. timur, asparagus, wintergreen, jatamansi, picrorhiza or calamus. These exclusive limited supply oils have strong therapeutic properties and are multi-functional having many different applications in fragrance, flavour and aromatherapy.
- **To overcome the difficulties in cultivating MAPs** for exports, the following steps can be taken:
 1. Strengthening exports and production of essential oils. Upgrading technology and distillation units in Nepal and an accredited laboratory with chemical analysis facilities.

2. An improved sense of collaboration in the value chain. Like in other developing countries, collaboration between actors, and a better relationship with the final customers should strengthen the chain. Now, farmer, collectors and traders see themselves just as a part of a chain. People are primarily interested in the high demand of a herb/plant and the price they can get for it, regardless the quality. Little knowledge about (fluctuating) prices, malpractices of buyers/traders and prioritizing food crops affect motivation among farmers and collectors.

3. An encouraging and stimulating ‘mentor’ on the spot providing information and training to farmer and collectors, stimulate them by incentives, help them in troubleshooting.

4. Encourage investment by foreign companies e.g. by PPP partnerships. This is a win-win situation as more companies commit themselves to sustainable sourcing strategies. Each collaboration should be reviewed periodically to ensure fair benefits on both sides.

5. Develop a wider customer base. Relying on only few customers reduces product innovation, quality and differentiation from competitors.

6. Developing a marketing strategy where the sector, or companies individually think in terms of product, price, distribution and promotion to organise and structure their activities.

THE GLOBAL TRADE HAS BEEN RISING EACH YEAR SINCE 2010 AND
THE TOTAL MAPs IMPORTS REACHED A VOLUME OF 673,564 TONNES
IN 2014, VALUED AT US\$ 2,724 MILLION. SPECIAL AND HIGHER
PRICED PLANTS WERE USED IN NATURAL MEDICINES AND IN
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OF +8% OF IMPORTED MAPs IN THE WORLD.



GLOBAL SCENARIO OF MAPs AND

**GLOBAL SCENARIO
OF MAPs AND
ESSENTIAL OILS**

1.1 Production and Trade in the world

MAPs

There are 250,000 - 500,000 of the plant species in the world. China, Indonesia and USA have more than 20,000 species with differences in the number of medicinal plant species as in shown in Table 1. It is no surprise that about 5,000 plants with medicinal properties, are found in China and 3,000 in India.

TABLE 1: HIGHER PLANT SPECIES AND MEDICINAL SPECIES IN THE ASIA AND THE USA

Country	Higher plant species	Medicinal plant species	share
China	26,092	4,941	18.9%
India	15,000	3,000	20.0%
Indonesia	22,500	1,000	4.4%
Malaysia	15,500	1,200	7.7%
Nepal	6,973	700	10%
Pakistan	4,950	300	6.1%
Philippines	8,931	850	9.5%
Sri Lanka	3,314	550	16.6%
Thailand	11,625	1,800	15.5%
USA	21,641	2,564	11.8%

Source: Institute of Natural Medicines - Japan (2008)

In Nepal, 700 species are in use for the Ayurvedic, Unani and Siddha medicines. Out of the total, 250 species are traditionally used as medicines and more than 100 species are commercially collected from the wild and exported in raw form mainly to India. A smaller part is processed to essential oils.

Wild collection versus cultivation. The majority (70 - 90%) of MAPs in China and Nepal is wild collected. In Europe, around 200 species are cultivated on a large scale, mostly in France (38,000 ha), Austria (24,000 ha), Germany (10,500 ha), UK (10,000 ha) and Spain (10,000 ha). In Germany, around 1,000 ha are organically cultivated (Source: European Herb Growers Association - Europam, 2013).

Trade. About 3,000 species of MAPs are traded internationally and 2,000 in Europe (Germany, Switzerland, France). MAPs are mostly used in the pharmaceutical industry for tablets, capsules, powders and extracts.



In Nepal, **700 species** are in use for the Ayurvedic, Unani and Siddha medicines.

The global trade has been rising each year (+3%) since 2010 and the total MAPs imports reached a volume of 673,564 tonnes in 2014, valued at US\$ 2,724 million. Special and higher priced plants were used in natural medicines and in perfumery, which was illustrated by a higher average value of +8% of imported MAPs in the world. The main importing countries are USA, Germany, Japan, China and Singapore, while by volume China, Hong Kong and Taiwan were major importing countries.

Nepal's exports of MAPs valued at US\$ 12.9 million and represented 0.44% of world exports ranking no. 37. Around 3,308 tonnes went to India led by rockfoil, timur, cinnamon tamala, persea and more than 60 other species. Between 2010 and 2014, exports to China rose enormously from 23 to 947 tonnes which was mainly attributed to the popularity of yarshagumba.

In 2014, the average value of exports to China was US\$ 8.35 - almost ten times higher than the value of exported MAPs to India, US\$ 0.90. Other high value MAPs went to UAE - 21 tonnes valued at US\$ 305 with an average value of US\$ 14.50. By value, the UAE has become the 3rd destination for Nepal.

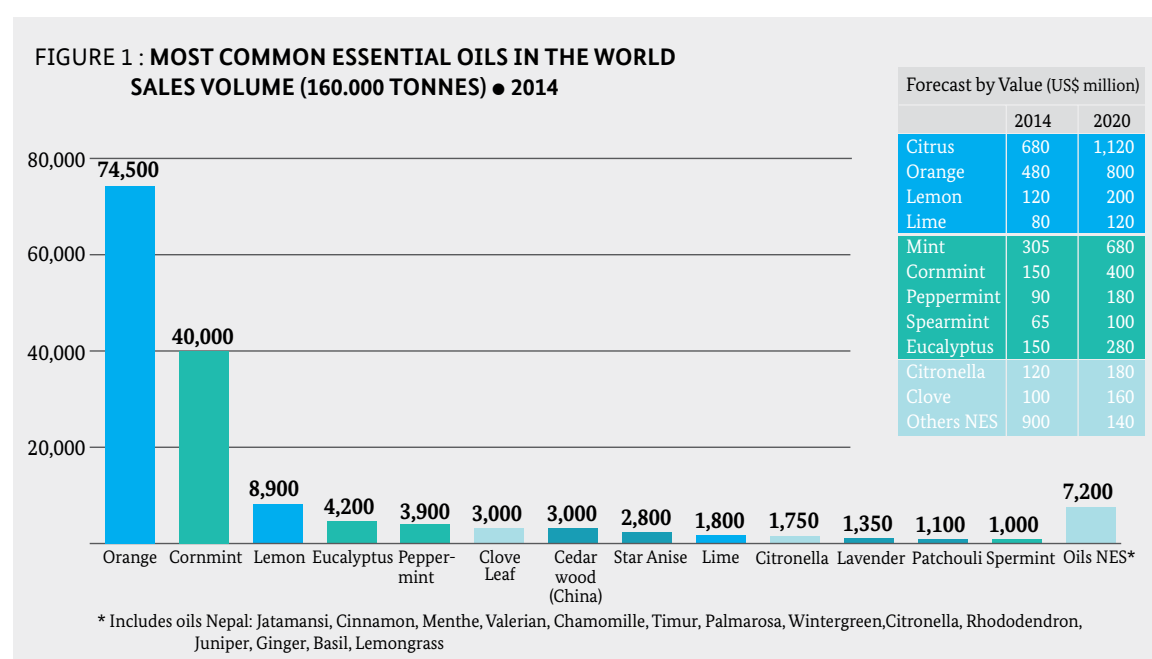
Essential oils

Global production of essential oils was estimated at over 160,000 tonnes in 2014. By volume, the ten most common oils take up 80% of the total world market.

The essential oil mostly produced and traded are:

- **Orange oil** is a by-product of orange production. More than 74,000 tonnes comes from Brazil, USA (Florida), Argentina, Dominican Republic, Australia and Italy and there are many uses.
- **Cornmint oil** (*Mentha arvensis*), estimated at 40,000 tonnes and comes mainly from India (north of Delhi), China, Brazil, Paraguay and Thailand. Most common uses are in toothpaste,

ABOUT 65% OF THE WORLD PRODUCTION COMES FROM DEVELOPING COUNTRIES BECAUSE OF THE AVAILABILITY OF RAW MATERIALS. MOST OF THE ESSENTIAL OILS TOP PRODUCERS ARE DEVELOPING COUNTRIES WITH LOWER LABOUR COSTS THAN IN WESTERN COUNTRIES.



Source: IFEAT, Grand View Research (2016)

- mouthwash, chewing gum, food (confectionery) flavouring, cosmetics and tobacco. Other uses - see also Annex 3.
- **Lemon oil** (8,900 tonnes) coming from Argentina, Brazil, Italy, Spain, USA and Peru and being used as industrial solvents, fragrance for cleaning products and flavouring.
 - **Eucalyptus oil** (4,200 tonnes) is mainly from China, Australia, Austria, Brazil, India and used for cough/cold remedies, solvents, cleaning agents and flavouring.
 - **Lavender oil** are typically made in France (Provence, Rhone Alpes) and Bulgaria and used in fragrances, toiletries and is popular in aromatherapy. In 2014, 1,350 tonnes were produced, as shown in figure 1.

Oils that are typically used in the production of alcoholic perfumery include:

- **Patchouli oil** mainly produced in Indonesia
- **Clove oil** mainly from India and Indonesia
- **Vetiver oil** from Haiti and Indonesia (estimated production was 200 tonnes).
- **Ylang-ylang** from Comoros and Madagascar (100 tonnes).
- **Rose oil** a high grade essential oil used in fine perfumery, produced mainly in Bulgaria and Turkey with global production between 3 to 5 tonnes.

About 65% of the world production comes from developing countries because of the availability of raw materials. Most of the essential oils top producers are developing countries with lower labour costs than in Western countries.

The price gap between essential oils can differ enormously depending on the volume of flowers needed for 1 kg, scarcity of the flower, purity, labour intensity, availability or high seasonal demand. If the price of orange oil is estimated at € 6/kg, the price of the rose oil could range between € 6,000 and € 7,000/kg.

Global essential oils imports rose by 6.2% in 2013 and reached US\$ 4.1 billion in 2014. The USA, France, Germany, UK and China were the main importing countries with a considerable part of oils being re-exported by most of these countries.

Nepal's exports of essential oils was US\$ 1.5 million and represented just 0.04% of world exports ranking no. 67. Around 37 tonnes primarily went to India which was mainly oils NES (Not Exactly Specified) - including jatamansi, cinnamon, valerian-, mentha oil, clove oil, citronella and orange oil. Nepal exported smaller quantities of turmeric, lemongrass and palmarosa. By value, France was the main destination of oils NES (wintergreen, jatamansi, palmarosa, lemongrass, citronella). Hungary, Switzerland, USA, Belgium Canada, Germany and Australia were other main destinations of oils NES from Nepal.

1.2 Consumption of MAPs and Essential oils in the world

MAPs

At least 4 billion people use herbal medicines for their health care and 60% of the world's population depends on traditional medicine for their primary health care needs. In developing countries, this rate is 80%. Ayurveda and traditional Chinese medicines extensively use MAPs in their treatment. MAPs, increasingly referred to as Botanicals, are also used for aromatic and/or culinary purposes as components for health foods, natural cosmetics and other natural health products.

The rise in herbal health care. From the 119 plant-derived pharmaceutical medicines, 74% is used in modern medicine (source: Institute of Natural Medicines, Japan 2008). Major pharmaceutical companies do further research on the potential of plant materials gathered from the rain forests

and other places. Technological advances in herbal remedies are achieved that are driven by the popularity of homeopathy and oriental medicine. In addition to crude tablets or medicinal teas, standardized extracts are produced in modern pharmaceutical facilities and used in modern medical systems under a physician's supervision. Herbal medicines are more often prescribed by practitioners and sold OTC (over the counter).

Prospects are bright for herbal health care.

According to BCC Research, the global market for MAPs rose annually by 11% from US \$19.5 billion in 2008 to US\$32.9 in 2013. The rise in herbal health care formulations has also driven industrial demand in cosmetics and nutritional supplements. Following the tendencies in herbal health care research, the prospects of advancing the frontiers of knowledge in herbal medicine are bright.

The international market for MAPs is dominated by China, France, Germany, Italy, Japan, Spain, UK and the USA. Japan has the highest per capita consumption of botanical medicines in the world.

The global market for seasonings, spices and herbs is likely to exceed US\$ 6.5 billion per year in the near future. Supported by the growing demand in food service, home cooking and growing consumer fascination for different cuisines, the total flavouring markets maintain an upward trend in volumes and values.

Essential oils

Essential oils can be sourced from over 3,000 plants. In Western world, there are 50 essential oils of which 25 used in cooking and over 20 are used in cosmetics, massage, aromatherapy and other uses. Other oils are used to repel insects and other arthropods that are pests of humans, livestock and pets (mosquitoes, fleas, ticks, etc.).

The global market of Essential oils was estimated at US\$ 2.3 billion in 2014 as shown in figure 2 with the USA (22%) and European (21%) markets overtaken by the China, India and other Asian countries which - without Japan - accounted, in 2014, for 30% of the essential oil consumption. In fact, the use of oils in traditional medicines has been used for many years in Asian countries. Urbanization, growth of

disposable income among the growing middle class, availability of convenience goods coupled with growing health concerns are the main forces for further growth of the essential oil consumption in Asia.

USA and Europe. Despite a lower share, the US and European markets continued to grow since 2003. Consumers have become more interested in nature and well-being with influences from the Far Eastern countries. Awareness of ingredients, performance and health benefits of using 'natural' products increased over the years which have driven demand for essential oils. This also has its impact on the personal care and cosmetic industry.

In the 1990s, committed visionaries like Anita Roddick, Horst Rechelbacher, Liz Earle and others, were successfully selling natural and ethical cosmetics through well-recognised retail chains like the Body Shop, Aveda or Joe Malone. Their companies are now part of multinationals who have invested in branding, promotion and global distribution with now many of these retail shops/ companies becoming mainstream, whether or not with a commitment to nature and suppliers in developing countries.

In the past 50 years, cosmetic consumers are exposed to at least 60,000 new synthetic chemicals

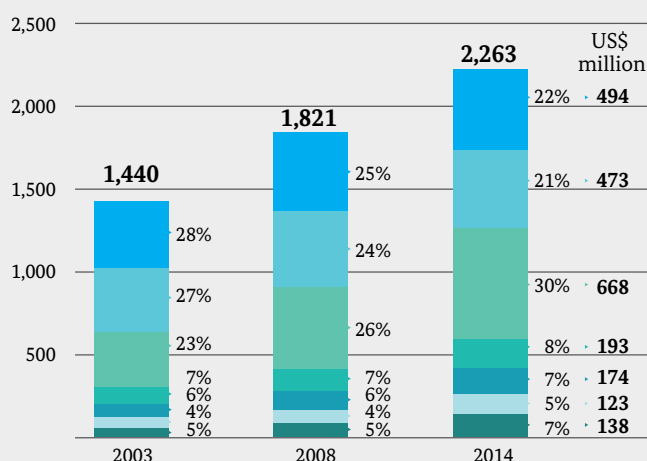
and it is no surprise that many are seeking out 'natural' ingredients in personal care products. Conscious consumers turned away from synthetic products that superficially enhance beauty but have no biological effects, to therapeutic products cosmeceuticals, which may repair damaged tissues, smooth, protect from the sun and moisturise. In addition to the essential oils, concentrates, concretes and absolutes were also more in demand.

China, India and other Asian countries have the largest share in the world population which continues to grow further. South Asian emerging economies (Vietnam, Indonesia, Thailand) recovered from the Asian crisis during the early years of the millennium and are predicted to grow in the coming years.

China's development towards a market economy, with the emerge of affluent consumers, has resulted in a fast rising demand for luxury goods including cosmetics and Western food, all of which use essential oils.

India has been traditionally a major consumer of essential oils, fragrances and flavours. In the 1990s, the Indian economy was liberalised and the market experienced a new growth period. For Nepal, India is a promising market with very large consumption of oils in all categories produced locally and oils

FIGURE 2 : GLOBAL ESSENTIAL OIL MARKET EVOLUTION
VALUE IN US \$ MILLION ● 2003, 2008 AND 2014



Source: KPMG, Seare (2016)

imported from Nepal, China, other Asian countries, Europe and USA. Both India and China were not greatly affected by the credit crunch.

Latin America accounted for 7% of the global essential oil market (see figure 2). Trade liberalisation in the 1990s generated a significant growth in the cosmetics, food sectors and consequently has driven the consumption of essential oils, especially in the Mercosur Economic Community. On the other hand, local production of essential oils dropped because of replacement by oils being imported from foreign subsidiaries of the multinationals that expanded their operations in Latin America. Nevertheless, with the middle class population (Brazil, Argentina) being increasingly concerned about the environmental and social issues in their country, the prospects for natural ingredients and (local made) oils that are locally made looks good.

Middle East demand for essential oils is centred on fragrance oils mostly supplied in precompounded form. According to trade sources, affluent Muslim women in the Gulf States, USA and Europe spend at least € 200 - 300 per month on fashion and personal care products. However, they are more knowledgeable about essential oils, as they are also made in several Arab countries (Egypt, Morocco, Turkey etc.). Specific oils or spices such as cardamom, cinnamon, nutmeg, cumin etc. , remain popular in local dishes. Flavour oil consumption is largely in the soft drink sector.

According to projections of the Guardian, in 2010 there lived 321 million Muslims in the Middle East-North Africa. By 2030, they are estimated to be 439 million. This number is getting closer to the number of Europeans being 510 million in 2015.

There is a growing group of environmentally conscious (younger) people within the concept of the 'Green Muslim' being inspired by the vertical village and the newly built Halal Centre in Dubai, the largest human wellness centre in the world. This implies opportunities for natural ingredients.

A particular interesting segment for essential oils from Nepal are the 1 million Nepali migrants living in the Gulf States (500,000 in Saudi Arabia, 341,000 in Qatar, 200,000 in the UAE and 56,000 in Kuwait).

Industrial Use

The industrial use of essential oils can be subdivided into four industrial segments: flavour, fragrance, pharmaceutical and other industries as is shown in Figure 3.

Flavour industry

In the past decades, flavour oils such as citrus, orange, bergamot, lime, herbs, all sorts of spices, vanilla, garlic, onion, anise have experienced an increase in usage in prepared food, confectionery, soft and alcoholic drinks, dairy, bakery, processed meat, fish or animal feed. Oils are used as well by the processed food industry as flavouring, fixatives and food colouring.

According to IAL Consultants, the global sales in the field of flavours was around US\$ 11.6 billion which includes at least 20 different food ingredients with essential oils one of them.

The global market for flavours has expanded rapidly over the last 60 years because of the population growth and a demand for increasing variety of food products containing flavours (e.g. sweet or savoury sauces) and that can be kept longer.

Demand for oils in this sector is set to increase as drink manufacturers, taking up a large proportion of the market, continue to develop trendy fashionable drinks. New cuisines continue to develop in Europe and especially the Asian cuisine using many different spice oils.

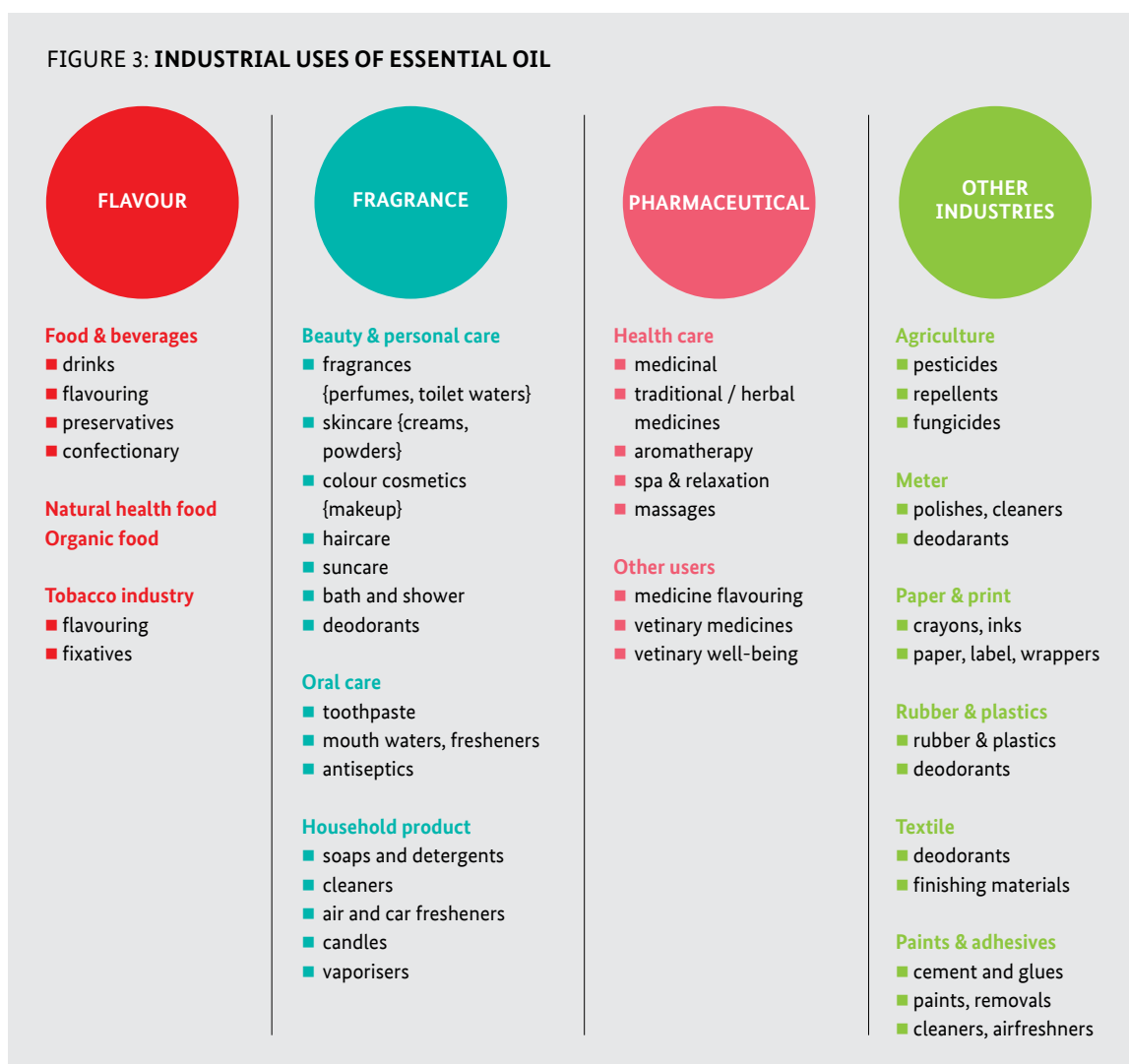
Another use in the flavour industry is to catalyse or isolate a pure aroma chemical for industrial use. For example, the isolation of eugenol from clove oil or cineole from eucalyptus oil. Through new applications of biotechnology, this market is expected to grow as well.

Fragrance and Cosmetic industry

The fragrance industry comprises the segments of beauty and personal care, oral care and household products as shown in Figure 3. The ingredients/raw materials might be of natural origin such as essential oils, or a composition of synthetic chemicals.

The natural product revival encouraged many cosmetic companies to use essential oils rather than

FIGURE 3: INDUSTRIAL USES OF ESSENTIAL OIL



Source: FAO, Seance estimates (2016)

compound fragrances directly into their products. This has become a growing niche market where lemon, orange, lime, mint, patchouli, rosewood, eucalyptus, jasmine, tea tree, ylang ylang etc. were the major beneficiaries and have become widely used fragrances. Europe represents 31% of the global perfume, cosmetics and toiletries market followed by the USA and Asia.

Europe is also the largest producer of cosmetic products, followed by the USA and Japan at a distance. Major EU producers are multinationals such as Unilever (Netherlands / UK), L'Oreal (France), Wella (Germany), Sanofi (France) and Beiersdorf (Germany). These companies have products that virtually cut across all essential oils' industries: pharmaceutical, chemicals, and food or household products.

Pharmaceutical industry

This segment is also dominated by multinationals with North America, Europe and Japan being the three biggest markets. Demand for essential oils grows less fast than the two other segments. Following the green awareness movements in



Europe is one of the largest producer of cosmetic products having multinationals like Uniliver, Sanefi, L'oreal, Wella & Beiersdorf.

Germany, Scandinavia and Switzerland in the 1990s, interest by mainstream 'personal care' product companies that use natural bio-active oils in shampoos and other related products, has driven demand for medicinal oils.

Some new oils for specific bactericide and fungicide treatments have made successful market entry although they are popular among a smaller group of conscious consumers. Companies are certainly interested in new oils with unknown properties. However, large companies want proofs of their effectiveness and constant and continued supplies. Nevertheless, there are opportunities for oils from Nepal.

Aromatherapy

Linked to the natural trend is the aromatherapy market, which has almost doubled in demand for natural ingredients since the 1990s in the Western world. Despite the regulation about claims for the efficacy of medical treatments, the use of essential



Europe represents **31%** of the global perfume, cosmetics and toiletries market followed by the USA and Asia.

oils has revived in recent decades with the popularity of aromatherapy, as an alternative medicine.

Due to the numerous health benefits of essential oils, they are increasingly being explored for the treatment of a variety of diseases including cancer, HIV, asthma, bronchitis, heart strokes, and many more.

Other industries

The agricultural industry is another important area for the application of essential oils, for example in pesticides using e.g. citronella oil. Essential oils with anti-microbial properties are also used in agricultural chemicals as fungicides. These products are organically certifiable and with the global growth in organic farming, markets are growing in this application. Further, new uses as plant anti-stress

agents are being developed. Uses for essential oils in other industries numerous as shown in Figure 3.

1.3 Global players in the flavour and fragrance sector

Essential oils are used extensively by flavour and fragrance houses which are specialised in the composition of both natural and synthetic aroma materials for a large number of industries.

Flavour & Fragrance houses can be categorized into:

1. Large global companies/houses with a sales turnover of over US\$ 2.5 billion selling multinational food, beverage, personal care and other industries. Their products include a great variety of ingredients ranging from sweeteners, flavour enhancers, cocoa ingredients, emulsifiers, preservatives, vitamins, minerals, proteins etc. Essential oils and MAPs (botanicals) are part of their product range, which is different for each company.

The four global players Givaudan, Firmenich, IFF and Symrise are together taking up around 57% of the global flavour and fragrance sales according to Xerfi.

The total market for flavour and fragrance has grown substantially from US\$ 15 billion in 2007 to US\$ 23.9 billion in 2014. There was more demand for diversified flavours in food resulting from a growing population, urbanisation, more convenience food,



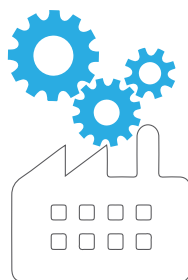
more awareness about health & well-being and a booming cosmetic market. As on a global level, the middle class population will continue to grow and similar demands will arise in China, India and other emerging economies in Asia and Latin America.

2. Medium sized global houses generate an average sales of US\$ 400 million - 2.5 billion. There are eight players who together accounted for 25% of global sales, of which Takasago and Hasegawa are mainly focussed on the Japanese market. The trend of mergers and

TABLE 2: WORLD LEADING FLAVOUR & FRAGRANCE HOUSES, 2010-2014, share based on sales in US\$ million

	COUNTRY OF ORIGIN	MARKET SHARE	TENDENCY 2010 - 2014
TOTAL SALES*			
Large houses			
Givaudan	Switzerland	19.4%	+0.9% ↗
Firmenich	Switzerland	13.6%	+1.4% ↗
International Flavour & fragrances (IFF)	USA	12.4%	+0.5% ↗
Symrise	Germany	11.3%	+1.8% ↗
Medium sized houses			
Takasago	Japan	5.0%	-1.0% ↘
International Wild flavours	Switzerland	5.0%	+0.8% ↗
Mane	France	4.1%	+1.2% ↗
Frutarom	Israel	3.3%	+1.2% ↗
Sensient Technologies	USA	2.9%	+0.3% ↗
Robertet	France	2.1%	-0.1% ↘
T. Hasegawa	Japan	1.7%	-0.6% ↘
Hubao	China (Hong Kong)	1.7%	+0.1% ↗

* Note: Sales of all ingredients for flavour & fragrance (synthetic and natural), Source: Leffingwell & Associates, Xerfi (2015)



Givaudan, Firmenich, IFF and Symrise are together taking up around 57% of the global flavour and fragrance sales according to Xerfi.

acquisitions continued in 2015 with the acquisition of Wild Flavours by ADM (USA) and smaller houses such as Diana by Symrise and Soliance by Givaudan.

3. Small and locally-based houses have a sales turnover of less than US\$ 400 million with the majority being small locally-based companies with sales between 1 -10 million. These houses make specialised flavours or fragrances for small local customers. This group numbers over 800 companies and makes up around 18% of global sales. Smaller houses are family businesses and have been existing since several generations, while other houses are set up by former employees of larger companies.

Major companies/brands operating in the global essential oil industry are Biolandes, HRF, The Lebermuth Company, Young Living Essential Oils, doTerra, Sydella Laboratoire, Farotti Essenze, Moksha Lifestyle Products, Falcon, Ungerer Ltd. and West India Spices Inc.

1.4 Future Outlook

New applications of essential oils are expected other industries e.g. sport equipment, disinfection, pet care, air fresheners, odour repellents, and insect repellents. Interesting oils could be citronella, lime, lemon, basil, chamomile and lavender.

Essential oils might find opportunities in household and cleaning products, especially those oils that have strong antibacterial and antiseptic properties. Regulations regarding product safety are currently more relaxed compared to the other segments (pharmaceutical, personal care and food and beverages).

China, India and other Asian countries continue to grow fast in the coming year which can be largely attributed to continued industrialization, urbanisation, rising income, growing awareness about health, growth in well-being (saunas and health centres) for the aging population in Europe and China. In addition, rising demand for food and drink - especially in China as it ends its one-child policy.

Prospects are bright for herbal health care.

According to BCC Research, the global market for MAPs rose annually by 11% from US \$19.5 billion in 2008 to 32.9 billion in 2013. The rise in herbal health care formulations has driven industrial demand for natural medicines, natural cosmetics and nutritional supplements.

With the current improvements in quality control and regulatory measures in Western countries, it is likely that herbal medicine will gradually be more integrated into conventional medical systems.

Future essential oil production is expected to reach 165,000 tonnes by 2020. Trends in production and domestic consumption in India and China has hugely affected the demand and supply for essential oils in the world. Both countries have enormous and growing populations. This is illustrated by a quickly rising demand for oils for Coca Cola and Pepsi Cola. If natural oils continue to be used in these popular drinks, it remains to be seen whether there will be enough supply of oils/plants in future. According to Grand View Research, the largest increases in citrus oils, mint oils, citronella, clove and other oils NES (Not Exactly Specified) - see Figure 1.

Aromatherapy growth. In Europe and USA, future growth of the trendy and competitive aromatherapy market will continue. However, along with market growth, the number of claims about therapeutic benefits of essential oils has grown as well. There are many new and different claims for one type of oil or for newly invented mixes. Some Internet sellers even suggest that the mixing of oils can be done by consumers themselves.

As there is no clear list of the benefits of essential oils and many consumers are still unfamiliar with the uses, regulatory authorities (REACH, SCCP) are expected to take a closer look at the safety of essential oils. This will slow down growth in the Western markets. In Asian markets, where consumers are more familiar with aromatherapy, continued growth is expected.

Traditional producers need to specialise. As the global essential oil market is expected to grow in the coming years, there are signs that production

no longer meets the demand because natural raw materials (MAPs) are becoming more scarce. Very often, traditional producers have difficulty to keep up with demand using their traditional techniques, unless they specialise in low volume niche markets.

Sustainability will be the buzzword in the next 10 years. Sustainability and environmental issues in the production of oils and reducing the depletion of rare MAPs continue to gain importance in the natural fragrance and flavour industries.

The multinational Firmenich makes a distinction in *natural commodities* which rely on industrial agriculture (e.g. orange oil, lemon oil etc.) and *natural specialities* that are linked to small-scale farming. The prices of both are increasing and for commodities new sustainable price levels (without speculation) may need to be found.

For *natural specialities*, Firmenich controls the sustainability of supply through its Natural Sourcing Sustainability Index (NSSI). This enables them to know their supply chain and provide clear information for customers about the sustainability of their products. Production Partnerships, that link quality suppliers at source with the flavour and fragrance markets, are proving to be more successful in future.



Future essential oil production
is expected to reach **165,000 tonnes** by 2020.



THE US MARKET FOR ESSENTIAL OILS AND OLEORESINS IS
ESTIMATED AT US\$ 525 MILLION IN 2014. ACCORDING TO FROST
& SULLIVAN, THE FLAVOUR INDUSTRY ACCOUNTED FOR HALF OF
THE MARKET WHILE THE FRAGRANCE INDUSTRY (39%) AND OTHER
INDUSTRIES (11%) TOGETHER TOOK UP THE OTHER HALF.





MAPs AND ESSENTIAL OILS IN THE USA

MAPs AND ESSENTIAL OILS IN THE USA

Brief overview

POPULATION: 321 million; growth rate 0.78% (2015)

- 0-14 years: 18.9%
- 15-24 years: 13.6%
- 25-54 years: 39.7%
- 55-64 years: 12.7%
- 65 years and over: 14.9%

Urban population 81.6% of total

OBESITY RATE: 34.9%

ECONOMY: GDP was US\$ 54,400 per capita
Unemployment rate 6.2% (2014)

56.3%

Women in
labour force

17.1% of GDP

Health
Expenditure

2.45 per 1,000

Physicians
density

49,830 (7)

Tourists to Nepal
in 2014



The United States of America

Source: The world Factbook (2016)



2.1 Current size of the USA market

With the revival of interest in natural products, well-being and exotic cuisine partly driven by demographic changes with a larger Asian and Latino population, the USA is among the largest global markets for MAPs and Essential oils. The leading multinational flavour & fragrance houses such as IFF, Sensient Technologies operate in the USA and the country houses leading specialist companies in cosmetics and essential oils such as Nu Skin, Young Living or dōTERRA.

According to Leffingwell & Associates, the US flavour & fragrance market was estimated at US\$ 5.9 billion in 2014 and represented 22% of the global market. The growing diversity in the US population and rising obesity has generated increasing variety in food with developments of new international spicy dishes/snacks, convenience and healthy food and new diet food ranges. New additives and flavour blends in diet food emerged with taste enhancers that should compensate the lack of sugar, salt and fat. In novel food, vitamins, minerals or bacteria are added to support e.g. intestinal functions or to enhance the immune system. In this respect, new varieties of MAPs, spices and essential oils have been playing a role, especially if natural food ingredients are used.

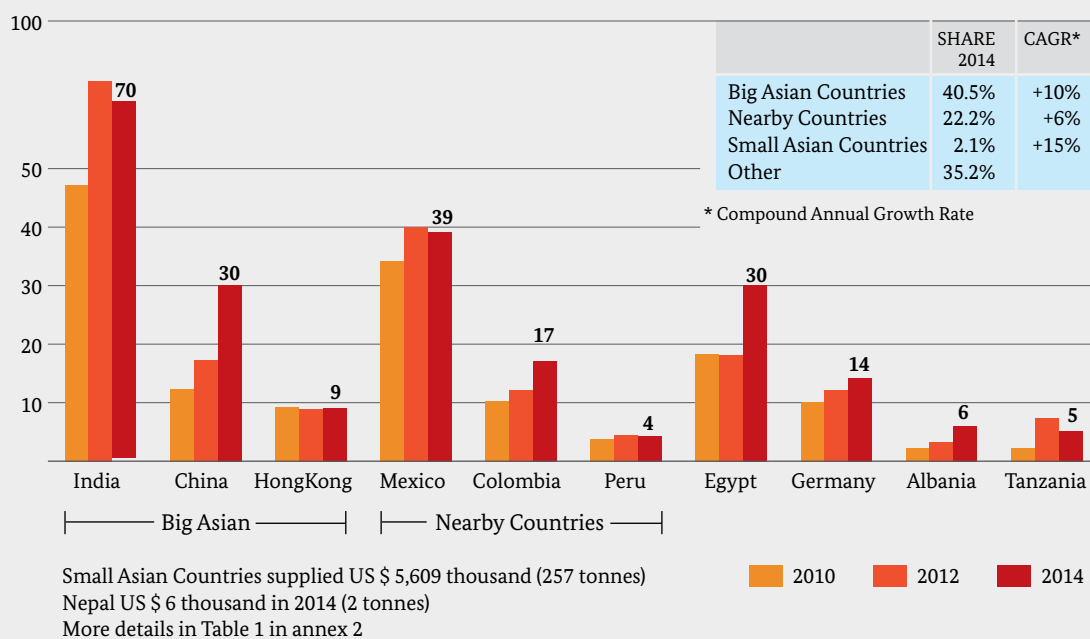
2.1.1 Consumption and Imports

MAPs

No exact sales figures are known about the market for MAPs in the USA, although by quantity the market is much larger than the US essential oil market. As the USA is a net importer, an indication of demand can be obtained from imported MAPs shown in Figure 4 and from trade statistics in Annex 2 - Table 1. In 2014, total US imports of MAPs were \$US 269 million and US exports were \$US 89 million.

- **There was an increasing trend** in the overall market demand for MAPs. Between 2010 and 2014, US imports rose steadily by a CAGR (Compound Annual Growth Rate) of +8%, from US\$ 182 to 269 million. Growth by volume was moderate (+2.2%) from 63,315 to 70,787 tonnes.
- **The USA imported higher valued plants** used for pharmaceuticals and cosmetics mainly coming from China, Hong Kong, Colombia and Germany. More anaesthetic substances, mint leaves, sage, plants for herbal teas, and plants NES (Not Exactly Specified) were supplied to the USA at increasingly higher average values between 2010 and 2014.
- **US imports from India** rose substantially which was mainly psyllium seed husks and to a lesser extent herbal teas and plants NES (Not Exactly Specified).

FIGURE 4 : USA - IMPORTS OF MAPs (121190) BY SUPPLYING COUNTRIES
VALUE IN US\$ MILLION • 2010 -2014



Source: ITC Trademap (2016)

- **Big Asian.** India, China and Hong Kong together form the 'Big Asian' suppliers taking up 40.5% of the imported MAPs by value in 2014.
- **Nearby countries** supplied more (+6%) MAPs to the USA, particularly Colombia (+10%) which mainly supplied basil and mint leaves.
- **Small Asian countries** supplied US\$ 5.6 million of plants NES in 2014 and represented 2.1% of US imports. Malaysia, Vietnam, Indonesia, South Korea increased their exports to the USA by far more than 10% - see Annex 2 - Table 1.
- **Nepal quantity supplies** of plant NES to the USA were 44 tonnes in 2011, but dropped to 2 tonnes in 2014 (US\$ 6,000). In 2014, Nepal ranked no. 71 in the supply of MAPs to the USA.

Essential oils

The US market for essential oils and oleoresins is estimated at US\$ 525 million in 2014. According to Frost & Sullivan, the flavour industry accounted for half of the market while the fragrance industry (39%) and other industries (11%) together took up the other half.

TABLE 3: USA - THE ESSENTIAL OIL MARKET,
VALUE IN US\$ MILLION

	2003	2008	2014	INCREASE 2008 - 2014
Essential oils and oleoresins	335	400	494	3.5%

Source: KPMG, Frost & Sullivan, Murray Hunter, Seacore (2016)

Main essential oils used by US Flavour and Fragrance house and the industrial segments are citrus, mints, spices and herbs and increasingly floral and grass oils, all of which were imported from Latin American, Asian and European countries. Besides being the largest importer, the USA is also a large producer and exporter of orange, other citrus, peppermint and corn mint oils.

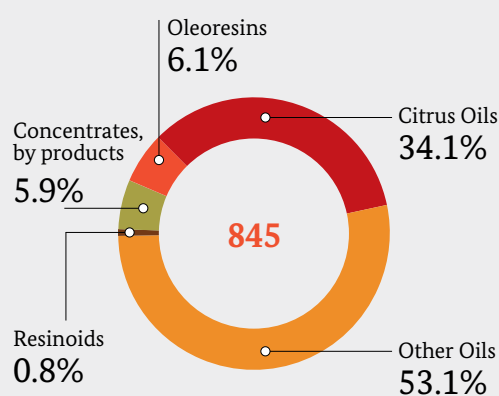
USA imports of Essential oils

In terms of both value and volume, the USA is the largest importer of essential oils in the world. In 2014, the total US imports were \$US 845,175 thousand and despite the high exports of \$US 566 million, the USA is still a net importer.



More citrus oils were imported, which formed **34%** of total US import value in 2014 and 52% of the US import volume.

FIGURE 5 : USA - IMPORTS OF ESSENTIAL OILS (3301)
VALUE IN US\$ MILLION • 2014



Total volume 45,610 tonnes
Nepal US \$ 352 thousand (5 tonnes)
(other mints 15%, concentrates 6%, oils NES 78%)

■ **US imports continued to rise substantially.**

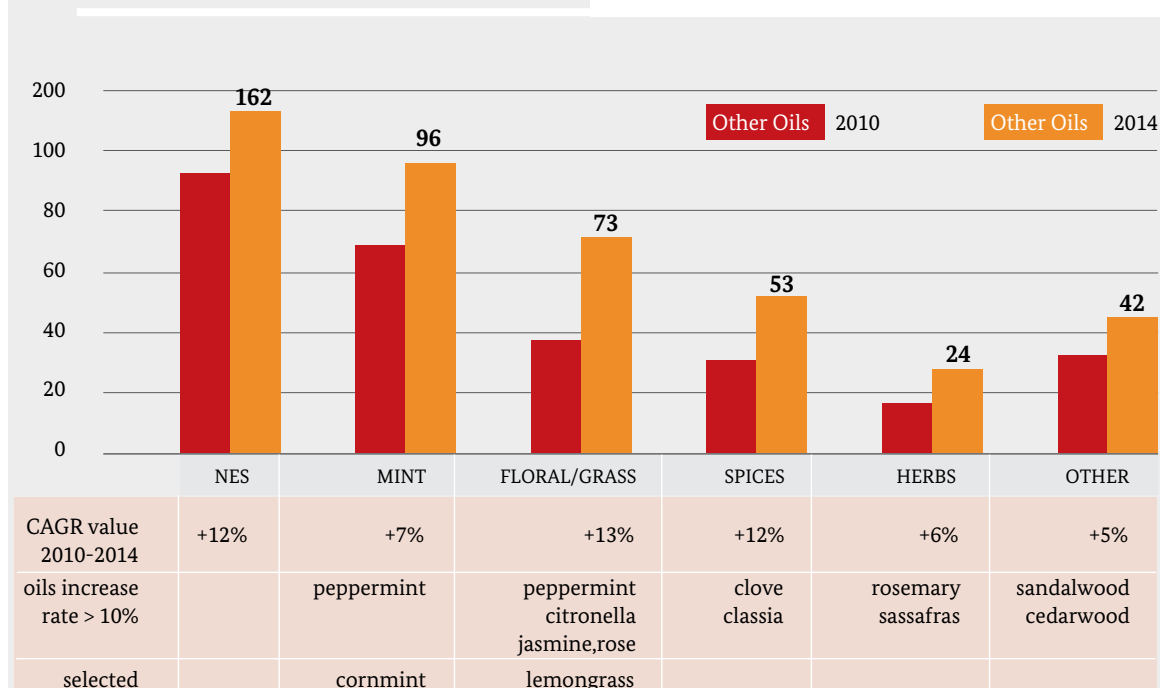
Between 2010 and 2014, imports rose by a CAGR of +9%, from US\$ 560 to 845 million. Growth by volume was +4.2% from 36,759 to 45,610 tonnes.

■ **The USA imported higher valued oils NES mainly** coming from France, Indonesia, China, Australia and particularly from Switzerland. More citrus oils were imported, which formed 34% of total US import value in 2014 and 52% of the US import volume.

■ **Within the 'Other oils',** fast growing categories were Floral & grass (+13% CAGR between 2010 and 2014) with more imports of lavender, citronella, jasmine, rose oils (above +10%) and of lemongrass oil (+8%). Fast growing oils in the Spices category were clove oil (+20%, mainly from Indonesia) and cassia oil (+21%, mainly from China) - see Figure 5 and Annex 2 - Table 2.

■ **India is by far the main supplying country to the USA.** Between 2010 and 2014, supplies from India rose by +6.5% - from US\$ 110 to 151 million. This was mainly corn mint oil (42% of Indian supplies to the USA), concentrates (34%), essential oils NES (12%, including lemongrass) and other citrus fruit oil.

■ **Other Asian countries.** China supplied US\$ 63 million to the USA, a rise of 8% from 2010. China ranked no. 5 and mainly supplied oils NES





(eucalyptus, cassia, lavender, citronella, geranium, garlic, cedarwood, rosewood and anise oils) as well as corn mint oil.

Indonesia ranked no. 7 and supplied US\$ 53 million being +13% compared to US\$ 30 million in 2010. The main oils from Indonesia were oils NES including patchouli, nutmeg, clove and citronella oil. **Sri Lanka** was another sizeable Asian supplier of concentrates and oleoresins (cinnamon leaf and bark, pepper, nutmeg, cardamom, clove, citronella, ginger) and US imports reached US\$ 9 million in 2014, a rise of +16% from 4.3 million in 2010.

- **Nearby countries** such as Brazil, Argentina, Mexico and Canada supplied together US\$ 228 million which was one fourth of total US imports. The largest part of supplies were citrus oils.
- **Nepal supplied 5 tonnes of essential oils** to the USA (see figure 5), valued at US\$ 0.35 million in 2014, which were mainly corn mint oil, oils NES, concentrates, lemongrass oil and paprika oleoresins. By value, US imports from Nepal rose steadily from US\$ 0.06 to 0.35 million. In 2014, volume supplies reached 5 tonnes, from 1 tonne in 2010. In 2014, Nepal ranked no. 67 in supplies to the USA.

Detailed trade statistics can be found in Annex 2 - Table 2.

2.1.2 Production and main players

MAPs

The production of conventional MAPs is unknown. However, the number of organic farms growing herbs or spices was estimated in 2014 at 1,926. The crops were harvested on 20,633 acres (8,350 ha) with a reported sales value of at least US\$ 71 million. Some of these organic farms were mint (oil) producers.

Essential oils

US production of essential oils is on a large scale and is mostly organised efficiently to reduce risks in changing climate conditions. The USA mainly produces citrus oils (orange, grapefruit and other citrus). California is the largest state for lemon growing with 19,000 ha in production, followed by Arizona. The production of orange oil is mainly in Florida and mint oils (peppermint, spearmint and corn mint) in the Eastern States, Idaho and Oregon. According to the USDA, there were 25,535 ha of peppermint cultivation (conventional and organic) and 9,874 ha of spearmint cultivation (conventional and organic) in 2014.

Other oils from the USA include basil oil, cedar leave oil, cedarwood oil, celery seed oil, clary sage oil, dill weed oil, fir balsam oil, lime oil, frankincense oil, sassafras oil, tangerine oil and pine oil.

Main players

Givaudan merged with Quest in 2007 in order to access to a wider customer base. Givaudan is the leading flavour and fragrances company with the head office in Switzerland supplying to the beverage, dairy, pharmaceutical, savoury, confectionary, fine fragrance and other products.

IFF based in the USA New York, is the leading creator and manufacturer of flavour and fragrances products used by other manufacturers to import or improve flavours or fragrances in a wide variety of consumer goods. They have 30 manufacturing facilities in the world. They make 33,000 unique components, 60% for flavours and 40% fragrances.

Firmenich is a large private company with its head office in Switzerland. They are strong in perfumery (fine fragrance), home care and body care. The company also uses essential oils in flavour systems designed by their flavorists and used in beverages, savoury products and in confectionery.

Symrise was founded in 2003 by the merger of Haarmann & Reimer (H&R) and Dragoco, both based in Holzminden in Germany where its head quarters is based. The company has four divisions - fragrances, flavours, cosmetic ingredients and aroma chemicals. Symrise is strong in the beauty and personal-care segment including fine fragrances. In flavours, they are among the five major companies in the USA in the savoury, beverages and confectionery segments.

Sensient Technology Corporation is based in the USA and develops customised technologies preferred by manufacturers of food, beverages, cosmetics, pharmaceutical and household products. Their systems include chiral tropical flavourings helping beverage manufacturers to offer a wide variety of high quality drinks. Sensient has much expertise in beverage formulations.

McCormick Inc makes a unique assortment of spices, seasonings, flavourings, sauces and extracts. The company distributes and sells their own

TABLE 4 : USA - NUMBER OF ORGANIC FARMS PRODUCING SPICES AND HERBS - QUANTITY, VALUE IN US\$ MILLION

CROP NAME	BOTANICAL	PHARMACOPOEIAL NAME	ORGANIC HERBS & SPICES HARVESTED			
			FARMS	ACRES	QUANTITY (POUNDS)	SALES VALUE
Herbs, fresh (field crop)	Various	Various	574	3,050	11,245,613	35,574,375
Herbs, dried (field crop)	Various	Various	37	949	N/A	8,969,420
Garlic bulb (field crop)	Allium sativum	Allii Sativi Bulbi	972	726	4,088,100	6,831,468
Flaxseed (field crop)	Linum usitatissimum	Lini Semen	62	15,204	11,129,700	5,958,109
Herbs, fresh (greenhouse)	Various	Various	200	N/A	1,238,787	5,949,737
Hop strobile (field crop)	Humulus lupulus	Lupuli Flos	31	421	480,480	4,673,715
Cranberry fruit (other crop)	Vaccinium	Macrocarponii Fructus	30	283	1,924,700	3,091,272
Garlic bulb (greenhouse)	Allium sativum	Allii Sativi Bulbi	20	N/A	12,200	26,275
TOTAL			1,926	20,633	30,119,580	71,074,371

products under the brands Clubhouse, Ducros, McCormick, Schwartz, Paul Newman (licence). McCormick supplies to both consumers and industrial segments. Main products are: garlic blends, vanilla extracts, spices and herbs seasonings, pepper and other products.

Kalsec Inc produces herbs, spices, hop and vegetable extracts for use in food, beverages and pharmaceutical applications.

Chr. Hansen A/S is a Danish firm and is expanding their capacity in India and wants to double the company's production capacity for paprika and other spices.

Berje Inc is a main participant in the spice oil segment. They trade and import spice oils under their own name. They make mixtures of flavour and fragrances products and sell a variety of essential oils.

2.2 Consumption and trends in the 3 key market segments

According to the distinction in Chapter 1.2, consumption and use of MAPs and Essential oils can be subdivided into the following segments:

- FLAVOUR
- FRAGRANCE
- PHARMACEUTICAL

2.2.1 The flavour segment

Flavour industry in Food & Beverages

The US market for flavours has expanded rapidly over the last 60 years, mainly the result of demographic changes, economic growth along with a need for more variety in food, snack and beverages. These factors have led to an overall increase in the number of food and beverage containing flavour product/additives and to significant growth in demand for convenience food.

The flavour industry develops sweet, sour, bitter, salty and savoury tastes. There are currently over 2,000 man-made flavour additives, flavour enhancers (e.g. monosodium glutamate), artificial colours, preservatives (sorbates, sulphites or nitrates) and synthetic anti-oxidants.

Flavour products can be distinguished into:

- **Natural flavourings** which are chemicals and volatile oils from plant extracts and made through extraction or distillation
- **Natural identified flavourings** where flavours are synthesised or bio synthesised to natural flavour from plants. The mixes/blends of chemicals have structurally the same flavours as is found in nature. In the USA, companies can describe them 'natural identical'.
- **Artificial or synthetic flavouring** where aldehydes and aromatics are synthesised by controlled chemical processes.

Example of chemical processed vanilla as natural vanilla has become scarce. A known example is the chemical processing to obtain a vanilla flavouring. Natural vanilla has become increasingly scarce in the world. This shortage forced the industry to switch to substitutes. Through extensive R&D, a Japanese researcher has developed a method to extract vanillin from cow excrement, as a new substitute for vanilla flavour. Vanillin is now widely used in the food industry as a replacement of natural vanilla.

New flavour forecasts. Every season new flavours and mixes (e.g. sweet and sour) are developed according to suggested dishes or snacks by flavour forecasts from e.g. McCormick.

Other influences or inspirations come from popular cooking programmes or from one of the most influential chefs in the USA.



In the USA, Latino people (Mexican, Puerto Rican) generally prefer a sweat taste. In 2014, Latino people were taking up one third of the US population. Around 13% of the US population are African-American people and 4% are Asian-American people. All are more attracted to spicy food.

The most popular oils in the USA

The flavour segment accounted for 45% of the total US essential oil market. Within this segment, the

beverage industry held a share of 30%, the savoury food industry 20% and the dairy industry 15%. The remaining 35% was the consumption of oils by the confectionery, bakery, natural health and tobacco industries.

Most mint oils in the USA are largely used in the confectionery industry as one of the largest application - see Table 5.

TABLE 5 : USA - COMMON ESSENTIAL OILS AND THEIR USES IN FOOD & FRAGRANCE INDUSTRIES

ESSENTIAL OIL	MAIN USES
CITRUS	
Lemon	Soft drinks (health, sports, energy), various food flavouring, confectionery, dairy, bakery or Industrial solvents Fragrances for household cleaning products and healthy/organic toothpaste (anti-bacterial, anti-sceptic)
Other citrus	Soft drinks, beverages, industrial solvents, confectionery, bakery, fragrances for household cleaning products.
MINT	
Spearmint Peppermint Cornmint	All mints are used in: Confectionery (gums, chocolate, sugar), chewing gum, bakery, other food flavouring as well as in toothpaste, mouthwash, personal care, tobacco, health care, inhalers, cough drops or for for fragrances in sauna's, hammams, spas in Health centres
HERBS	
Rosemary Basil Celery Coriander Thyme	Food flavouring, health care (various uses), antioxidant properties Food flavouring Food flavouring Food flavouring Food flavouring, antioxidant properties
OTHER	
Eucalyptus Fennel Garlic Lavender Tea Tree Sandalwood	Cough/cold remedies, solvents, cleaning agents, various food flavouring Food flavouring, nutraceutical Food flavouring, nutraceutical Fragrances (bath & shower), toiletries, soap (anti-bacterial, anti-sceptic), relaxing Toiletries, insect repellents, germicides, personal care (bath & shower) Perfumes, incense sticks, skin care

Source: Frost & Sullivan, Seance (2016)

Citrus oils such as lemon, orange, lime, tangerine, mandarin and grapefruit are in demand for soft drinks in the flavour industry. Cold pressed citrus fruit oils are more aromatic than their distilled equivalents. The craze for flavoured alcoholic cocktail drinks has boosted demand for citrus oils.

Other essential oils offer various uses ranging from spicing up a meal or adjusting fruit or vegetable flavours in prepared meals. Oleoresins are mainly used as spices.

Developments and trends in the Natural health food market

Formerly a segment of the total food & flavour market, 'Health food' has now evolved into a market on its own. In 2014, the health food market was worth US\$ 162 billion according to Euromonitor consisting of the categories: Better for You (27%), Food Intolerance (2%), Fortified Functional (37%), Natural Healthy (25%) and Organic (9%). For Nepali exporters the latter two categories are most interesting since natural flavourings are mostly used here.

In 2014, sales of Natural health food valued almost US\$ 54 billion. Despite numerous diet solutions, obesity in the USA remained high at 42%. This has led to a growing concern about the amount of sugar, salt and fat used in prepared food. People still want to lose weight but now turn away from the 'better for you' packed food formulas from companies like weight watchers.

American people started to realize that unprocessed fresh food can be healthy, helps to slim down and contains high proteins in order to perform well in their busy life. With the help of fitness apps on smart phones, younger consumers are more keen to track calories themselves. Reduced fat and calorie food is

no longer desirable to slim down, especially if there is little taste in diets which incited people to eat even more.

This different approach has driven the natural healthy food market which has grown by 2.5% since 2009 reaching US\$ 40 billion in 2014, as is shown in Table 6.

Significant trends in the health food market were:

- **Consumers increasingly check the food before buying.** In the East and West Coasts, conscious consumers of all ages check additives, preservatives and artificial sweeteners, use of pesticides and allergens when buying food. In addition to natural healthy food using fresh ingredients, organic food became more known and consumers accept higher prices - if they can afford it.
- **Sales of organic food has grown** by +4.6% between 2009 and 2014. The keys of success are simple ingredients, good taste, transparency and locally-made. With prices higher than conventional food, organic food continues to grow by +2.8% reaching a value of US\$ 16 billion in 2019. Among younger people, millennials are relatively more conscious about what they eat.
- **Large retailers increase their organic food range.** Following the success of the Whole Foods Market and small organic supermarkets (Kind LLC), large food retailers (Kroger) and mass merchandisers (Target) increased their organic food corners. They offer packaged organic food under private label. Organic Food companies (Kind LLC) and Beverage companies like Talking Rain Beverage Co continue to be successful.
- **Shift away from (low sugar) carbonated drinks to healthier and functional drinks.** Fruit juices (100% pure), mineral water with subtle flavours, sports and energy drinks, flavoured functional drinks and stevia sweetened drinks. In hot drinks, there is

TABLE 6: USA - SALES OF HEALTH FOOD, 2009-2019, VALUE IN US\$ MILLION

						FORECAST				2015/19*
	2009	2010	2012	2014	2009/14*	2015	2016	2018	2019	
Total	46,498	47,500	50,953	53,962	+3.0%	55,109	56,113	58,308	59,378	+1.9%
Natural Healthy	35,385	36,088	38,449	40,066	+2.5%	40,756	41,349	42,675	43,349	+1.6%
Organic	11,113	11,412	12,504	13,896	+4.6%	14,353	14,764	15,633	16,029	+2.8%

Source: Euromonitor (2015)

* Compound Annual Growth Rate

more variety in natural flavoured and herbal teas. To be competitive in this saturated market, companies look for new flavours. There will be opportunities for oils that could be (partly) used in healthy teas/drinks or in exotic teas/cocktails.

- **New food with added benefits.** In addition to health and wellness in food and beverages, US consumers are always on the go and therefore welcome new products that satisfy their hunger, but give them added nutritional benefits to stay healthy and energised. Juices like Sparkling Ice with extra nutrients and antioxidants, coconut water - providing electrolytes, have been successful among busy people and athletes.

2.2.2 The fragrance segment

Fragrance industry in Beauty & Personal care

The US market is the largest market for Beauty & Personal care (BPC) products. Even if France is the main country of fragrances, the culture of a pleasant scent reflecting someone's style or personality is now well developed in the USA. There is great variety in fragrances ranging from floral, fruity, fantasy, gourmand and fresh & clean.

Fragrance products can be divided into:

- Synthetic aroma chemicals
- Essential oils (absolutes, concretes and resinoids)
- Natural aroma
- Molecules

The focus in this study is on natural essential oils. Most common essential oils (citrus, mints, lavender) are used in household products such as soaps and detergents for home or commercial or institutional use. The more expensive natural floral oils are used in the bath & shower segment (shower gels, shampoos, conditioners, toilet soaps), while fantasy fragrances are more prevalent in deodorants.

Key markets for essential oils (patchouli, rose, ylang ylang) in this segment are fine fragrances, cosmetics toiletries and household products (cleaners, air fresheners, candles etc.). Essential oils could also add a taste or smell to medicinal products, tonics or to cough and cold remedies.

Developments and trends in the Beauty and Personal Care market

In 2014, the total US beauty and personal care was valued at US\$ 64 billion. After a period of substantial growth since 2005, the US beauty and personal care market has become more polarised. **The Mass BPC (beauty and personal care) market** was worth US\$ 42 billion consisting of consumers in lower to middle-income ranges and teenagers buying products often with synthetic ingredients. In retailing, mass merchandisers, hyper/supermarkets, drug stores and online sellers are the important outlets mostly selling under private label.

The Premium BPC market consisted either of higher quality products - with the latest technology, or natural products using natural or organic ingredients. In 2014, retail sales of the premium market has reached a value of US\$ 21 billion. The main consumers include people who are more concerned about their looks and want more details on the products. The right product for them has a pleasant smell, fits their style and is beautifully packed - and so they are willing to pay more for it.

Baby boomers (55 year and older) and the large Millennial generation (18 - 29 years) are relatively more curious about the kind of ingredients used or how a product is made and if it is tested on animals. They tend to search online for information with active bloggers passing this on to their friends via social media. Younger people are generally more receptive to a new product review, or the story behind the product. They are less convinced by a product advertisement.

As is shown in Table 7, retail sales in all segments within the Premium BPC has grown faster than the Mass BPC between 2009 and 2014. For the period 2015 - 2019 growth will continue particularly for Premium skin care (+3.7%), sun care (+5.8%) and baby & childcare (3.2%) and bath & shower (3.1%).



IN 2014, THE TOTAL US IMPORTS WERE \$US 845,175 THOUSAND AND DESPITE THE HIGH EXPORTS OF \$US 566 MILLION, THE USA IS STILL A NET IMPORTER.

TABLE 7 : USA - SALES OF PREMIUM BEAUTY AND PERSONAL CARE (BPC), 2009-2019, VALUE IN US\$ MILLION

	VALUE					FORECAST				
	2009	2010	2012	2014	2009/14*	2015	2016	2018	2019	2015/19*
MASS BPC	38,565	39,460	41,656	42,782	+2.1%	42,846	43,001	43,900	44,365	+0.9%
PREMIUM BPC	16,896	17,370	20,044	21,489	+4.9%	21,662	22,205	23,221	24,085	+2.7%
Colour cosmetics	3,877	4,000	4,770	5,436	+7.0%	5,590	5,741	6,031	6,137	+2.4%
Fragrances	4,179	4,347	5,053	5,257	+4.7%	5,256	5,290	5,577	5,739	+2.2%
Skin Care	2,773	2,983	3,617	4,051	+7.9%	4,051	4,141	4,505	4,684	+3.7%
Hair Care	3,043	2,998	3,223	3,243	+1.3%	3,244	3,254	3,432	3,504	+2.0%
Baby & Child	218	233	259	295	+6.2%	310	320	341	352	+3.2%
Bath & Shower	233	253	281	289	+4.5%	293	306	324	332	+3.1%
Sun Care	96	106	131	155	+10.1%	155	162	185	194	+5.8%
Deodorants	88	99	128	137	+9.6%	138	140	144	145	+1.2%
Sets & Kits	2,389	2,349	2,581	2,626	+1.9%	2,625	2,647	2,679	2,998	+3.4%

Source: Euromonitor (2015)

* Compound Annual Growth Rate

Significant trends in the premium BPC (beauty and personal care) market were:

- **Natural beauty in make-up and colour cosmetics.** A trend towards a chic-natural look contrary to the heavy make-up look. This trend was launched by movie stars like Jennifer Aniston and Reese Witherspoon wearing very little cosmetics.
- **Multinationals have taken over the natural and grassroots companies** such as the Body shop, Kiehl's, Joe Malone who started selling naturally-scented soaps and lotions in the 1970s/1980s based on sustainable procurement. Now the Body shop and Kiehl's are taken over by L'Oreal and Joe Malone. Aveda and Frederic Malle are owned by Estee Lauder. Insiders report radical changes taking places in the Body Shop and in Jo Malone. The Body Shop now has corners in department stores, mass merchandisers and airport shops.
- **Premium products by smaller companies.** Even if large multinationals such as Proctor & Gamble, L'Oreal, Unilever, Estee Lauder took up 40% of the US BPC market in 2014, smaller companies (processors, retailers) kept their position by innovation. They either offer special BPC products or premium BPC products via different kinds of shops e.g. 'Look Boutiques' with fragrance testing and selling online.
- **Non-specialised retailers expand in beauty.** Natural food supermarkets (Whole Foods) extend their beauty department. In addition to the brands Nuxe, Pur Minerals and Too Faced, Senna - new

brands are still popping up.

- **New products in skin care with combined functions.** A growing niche market is skin care products for busy people saving time by offering more advantages that are combined. Using one cream that hydrates the skin, gives sun protection and smoothenes the skins (anti-wrinkle).
- **In hair care, women returned to the use of shampoos and conditioners** being less damaging to their hair and enough caring. The trend has been at the expense of styling agents such as sprays and gels, or perms using chemicals. Particularly the Ethnic population were attracted to hair care products using natural ingredients such as argan oil, shea butter, kuku oil (from Hawaii) or coconut water. The brand OGX (organix) has been particularly popular and offering a wide range of BPC products.
- **Growth in professional services.** With the emerge of new companies that offer beauty services (hairdresser, manicure, teeth, eyebrows, feet etc..) and relaxation services (massage). Affluent consumers are spending more on these professional services and buy less BPC to use at home. According to Euromonitor, this has restrained sales hair colouring products in the USA. Along with the growing desire for relaxation in the major cities, massage services are likely to become more widespread with affordable centres such as Massage Envy Spa.
- **Sales of sets and kits** has become a large segment with US\$ 2.6 billion in 2014 and is expected to

grow further by +3.4% as shown in Table 7. These are ranges of beauty and care products selected by professionals and sold by direct selling (e.g. Avon), infomercials or through the home shopping channels (QVC) and by online sellers.

The US fragrance market is expected to slow down because celebrity brands, fragrances of designers and shoe brands have overwhelmed the market. With new fragrances in laundry detergents, shower gels, body lotions, after shave creams and many other products, people are exposed to an abundance of different scents that are not pleasant anymore.

Overkill could lead to consumer apathy. Since up to 100 new fragrances are launched every year, consumers have become confused. This has affected the traditional perfume segment. As perfumes could cost up to US \$100 a bottle (100 ml), consumers tended to keep their preferred personal perfume for special occasions and use a much lower-priced scented body splashes/shower gels for every day.

The rich fragrance culture of Europe is less common in the USA and perfumes will be mainly destined to affluent consumers who appreciate

a unique scent (flower, woody or spicy) and an interesting story behind the artisanal perfume making. For less affluent consumers or frequent travellers, smaller bottles (30 ml) will be increasingly introduced in this saturated market.

A growing niche is fragrances for affluent men who increasingly buy perfume by themselves (instead of their wives/friends) in order to enhance/emphasize their own style. The sales of premium fragrances will reach US\$ 5.7 billion in 2019, which still represents 25% of the premium BPC market, but will grow at a slower annual rate of +2.2% - see Table 7.

Developing a fragrance inspired by a film or a book seems to be taking hold in the perfume segment. The Oscar winner Cate Blanchett's for The Aviator became the embodiment of Giorgio Armani's bestseller Si, released in 2013. Si is a refined perfume in which fruity and woody flavours are blended. It is visualized by a sparkling floral heart. Celebrity inspired fragrances continue to be popular among consumers. Lancôme is represented by Penélope Cruz, Julia Roberts and Kate Winslet. Natalie Portman is Miss Dior, Keira Knightley Coco Mademoiselle, while Clémence Poésy tells Chloé's Love Story.



2.2.3 The pharmaceutical segment and aromatherapy

The health care industry

The growing interest in natural health care is helped by medical research looking for new ingredients, plant-based proteins, energy boosters, antioxidants and supplements that can contribute to heart health, weight management, digestive and diabetic health of American people in order to perform well in a fast society with long working days and busy modern lifestyles.

There is a pill fatigue among the growing elderly population. Conscious consumers are looking for 'clean label' products containing fewer ingredients that are 'whole' i.e. minimally processed, plant-based and easily digestible. This has created

opportunities for innovation in new herbal medicines and aromatherapy giving more targeted and gentle solutions.

Developments and trends in the Herbal / Traditional medicine market

In 2014, the total US health care market was the largest in the world and estimated at US\$ 60 billion according to Euromonitor. The US healthcare system is the most expensive in the world, but underperforms in terms of measures including accessibility and efficiency. Along with the growing elderly population and obesity, the concern about health and wellness is improving.

Herbal/Traditional medicines are an increasingly popular option for self-care and the market reached a value of US\$ 4.5 billion in 2014 - see Table 8.

TABLE 8 : USA - SALES OF HERBAL/TRADITIONAL MEDICINE, 2009-2019, VALUE IN US\$ MILLION

	Value					FORECAST				
	2009	2010	2012	2014	2009/14*	2015	2016	2018	2019	2015/19*
Total	3,969	3,934	4,124	4,556	+2.8%	4,712	4,844	5,066	5,159	+2.5%
Dietary Supplements	2,909	2,884	2,999	3,337	+2.8%	3,461	3,569	3,745	3,815	+2.5%
Cough, Cold, Allergy	509	488	515	593	+3.1%	614	629	654	665	+2.0%
Topical analgesics	161	165	171	193	+3.6%	203	208	218	222	+2.3%
Medicinal Teas	97	102	111	122	+4.6%	125	127	130	132	+1.4%
Digestive remedies	121	117	114	105	-2.8%	102	101	103	104	+0.4%
Dermatologicals	92	90	96	96	+0.7%	96	97	97	98	+0.4%
Calming & Sleeping	33	41	65	52	+9.1%	51	52	56	58	+3.3%
Paediatric dietary	30	31	36	40	+6.1%	41	43	45	46	+2.9%
Smoking cessation	12	12	13	13	+0.4%	13	13	13	13	0.0%
Tonics, Nutritive drinks	5.2	5.2	5.6	5.6	+1.8%	5.6	5.8	6.1	6.2	+2.3%

Source: Euromonitor (2015)

* Compound Annual Growth Rate

The trend towards natural wellness drives the Herbal/Traditional market where consumers prefer gentle solutions to treat ailments rather than using harsh synthetic remedies. For similar reasons consumers have chosen for natural calming & sleeping remedies and herbal medicinal teas.

Sales of calming & sleeping declined in 2012 due to new sleep aids from Procter & Gamble (ZzzQuil) containing diphenhydramine and from Johnson&Johnson (Simply Sleep) and doubts about the efficacy of natural sleeping aids.

Herbal/Traditional medicines are increasingly prevalent in paediatric care, still being a small category. Many parents prefer natural products for their children with regards to natural Cough Cold and Allergy remedies.

Dietary supplements are the largest category holding a 73% share of the market and continuing to be the primary driver of growth. Consumers will continue to turn to these products to prevent health conditions avoiding the high cost of care.

Echinacea was the best-selling standalone supplement, with sales of US\$ 167 million in 2014. The supplement has been used to assist in fighting cold, infections and reinforcing the immune system during the winter season.

Ginkgo is often used for memory disorders including Alzheimer's disease. It is also used for memory loss, headache, ringing in the ears or vertigo that seem to be due to reduced blood flow in the brain, especially in older people. The list of other uses of ginkgo is very long because the tree is very old.

St. John's Wort is most commonly used for depression, anxiety, tiredness, loss of appetite and trouble sleeping. Its oil can be used for skin care to treat bruises, inflammation, muscle pain, burns, wounds or bug bites. But the skin can become very sensitive when exposed directly to sunlight.

Supplement ingredients, such as St John's Wort and ginkgo biloba were questioned after researching their efficacy and side effects. However, the industry has been able to provide more evidence in 2013 which has resulted in sales increases of both recently.

Evening primrose oil is used for skin disorders such as eczema, psoriasis, and acne. Some people use evening primrose oil for chronic fatigue syndrome or for preventing high blood pressure (pregnant women). The oil is used for many other remedies and in the industry it is used in soap and cosmetics.

Significant trends in the herbal/traditional health care market were:



The total US health care market was largest in the world in 2014.

- **The rising popularity of traditional Chinese medicine** in the USA with the Chinese pharmaceutical company Tasy expanding their business in North America. The Blue Ridge Center specialises in Chinese medicine and studies to raise plants in the USA that meet the quality control standards set by clinical practitioners.
- **Multinationals take over Chinese companies.** For example, ReckittBenckiser Plc (RB) purchased the Chinese firm Guilong (Golong Medicines), which is known for its herbal pharyngeal remedies Manyashuning and Slow-Yan Shu Ning. Bayer sees herbal/traditional products as a significant part of its business strategy, bought the Chinese herbal dermatologicals' manufacturer Dihon Pharmaceutical.
- **Curcuma as one of the new herbal medicines.** It is included in food supplements for joint health, cholesterol management, liver support or inflammation. The market will be driven by the introduction of new herbal medicines from China and other countries.
- **Continued growth in awareness is expected** and lesser-known supplements are likely to become more accepted if in coming years, if their efficacy can be demonstrated and if there are

	2014	2019
Dietary Supplements	3,337	3,815
Combination Herbal Traditional Dietary Supplements	779	845
Echinacea	167	189
Evening Primrose Oil	38	43
Garlic	105	93
Ginkgo Biloba	90	86
Ginseng	86	91
St John's Wort	55	58
Other Herbal/ Traditional Dietary Supplements	2,018	2,410

no significant side-effects or allergic reactions. Therefore, the herbal/traditional dietary medicine market is expected to grow further by a 2.5% CAGR from 2015 and will reach an estimated value of 5.1 billion in 2019.

Aromatherapy

■ **Continued popularity of aromatherapy.** Through promotion campaign and direct selling via social media, the awareness and popularity of aromatherapy is still rising and moving more to the mainstream market. In the USA, the external use of essential oils for well-being, healing purposes and the reduction of stress is the mostly recognised form of aromatherapy. People often use it by diffusers, burners, bath & shower, sauna or massage. Eucalyptus, cloves, basil, tea tree oil were the most well-known oils for this purpose.



US aromatherapy is taking up
a **10%** market share for essential oils.

The 10 most popular oils and their recommended uses were as follows:

1. **Lavender oil** for Scars, Stress, & Tension Headaches. Clean & Deodorize.
2. **Peppermint oil** for Headaches, Indigestion, and Energy.
3. **Eucalyptus oil** for Congestion Relief, Inflammation, & Pain. Insect Repellent.
4. **Tea Tree oil** for Candida, Acne, Chest Congestion, Disinfecting, & Repelling Insects.
5. **Rosemary oil** for Hair Loss, Muscle Aches, and Sinus Congestion.
6. **Lemon oil** to bring Fresh Energy, and Clear the Mind. Clean & remove gum, oil, & grease.
7. **Frankincense oil** for Spiritual Healing, Self Esteem, Personal Power, Circulation, & Sleep.
8. **Clove Bud oil** for Nausea, Flatulence, Bronchitis, Arthritis, Rheumatism, Toothaches, Diarrhoea, & Infections.
9. **Cedarwood oil** for Acne, Bronchitis, Sinus Congestion, and Harmony & Balance.
10. **Ylang Ylang oil** for High Blood Pressure, Stress, Anxiety, & Mood Swings.

More on uses of pure essential oils in aromatherapy in the USA can be found at:

Jade Bloom - see at
<https://jadebloom.com/skin/frontend/ux-templates/pearlwhite/images/JadeBloomEssentialOilsReference.jpg>

IN 2014 : THE MOST POPULAR PURE OILS FOR AROMATHERAPY THE USA WERE:

	CITRUS	SPICES	HERBS	FLORAL & GRASSES	ROOT/ RHIZOME	BERRIES/ FRUIT	OTHERS
CATEGORY	Lemon	Clove	Peppermint	Lavender	Ginger	Frankincense	Eucalyptus
	Orange Grapefruit Bergamot	Cinnamon	Tea Tree Rosemary Patchouli Wintergreen Basil Chamomile	Lemongrass Ylang Ylang Rose Geranium	Valerian Spikenard	Juniper	Cedarwood Sandalwood

Young Living - including mixes of oils - see at https://blaylocklemons2lemonade.files.wordpress.com/2015/01/img_0231.jpg

Essential oil chart 1 - see at <http://image.slidesharecdn.com/essential-oil-info-chart-131118160335-phpapp02/95/essential-oil-chart-1-638.jpg?cb=1384790852>

Essential oil cross reference chart - see at <http://www.abundantthehealth4u.com/v/vspfiles/photos/1213-3.jpg>

Awareness oils from Nepal

Some of the selected oils from Nepal show up in charts such as wintergreen, chamomile, lemongrass, ginger, valerian, spikenards and cinnamon. However, the country of origin is often not mentioned on the websites, information kits or other promotional material and presumably many consumers think that these oils are made in India or in 'Asia'. Curcuma is a more recognised spice for cooking and dietary supplements, but curcuma oil rarely shows in aromatherapy charts.

With regards to Nepal, American people like the country for its natural beauty and its authenticity. Americans are the largest Western tourist group (49,830 visitors in 2014) and have even more sympathy for Nepal after the earthquake in 2015.

However, among consumers who did not visit the country, there is little awareness about essential oils that are made from Nepal with local cultivated or collected MAPs.

Suggested essential oils from Nepal for aromatherapy can be found in Annex 3.

2.3 Future potential

The US economy has improved since 2012/2013 but there are still uncertainties related to real wage growth, uncertainty about future politics with the elections in November 2016. Nevertheless, a continued growth of the flavour and fragrance market by 4.6% is expected. According to the Freedonia Group, the US market will reach \$7.1 billion in 2017. Flavours are still taking up the lion's share of the market. MAPs and Essential oils will take up an estimated 10% share of the market and particularly essential oils are expected to show the fastest growth.

Flavour

Consumer interest in organic food and natural aromas continue to fuel demand for essential oils and natural extracts. They are proven to have antioxidants and therefore believed to prevent the occurrence of neurodegenerative diseases.

Growth rates of natural aromas will be higher than of aroma chemicals. Key trends predicted for the coming year include the continuing acceptance of functional, vegetarian food with high proteins and anti-oxidants, ethnic flavours in the ready-to-eat processed food market and newly flavoured drinks.

Flavour houses and processors should stay competitive by developing distinctive flavours that are tailor-made for the food industry. Consumers are always on the go and want to satisfy their hunger staying healthy and energised.

Sustained acceptance of organic food and health food using natural ingredients by American people despite its price difference with conventional food. A continued growth is expected on the long term, especially for nutraceuticals to stay fit and energetic everyday.



The millennials are a key target group and they are receptive to new healthy and organic products. Many of them will start families and their children will be raised with organic food as well.

Rising interest in food and cooking by people in the urban East and West coast which is driven by the introduction of unknown flower or spicy flavours that are discovered by cooking celebrities, cooking channel TV programmes or by bloggers.

More R&D and new techniques. In the industry, more investment in R&D will be done to meet the increasing consumer demand for variety: new technologies using supercritical carbon dioxide CO₂ extraction techniques as efficient replacement for solvent extraction; innovative technology to extract antioxidant components from MAPs.

Fragrance

Similar as in the flavours, trends in the US market demand novelties from processors and fragrance houses. There is great variety in fragrances ranging from floral, fruity, fantasy, gourmand and fresh & clean. Benefiting from increased interest among Americans in natural beauty, growth in fragrance will mainly come from premium skin care, bath & shower and new fragrance blends for body washes, perfumes and colognes.

In the smaller household cleaning segment, growth is expected as well in all cleaning product categories whereas, sales of scented candles, which also fall within the household cleaning segment, was moderate according to Euromonitor.

In hair care, older people will be concerned with thinning hair as a result of overtreatment and overstyling for many years. With the growing number of older and grey haired men and women along with the ageing population in the USA, hair repair and anti-aging hair products are likely to become more popular in future. Young consumers, who buy anti-aging skin care products for prevention, may also be attracted to new hair care products.

Pharmaceutical

The rising sales of nutraceuticals is not over yet and is expected to reach US\$ 4 billion in 2019. The market is driven by the estimated 77 million Baby Boomers who want to stay active in life, healthy and fit. Herbal nutraceuticals can reinforce the immune system, work as an anti oxidant, provide relief during menopause for women, prostate problems for men or provide cardiovascular and mental health. Bestsellers in 2012/2013 were black cohosh (menopause), yohimbe (athletic and sexual performance), cranberry (urinary tract infections), senna (laxative), garlic, stevia, ginkgo, ginger and curcuma according to SPINScan data.

POSSIBLE USES OF OILS FROM NEPAL IN FLAVOUR INDUSTRY

- **New blends can be developed** to achieve different (exotic) flavours in food by using oils from Nepal such as timur, ginger, curcuma, asparagus, cinnamon, black cardamom e.g. for the Latino, Asian and Black people, and by using chiuri butter as a substitute for palm oil.
- **In confectionery,** ginger, cinnamon and timur can be used in bakery, pastries, biscuits and cereal bars. Citronella, Palmarosa and Wintergreen can be used in chewing gum, candies and puddings and yoghurts.
- **Healthy drinks, sports and energy drinks** without sugar could use different flavouring blends for e.g. cinnamon, ginger, lemongrass or palmarosa oils. Timur being rich in linalool; it can be used in soft drinks.
- **Special flavours in alcoholic drinks** can be developed using the essential oils of chamomile, ginger, lemongrass, citronella, valerian (beers, liquors), jatamansi (e.g. in strong beer) and calamus.
- **New tastes in herbal teas** or hot drinks using spicy oils such as ginger, curcuma, cinnamon, timur oil, rhododendron oil or boiled butternut. According to the US Tea Association, Americans consumed 80 billion cups (13.6 billion litres) in 2014. Around four in five people drink tea with millennials strongly represented. Around 84% was black tea, 15% green tea. The USA has become the second largest world importer of tea after Russia.

Essential oils and extracts are active ingredients in nutraceutical formulations. It has been scientifically proven that all oleoresins and essential oils have functional components that are antioxidants and therefore believed to prevent the occurrence of neurodegenerative diseases.

Topical analgesics will continue to be a strong driver of growth. Greater preference for targeted relief and pill fatigue among the growing elderly population, along with the increasing innovation and new herbal/traditional medicines, will continue to support growth.

Herbal/traditional calming and sleeping products are expected to return into the focus of consumers. Once products like ZzzQuil have become established,

consumer using sleeping aid regularly prefer softer sleeping aids with less side effects.

Aromatherapy

The US aromatherapy market is estimated at around US\$ 50 million in 2014, taking up a 10% share of the market for essential oils in the USA. In the coming years, this health and wellness concept will gain more recognition as self-medication by natural healing. Aromatherapy will further develop as a segment in the premium BPC market. Consumers are more exposed, educated and knowledgeable about this new concept via their practitioners or via health and beauty stores, department stores, drug stores or via professional BPC services and the Internet.



POSSIBLE USES OF OILS FROM NEPAL IN FRAGRANCE INDUSTRY

- **In hair care**, natural ingredients from Nepal could be jatamansi oil, ginger oil, chamomile and rhododendron oil.
- **In skin care products with combined functions**, oils like rhododendron, being suitable for skin care, hair care and natural fragrance, could be used. Butternut, an alternative for shea butter is suitable to moisturize the skin, used for hair care and as a daily soap. Lemongrass can also be used for more functions e.g. skin care, deodorants, bath and shower and tonics.
- **In bath & shower**, Nepali oils such as chamomile, mentha, cinnamon, wintergreen (toothpaste) can be used. Oils that can be used in soaps include citronella, palmarosa, lemongrass and chiuri.
- **In fragrance** unique scent (flower, woody or spicy) could be obtained by using cinnamon oil, jatamansi, timur, chamomile, wintergreen, citronella, valerian and calamus oil. While ginger and citronella could be odours that appeal to men.

POSSIBLE USES OF OILS FROM NEPAL IN PHARMACEUTICAL INDUSTRY

- **In Nutraceutical** - powder, extracts or oils of ginger, curcuma, cinnamon could be interesting in the herbal medicine segment for the immune system. Whereas citronella, jatamansi, lemongrass, timur, wintergreen and palmarosa could contribute to someone's brain & mental clarity. Oils like black cardamom, curcuma, picorhiza or calamus could work as an anti oxidant.
- **In Topical Analgesics** - oils like wintergreen, jatamansi, menthe, chamomile, valerian, timur, rhododendron and ginger oils could be used in medicines providing relief.
- **In Cough, Cold and Allergy** - chamomile, menthe, timur, jatamansi, curcuma, ginger, cardamom and rhododendron could be used in capsules, drops or in herbal teas.
- **In Calming & Sleeping** - valerian and chamomile are well-recognised sleeping aids, while jatamansi is an Ayurvedic medicine to fight insomnia.
- **For Digestive remedies** - asparagus, menthe, timur, palmarosa, lemongrass, cardamom, curcuma, ginger, chiuri and chiraita can provide relief.

Details on other possible uses of the selected oils can be found in Annex 3

Interesting niche markets

- **Other industries:** flavour and fragrance houses have expanded their product ranges to the household product industry and other industries including natural pesticides, fungicides, dyes, natural botanical extracts, odour agents, natural preservatives and UV absorbers.
- **Natural insect repellents.** Lemongrass and citronella are used in repellents to keep away insects. Citronella has been found effective on a species of mosquito, called *Aedes Aegypti* whose bite causes the dreaded Yellow Fever and, recently, the Zika Virus in Latin America.
- **Specific applications.** Citronella, lime, lemon, basil, lavender or chamomile oils could be used for sports equipment disinfection, pet care, air fresheners or odour repellents.
- **Boswellia serrata** is discovered to be a herb that has a dramatic impact on cancer and can 'teach the body how to heal itself' said Dr. Ajay Goel, PhD, director of epigenetics and cancer prevention at Baylor Research Institute in Dallas, TX. *Boswellia* is distributed in Nepal, India, Northern Africa and Middle East and it grows in tropical to subtropical regions of Nepal.
- **Ginger roots.** A recent study demonstrated the benefits of ginger root capsules in treating chemotherapy-induced nausea and vomiting.

2.4 Prices and distribution

2.4.1 Prices

Consistent quality remains more important than price. Buyers from flavour and fragrance houses are likely to buy oils from certain growers or companies because they want a consistent tasting, flavour or fragrance. As most houses create their outspoken/unique product for their industrial customer, a consistency in quality is more important, then slight changes in price.

For example, mint oils are very powerful and usually requires only small amounts in end products to produce the desired effects. The price of the oil is not a major component of the price of end products. One kg of mint oils will flavour nearly 80,000 sticks of chewing gum. For this reason, small to moderate changes in the price of mint oils often does not affect the ordered quantity.

Growing insecurity due to unforeseen circumstances.

On the other hand, rising demand and unsure climate conditions have created more insecurity. Prices could drastically change if there is a sudden scarcity in MAPs due to extreme hot or cold weather conditions. Any crop failure because of the climate is likely to result in short and long-term disruptions followed by a higher prices. For example, hurricanes in Florida could largely damage orange and grapefruit crops.

THE WORLD PRICES OF ESSENTIAL OILS PER KG ARE MONITORED AND PUBLISHED REGULARLY BY LARGE INTERNATIONAL FLAVOUR & FRAGRANCE HOUSES SUCH AS ULTRA INTERNATIONAL AND ITC INSIDER. NOTE THAT PRICES FOR ORGANIC OILS CAN BE 2-3 TIMES HIGHER THAN CONVENTIONAL OILS.

Post harvest problems arise due to the fuel crisis or natural hazards. For example, due to the earth quake in Nepal the price of wintergreen oil (from US\$ 40 to 80 per kg) has more than doubled by the end of 2015.

Lack of raw material. Prices could also change because of a depletion or a sudden demand of a particular raw herb (MAPs) for other/new industrial purposes. This reduces the availability of raw materials for making essential oils e.g. the increased use of star anise for Tamiflu (against the avian flu, swine flu, SARS) by Swiss Manufacturer 'Roche' driving up the prices for star anise oil.

New synthetic alternatives. Additionally, prices of high volume oils are under pressure as R&D in new synthetic alternatives continues to introduce new oils similar to mint or citrus oils entering the price-conscious market. For US producers of mint there is much competition from Asian companies in high volume oils including corn mint (*mentha arvensis*).

The types of oils used in large quantities in the USA such as citrus oils and mint oils are much lower compared to other oils. The world prices per kg are monitored and published regularly by large International flavour & fragrance houses such as Ultra International and ITC Insider. The prices in Table 9 are wholesale for quantities of 25kg or more unless otherwise stated. Note that prices for organic oils can be 2-3 times higher than conventional oils.



The herbal/traditional dietary medicine market is expected to grow further by a 2.5% CAGAR from 2015 and will reach an estimated value of **5.1 billion** in 2019.



TABLE 9: USA - COMMON ESSENTIAL OILS AND THEIR PRICES FROM DIFFERENT SUPPLYING COUNTRIES

ESSENTIAL OIL	MARKET PRICES PER KILO IN US\$ (IMPORTER/TRADER LEVEL) IN DECEMBER 2015			
CITRUS				
Lemon	Argentina	35 - 58	Italy	36 - 58
	South Africa	30	Spain	30
	Brazil (lime oil)	40		
Other citrus	India (lime oil)	50	USA (grapefruit)	27 - 29 (white)
	Brazil (orange oil)	7,50		17 - 19 (coloured)
	Mexico	47 - 49	USA (orange Florida)	7,50
	South Africa	6,50	Italy (orange - blood)	6
MINT				
Spearmint	India	19 - 20	USA (ORGANIC)	112
Peppermint	India	26 - 28	USA (ORGANIC)	90
Cornmint	India	12 - 13	India (ORGANIC)	52
Menthol	India (crystals)	15 - 19		
HERBS				
Sage (clary)	Egypt	82 - 150	Croatia (ORGANIC)	240
Basil	Comores	125	Egypt (ORGANIC)	187
	Blue	670		
Chamomile (German)	Morocco (wild)	450	Nepal (ORGANIC)	780
	Egypt (blue)	1,000	India (ORGANIC)	1,250
	UK	1,000		
Chamomile (roman)	Egypt	na	Hungary (ORGANIC)	1,500
Parsley	Egypt	75 - 80		
Coriander	Spain (red)	120	Russia (herb/seed)	95 - 140
Thyme				
SPICES				
Clove leaf	Indonesia (73-82%)	11 - 13	India (ORGANIC)	75
	Indonesia (100%)	46		
	Madagascar	17		
Cinnamon leaf	Sri Lanka	70 (1kg lots)	Sri Lanka (ORGANIC)	110
	India	20		
	China (cassia)	35 (70/1kg lots)		
Cardamom	Guatemala	185 - 210		
FLORAL and GRASS				
Eucalyptus	China	12	India (ORGANIC)	46
	South Africa	35	Brazil (ORGANIC)	52
Patchouli	Indonesia	40 - 70	Indonesia (ORGANIC)	175
Geranium	Egypt	120 - 155	Egypt (ORGANIC)	375
Petit Grain	Paraguay	58 - 98	Paraguay (ORGANIC)	110
Rose	Bulgaria	5,750	Madagascar/France (rose/geranium)	225
Sandalwood	India	2,950	Australia	2,025
Vetiver	Indonesia	165 - 210	Indonesia (ORGANIC)	450
Citronella	China	23 - 53	Sri Lanka (ORGANIC)	100

Continued: Table 9

Essential oil	Market Prices per kilo in US\$ (importer/trader level) in December 2015			
Lemongrass	Sri Lanka	40	India (ORGANIC)	63
	Indonesia	16		
	India	18		
	India	16 - 37	Madagascar (C. giganteus)	55
		(container - 1 kg lot)	Nepal (ORGANIC)	75
Palmarosa	India	38 - 130	India (ORGANIC)	70
		(container - 1 kg lot)		
OTHER				
Lavender	Bulgaria	105 - 110	France (lavandin grosso)	34
	China	95	France (lavandin maillette)	142
	Russia	100		
Garlic	China	130		
Ginger	China	105	India (ORGANIC)	270
	Indonesia	95		
	India	80		
Tea Tree	Argentina	47	China	23 - 25
	South Africa	45	Spain	30
			Australia (ORGANIC)	90

Source: ITC Insider, Ultra International (2016)





Increased energy cost to produce and ship raw material has an impact on the essential oil and MAPs prices. Producers and consuming industries were forced to increase efficiency and by lowering their margins, which could be done for a limited time. Worries about increasing prices remain, which in the USA has resulted to use e.g. cheaper imported cornmint instead of spearmint, even if flavour houses preferred spearmint because of its higher quality and stronger taste and flavour.

Typical herb or spices oils and flower oils, giving a low yield, require large amounts of raw material, water and are labor intensive. Their exclusive character command higher prices and low export volumes. Examples are rose oil, sandalwood oil and chamomile oil which are mostly used in fine perfumery.

Margins

Traders and agents in the USA usually ask a commission between 5-10%. For exclusive fragrance houses their experience and knowledge is still important. But as large houses increasingly sell/ deal directly with consuming industries, retailers and consumers, their margins are now under pressure.

Brokers, who effectively trade in documents, get a 3.5% commission while small distributors or brokers who buy and stock the oil aim for 7.5%.

Processors/distillers add up margins between 25 - 100% depending on testing, how they improve the quality of the oil, rectification or further developing the oil into a specific product for the flavour & fragrance house or consuming industry.

Margins for (free-lance) direct sellers working for fragrance houses or industries vary between 35 - 45%, while retail margins usually are higher 60 - 100% as the level of in-store promotion is higher and retailers often have high costs if they are on the high street.

TRADERS AND AGENTS IN THE USA USUALLY ASK A COMMISSION BETWEEN 5-10%. FOR EXCLUSIVE FRAGRANCE HOUSES THEIR EXPERIENCE AND KNOWLEDGE IS STILL IMPORTANT.

TABLE 10: USA - ESSENTIAL OIL RETAIL PRICES PER BOTTLE OF 5* OR 15 ML IN US\$

ESSENTIAL OIL	DÔTERRA	YOUNG & LIVING	PLANTTHERAPY	WALMART
CITRUS				
Lemon	13	15	7**	
Lime	17	16	8**	
MINT				
Peppermint	27	28	8**	
Spearmint	39	14*	8**	
HERBS				
Chamomile (roman)	44*	52*	18*	
Chamomile (german)		48*	18*	
Basil	27	27	8**	
Rosemary	19	20	10**	
Coriander	35*	41*		
Thyme	37	44	9**	
SPICES				
Cardamom	35*	33*		
Cinnamon (bark)	28*	32*	14**	
Clove	19	20	8**	
Curcuma			10**	
FLORAL and GRASS				
Geranium	36	25	10*	
Lemongrass	13	15	7**	
Citronella		26	7**	
Patchouli	39	44	8**	
Palmarosa		26	8**	
Rose		244*	45*	
OTHER				
Ginger	52	17*	11**	
Eucalyptus (globules)	19	19	7**	
Sandalwood	82*		34*	
Lavender	28	31	7**	
Valerian		49*	23*	
Spikenard		55*		
Wintergreen	25	23	8**	
Ylang Ylang	47	53	9**	
Kit with 6 bottles (blends)	210			
				Pure Essential Oil Set - with 6 10ml bottles incl. Lavender, Tea Tree, Eucalyptus, Peppermint for US \$26

Retail prices of the selected oils for this study are indicated in light blue with Spikenard, Valerian, German Chamomille being higher priced at the two leading essential oil companies dōTERRA and Young & Living. Most of their oils are organic, which explains the higher price level compared to Planttherapy selling wintergreen oil for almost one third less than dōTERRA and Young & Living.

Another reason is the difference in quality, although smaller companies like Planttherapy make essential oils more accessible for a wider consumer group. Offering special oils for children may indicate that their oils are safe.

Walmart selling oils at rockbottom prices

Walmart goes one step further by offering sets of oils at prices as low as US\$26. These oils are not sold under their own brand, but under a vendors' brand - so Walmart has no control over what these vendors are claiming.

Specialists found that their "peppermint" is actually corn mint and the "lavender" seems to have the chemical profile of a lavandin or a modified version. Such practice undermines the precious value of essential oils in the market. Consumers might buy a set of oils and do not know how to use them. The risk of complaints to Walmart or about the use of essential oils in general is high with all its negative consequences for the image of essential oils.

2.4.2 Distribution

According to Frost & Sullivan there were more than 40 medium to large companies operating in the US flavour and fragrance industry in 2009, including the specialised essential oil companies.

Their commercial activities can be broadly distinguished as follows:

- Companies that import essential oils and/or MAPs and sell them, which in most cases are traders,

brokers and agents. They do not sell under their own brand name.

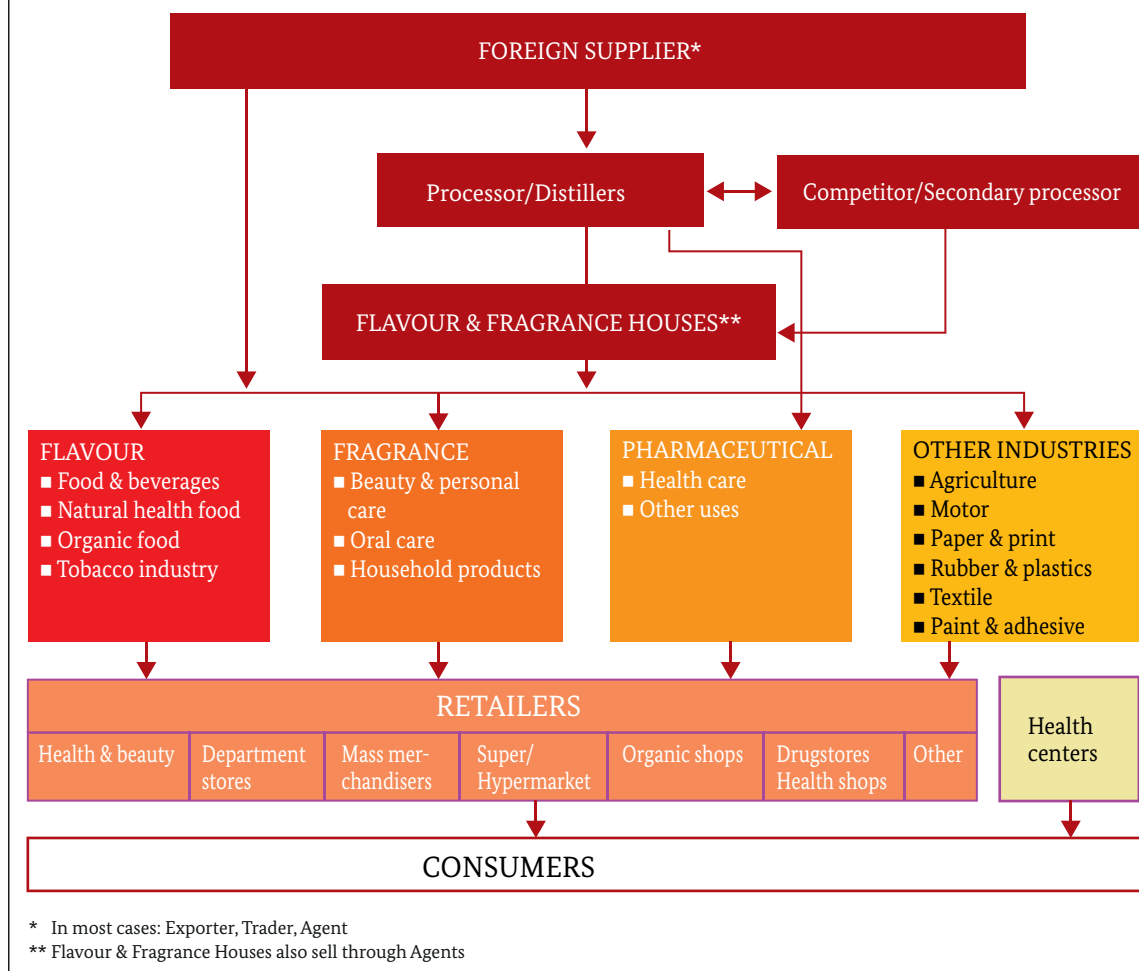
- Companies that import and make essential oils internally and sell them under their brand name. These are mostly the processors and distillers.
- Companies that import and make essential oils internally and then induce them into flavour systems and sell them. In most cases, these are the flavour and fragrance houses, distillers and larger flavour, fragrance and health care companies within the industrial segments.

The processor, distiller or importer buys MAPs or essential oils from foreign suppliers mostly from Brazil, Argentina, India, Europe, China and a variety of other countries depending on the type of oil - see Annex 2 - Table 2. The processor/distiller extracts the specific essential oils according to customers' request, quality standards and in compliance with the US regulations. They have the oils tested by a local laboratory, and sell them to flavour or fragrance houses or direct to the industrial segments (fragrance, flavour, pharmaceutical or other industries).

Direct selling through multi-level marketing. Processors like Young Living, dōTERRA sell directly to retailers or to consumers via their websites. Their selling system is similar to multi-level marketing programmes like Mary Kay, Pure Romance or Tupperware. People have a friend or relative who sells to other people they know. It is usually a side-job to generate income while also getting discounts on the products.

Processors could also sell the essential oils to competitors or to secondary processors who refine (parts of) the oils further for their specific customers which can be specialised flavour and fragrance houses of specific industrial segments. Processors and secondary processors/competitors work together on a contract basis. Along with the trend of mergers and acquisitions, smaller processors choose to join forces in knowledge, R&D, in order to deal with larger orders and to compete with the multinational houses.

FIGURE 6 : DISTRIBUTION CHANNEL FOR ESSENTIAL OILS



Source: Seance (2016)

The industrial segments increasingly sell direct to retailers and consumers through their web sites. They also tend to buy direct from exporters via traders or agents rather than through processors or flavour and fragrance houses. This means a declining trend in prices of essential oils which positively impacts the market.

On the other hand, intermediaries make their role more pronounced by specialising in good quality extraction techniques, offer innovative product portfolios or develop unique customised concentrations and blends together with industrial segments that operate in the higher end of the market. In this respect, they are still interesting for Nepali exporters.

For a detailed overview of the distribution and value chain in Nepal - see Chapter 3 - Figure 13

2.5 Main competitors

As is shown in Annex 2 - Table 1, China and India are the main competitive countries exporting similar MAPs as Nepal. Some other Latin American countries were also exporting similar commodities to the USA:

- Ginger → China, Peru, Brazil and India
- Curcuma → India and China
- Cardamom → Guatemala, India and Colombia

Regarding essential oils - as shown in Annex 2 - Table 2:

- Cornmint oil → India
- Citronella oil → Indonesia, China and Sri Lanka
- Lemongrass oil → India, Guatemala and Sri Lanka

CASE - EXPORTS OF PATCHOULI DRIVEN BY THE CULTIVA PROGRAM CREATING JOBS FOR 50,000 PEOPLE

Patchouli production is a labour intensive process and requires large production areas. A typical farmer/family in Indonesia owns about 0.25 to 1 ha of land, to produce approximately 25 to 100 kg of patchouli oil in a year. Typical dry leaf yield per hectare is 4 - 5 tonnes. About 12,000 farmers/families are involved in the cultivation and collection of patchouli leaves in Indonesia. If an average household consists of 4 people, this means that 50,000 people could get their livelihood from patchouli farming.

There are 250 distillation units in Sulawesi and Java, producing 900 tonnes per year and 175 units in Sumatra producing 300 tonnes per year. If each distillation unit employs a minimum of 5 people, the total number of people employed in this process is around 2,000. The number of collectors of raw patchouli/oils and agents involved in the exports are around 300 people.

However, the wild collection of patchouli plant is threatened by land urbanisation and the rural exodus to big cities with people abandoning traditional agriculture. Besides, the lack of proper education of

farming communities and low investment in equipment leads to inefficient production and poor quality.

Due to price fluctuations and a lack of knowledge of good agricultural and processing practices, most patchouli growers spread their risk by farming other crops.

Nevertheless, the demand in the Western world was still growing. To face these challenges of improving quality of the oil, the establishment of a transparent, sustainable supply chain, the Indonesia Essential Oil Council launched the "Cultiva Program" in 2010. This Program implements GAP, GMP and other guidelines for sustainable, high quality supplies at fair prices for all stakeholders.

The production of patchouli oil, can be considered as a strategy against genetically modified plantations (palm oil, bananas, rubber). The patchouli plant is also recommended by the United Nations Environment Programme (www.unep.org) as a good family of products for intercropping and diversification of crops.

They also serve as alternative crops in areas that are taken over by monoculture production in Sumatra. Widely used in different products, patchouli oil is a key ingredient in the fragrance industry. Its production in Indonesia supports approximately 50,000 people who obtain a livelihood from patchouli oil.

An idea of the prices for oils of the different countries was already given in Table 9. For some oils such as lavender or tea tree, the price competition between the original producing countries and new suppliers - such as China - is expected to become more intense, especially when mass merchandisers (Walmart, Target) buy large quantities.

Indonesia has been very successful in their exports to the USA and ranked no. 7 in 2014 in supplies. Having 22,500 higher plant species, 1,000 species of medicinal plants and a large number of herbs and spices used in food, flavour and fragrance, Indonesia has a great variety of spice oils that are processed by traditional steam distillation - similar to Nepal. The main oils exported include clove leaf oil, lemongrass, eucalyptus and patchouli oil.

Patchouli is a special oil from Indonesia and is widely used in perfumery, aromatherapy, toiletries,

soaps, detergents, incense insect repellents and candles. Oil production is around 1,500 tonnes per year. Patchouli oil also has different applications in pharmacy as an anti microbial ingredient against acne, dandruff, psoriasis and in other skin care.

Contributing to a sustainable development in supplying countries via programmes of NGOs of Associations has become more common. Flavour and fragrance houses, processors can use this 'doing good' philosophy into their PR, storytelling and offer oils that are not mass-produced. Large US companies are likely to have an interest or contribute to similar programmes as the 'Cultiva Program', for example the INMAPs Project. US companies like dōTERRA through their 'Healing Hands Foundation' and Young Living already have provided aid to Nepal after the earthquake.

In this respect, a win-win situation for all stakeholders can function as a competitive strategy. Instead of competing on low prices, a similar approach could be considered for typical oils from Nepal, as a tool to maintain the traditional techniques, create employment and grade up from a low cost supplying country for higher volume oils such as cinnamon, ginger, citronella, curcuma, palmarosa etc.

More details on increasing competitiveness of Nepali oils can be found in section 3.5.

2.6 Market access requirements

2.6.1 Legislative requirements

Compared to Europe, the legislative barriers before entering the market are much lower in the USA. Botanical products, including MAPs and essential oils, are regarded as food supplements, and are not regulated as prescription or over-the-counter drugs. The Dietary Supplement and Health Education Act (DSHEA) is enforced by the FDA (Food and Drug Agency). The following requirements are legislative for the US market:

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), under the World Conservation Union (IUCN) came into effect in July 1975 and has been ratified by over 160 countries. These countries have banned international trade on species deemed endangered. This has led to a sharp decline in the trade of many essential oils produced through wild collection. For example, picrorhiza is an endangered species from Nepal.

However, the CITES regulations is criticised as it can be avoided through smuggling, avoiding documentation, under reporting traded volumes, not using the correct scientific name on documents, passing off the item as another item that is unrestricted and using the restricted material to produce another value-added item that is not restricted (i.e. plant banned but not essential oil).

Phytosanitary certificate

This certificate shows that the origin of the exported MAPs is inspected by the National Plant Protection organization in Nepal. As an exporter you need to pay a fee. This certificate ensures that the shipment is free of injurious plants, pests and diseases. This is only needed for plants and unprocessed or unmanufactured plant products such as roots, bulbs or seeds. More information can be found at www.aphis.usda.gov/aphis/ourfocus/planthealth/sa_international/ct_phytosanitary_management

HACCP

HACCP is a management system that relates to the safety and hygiene of MAPs or essential oils when they are used in food such as dairy, juice, seafood, food service, meat and other food products sold by retailers. The system give guidelines for the analysis and control of biological, chemical and physical hazards apply to raw material production, procurement and handling, as well as manufacturing, distribution and consumption of the finished product. Due to several scandals in food that were partly attributed to a badly hygienic production environment, the HACCP will become a legal requirement. The FDA (Food and Drug Administration) provides specific HACCP guidelines that can be found at <http://www.fda.gov/food/guidanceregulation/haccp/default.htm>

Cosmetic regulation on safety

Consumer safety is the number one priority for cosmetic and personal care products companies, and manufacturers are committed to upholding strict FDA regulations as required by the U.S. Food, Drug, and Cosmetic Act (FD&C Act). The law requires that every cosmetic and personal care product and its ingredients must be substantiated for safety before going to the market, and that they contain no prohibited ingredients. Cosmetic companies take their safety responsibility very seriously and often surpass the requirements of the law with additional consumer safety measures. More on this regulation can be found at <http://www.cosmeticsinfo.org/cosmetic-regulation-us>



There are no clear definitions or legal standards for MAPs or essential oils in the USA. There does not exist a specific standard for the processing of oils. The U.S. law on Food and Drug Administration treats ingredients from plants the same as those from any other source. This has created an insecurity and concern in the industry. There is no clear definition of the product content, nor of the purity of an essential oil. Essential oils sold in the US market are sometimes contaminated with heavy metals or being mixed with conventional medicines.

Claims must be verifiable and products must be safe

Under the DSHEA, companies are allowed to make claims for effects on the 'structure and function of the body or on general wellbeing'. These claims must be verifiable and cannot be defined as 'therapeutic claims' (i.e. treating a symptom or disease). If the company follows this rule the product can be sold in the USA, unless someone can prove that it is unsafe. In that case, the FDA can prohibit sales of the MAP or oil concerned because it could provide a significant risk of injury. This is done after the product is sold in the US market. So, companies do not need to monitor the safety of their products - or report risks - to the FDA before entering the US market.

Products are seen as a drug if strong health claims are made

Regarding marketing claims, the FDA does have a legal power over companies and sellers of essential oil. The FDA still works to enforce guidelines and restrictions concerning how essential oil products are marketed –

specifically on the health claims made in connection to the product.

In general – no natural health product message can say 'it is intended to treat, prevent, cure or mitigate any disease or other health condition' – even when there is scientific research to back up the validity of the claims. If a company does sell in that manner, their product is considered as 'drug' by the FDA and it must be approved by the FDA. So, the company must be extremely careful in their wording and labelling. When the FDA feels that a company is making unfounded claims about a certain natural product, it will often send out warning letters.

2.6.2 Quality requirements

Industrial use

Essential oils that are used in the flavour and fragrance industries, are often used for mass production, and there is far less need for "pure" essential oils and far greater need for consistent, standardized essential oils that do not change each time.



FDA warning letters and penalties for therapeutic claims by consultants

dōTERRA and Young Living, selling essential oils (pure and mixed) and aromatherapy products through direct selling which mostly were independent consultants. Some of them made claims on their web sites and social media that essential oils - having anti-viral properties - were helping to fight the Ebola virus !

Other consultants made claims that oils were remedies for Parkinson's disease, autism, diabetes, hypertension, cancer, insomnia, heart disease, post-traumatic stress

disorder (PTSD), dementia and multiple sclerosis. Given these marketing claims, the FDA sent out warning letters allowing the companies 15 days to rectify the illegal marketing and respond before facing any punishment.

Young Living's CEO was reprimanded for more than just consultants' claims. Young Living's own website made claims that promoted products in such a way that the federal government would classify the products as drugs, according to the FDA.

Peppermint oil, for example, is used primarily as a flavouring for candies, chewing gum and ice creams. It is often referred to on food ingredient labels as Oil of Peppermint. Because large food/candy manufacturers must produce a consistently flavoured product, the intensity, aroma and overall flavour of the peppermint oil they use must remain consistent between each lot of oil that they purchase.

Manufacturers/processors therefore typically standardize the essential oils that they sell by establishing a blueprint of the percentage that each important constituent should reach within each essential oil. Afterwards they test the oil and then adjust the oil by adding or removing constituents until the resulting oil meets the ideal percentage.

Use in aromatherapy

This standardization process, however, is not ideal for aromatherapy oils. The resulting oil is no longer a natural unadulterated distillation or extraction and may contain added synthetic constituents or may have important constituents removed. Standardized oils are not always clearly marked as such. Essential oils can become more powerful therapeutically when blended correctly. These blends are known as synergies. A synergy is a mix or blend of essential oils, all similar in therapeutic properties and chemical families.

Economically motivated adulteration

Additionally, some essential oils are adjusted, also known as adulterated, in order to give the illusion that the oil is of a higher quality than it is, or to extend more costly oils in order to make more money on the sale of the oil. In this respect, this is economically motivated adulteration.



For example, the pricy Japanese citrus Yuzu oil resembles a combination of grapefruit and mandarin essential oils. Some sellers may be tempted to blend grapefruit and mandarin essential oils together and market the blend as the more expensive Yuzu Essential Oil. Patchouli oil is sometimes extended with the addition of less costly balsams or cedarwood. Sometimes lavender oil is adulterated by the addition of more linalyl acetate.

2.6.3 Voluntary requirements

Good agricultural and collection practice for herbal raw materials

The practice of GACP for the cultivation of MAPs used for natural ingredients is not compulsory in the USA, but it is highly advisable for both small and large producers. This practice is well recognised and can serve as a guidance for exporting to other countries as well.

The MAPs should be accurately identified and not being adulterated with contaminants that may present a public health risk, and that are conform with its quality characteristics for their use in foods, dietary supplements, medicines and cosmetics. The GACP can be done according to the conventional or organic methods or done for herbs that are collected from the wild. A guide of GACP can be downloaded at www.herbal-ahp.org/06_1208_AHPA-AHP_GACP.pdf

Fair Wild

Fair wild certification can provide an additional value-adding option for producers in Nepal, considering that the demand for FairWild certified products is growing. For example, a producer holds FairWild certification for four wild plant species such as jatamansi, wintergreen,



rhododendron and calamus. The wild herbs are collected through their network of purchase centres in landscapes surrounding a particular forest/area. Collectors are benefiting from fair prices paid for their produce and through participation with the FairWild Premium Fund (for community development priorities).

Final products using Nepali MAPs or oils from these plant species are manufactured in the USA, and are on sale in the USA, Europe or other countries. For more details on FW certification - see: www.fairwild.org

Organic regulation in the USA

The US regulation of organic food and beverages falls under the USDA (United States Department of Agriculture). They are responsible for setting organic standards, certifying and accrediting manufacturers/farmers and enforcing compliance. The NOP (National Organic Program) divides organic products into three categories:

1. Products made with 100% organic produced ingredients, which can be labelled "100% organic"
2. Products that contain at least 95% organic ingredients, which can be labelled "organic"
3. Products with 71-94% organic ingredients, which can be labelled "made with organic ingredients".

In fact, this distinction in USDA organic certification does not necessarily mean the product is safer or healthier, although consumers often associate it with these attributes and are prepared to pay higher prices for 100% certified organic products.

Despite the USDA's efforts, there is still a great deal of consumer confusion regarding organic food and beverages. Additionally there are too many labels, logos, trademarks claiming to be 'healthy' or 'sustainable' which created much scepticism. Until consumers truly understand the benefits of organic products, it will be difficult for them to justify paying higher prices for categories 2 and 3 that are often offered by multinational manufacturers or companies that not 'fully comply to the organic principles'.



Organic label and certification

The certification process involves a third party (organic certifying agent) to evaluate the exporting company, processor, collectors and farmers in Nepal. According to various guidelines related to organic agriculture on clean ground without pesticides, proper storage and transportation. The accredited agents check if all activities are in accordance with the organic standards.



A farm will only be certified organic after it has gone through a thorough audit by a certification agency. There are many organic certification systems around the world. Some are government agencies, while some are private independent agencies regulated by the International Organic Accreditation Service (IOAS) such as Onecert or Ecocert. Before applying for organic certification, it is important to determine whether the farm can comply with the organic standards. For example, a neighbouring farm using pesticides would prevent certification. It is also advisable to apply for the USA and Europe at the same time. More information can be found in Chapter 3 - section 3.4.3 and at www.ams.usda.gov/sites/default/files/media/What%20is%20Organic%20Certification.pdf

Global G.A.P.

GLOBAL G.A.P.



is a business-to-business standard for safe and sustainable food production and is linked to GACP as it sets very strict criteria for Good Agricultural Practices that farmers must comply with if they want to sell their products to major retailers around the world. And retailers rely on GLOBAL G.A.P. Certification to ensure that the products they sell to their consumers can be traced back to a certified farm or production facility.

Fair Trade

The most well known fair trade standard on the USA is that of the Fairtrade Labelling Organizations International, now called Fairtrade International (FI). One of the basic requirements of Fairtrade certification is that the entire supply chain (producer - processor - exporter



- processor - distributor) up to where the product is in its final packaging needs to be FLOCERT certified. Only then a product can be bought and sold as Fairtrade.

Producers must be organized in certain types of organizations that FLO allows. Besides, there must be a standard for the particular MAPs or oils. There is no standard (yet) for essential oils, but under the Herbs & Spices category basil, curcuma, citronella, cinnamon, chamomile, ginger, lemongrass and mint are products eligible for Fair Trade standards.

For example, the FLO's Fairtrade Standard for Tea for Hired Labour covers six botanicals – chamomile flower, peppermint leaf, spearmint leaf, hibiscus, rooibos and tea leaf.

In addition to the standards, which include social criteria, FLO publishes a periodically updated minimum price and premium information <http://www.fairtrade.net/standards/price-and-premium-info.html> that specifies the product, type, quality, form, characteristics, country/region, certification scope, price level, unit, quantity, currency, Fairtrade Minimum Price, Fairtrade Premium and date of validity, where applicable.

Key requirements among fair trade certifications are the payment of a Fairtrade Minimum Price, and a Fairtrade Premium price:

- Fairtrade Minimum Price (where it exists) is the lowest possible price that may be paid by buyers to producers for a product to become certified against the Fairtrade standards.
- Fairtrade Premium is an amount paid to producers in addition to the payment for their products. The Fairtrade Premium is intended for investment in the producers' business and community (for small farmers' organizations or contract production projects) or for the socio-economic development of the workers and their communities (for hired labour situations).

In order to access the FLO standards for producers, see at www.fairtrade.net/fileadmin/user_upload/content/2009/standards/documents/SPO_EN.pdf

Whole Foods Market is one of the largest natural product retail food chains in the United States and Canada. Whole Foods has created their own programme which is a type of Supplier Qualification programme that they encourage their suppliers to comply with. It is designed to be a guarantee to their customers about their commitment to ethical trade, the environment and quality products, and may be a sign of what qualification programmes may begin to look like for other retail store chains. In order for a product to meet the Whole Trade Guarantee, the products must: meet Whole Foods Market's high quality standards, provide more money to producers, ensure better wages and working conditions for workers, and utilize sound environmental practices. To learn more about the Whole Foods Whole Trade Guarantee Programme see section 2.1.1.

2.7 Options for entry

As the markets in the three key segments are expected to grow further in the coming five year, there are good opportunities. For exporting companies in Nepal, it would be best to sell to smaller processors and specialised industries or retailers who target the Premium segments where new original products are necessary to stay competitive. This will help to further grade up the oils from Nepal and move away from the image as developing country where labour costs are low.

2.7.1 Opportunities

1. FLAVOUR

Approach flavour houses, processors who are looking for new types of essential oils or for specific MAPs as ingredient to develop new/different flavours and ingredients to replace, sugar, salt and fatty ingredients in food sold in the US market.

- Natural authentic flavouring for e.g. Asian or exotic dishes with spicy oils from Nepal. It is important to look at the food forecast or watch cooking programs in the US - see section 2.1.1.
- Healthier confectionery where stronger/different flavours can (partly) serve as a substitute for sugar or give a different taste sensation e.g. ginger in cookies, timur in candies or marmalade, wintergreen in chewing gum etc..
- Typical flavour in food with oil that is good for health and giving added benefits e.g. curcuma, asparagus or cinnamon.
- Different fresh tastes in energy drinks (lemongrass, ginger), healthy digestive liquors (wintergreen, valerian, calamus) or beers (jatamansi).
- New tastes in herbal teas. The green tea market (around 2 billion litres) is expected to expand with new herbal blends that are good for health or for having a good sleep.



2. FRAGRANCE

Approach processors, fragrance houses who are looking for new types of oils, MAPs to develop a new BPC premium products in skin care, hair care, bath & shower as described in section 2.1.1.

- Hair care. Jatamansi, ginger, chamomile and rhododendron for hair repair, hair care and growing for the growing number of older and grey haired baby boomers who like to look healthy and younger.
- Skin care. Rhododendron, butternut, lemongrass for new skin care products with combined functions, or for use in anti-aging night cream, repairing serums, cleansing lotions.
- Other fragrance segments. Different oils such as

cinnamon and wintergreen to be used in shower gels, or citronella, palmarosa, lemongrass and butternut in soaps and the household cleaning segment.

- Perfumery/Fragrances. Cinnamon, jatamansi, timur, wintergreen, ginger and calamus are interesting new oils in luxury perfumery as 'Oud Wood based' scents that reminds to old times (New Classic collection) and giving an impetus to the saturated perfume market in the USA.
- Sets of cosmetics or different small bottle of fragrances are popular. You could offer own set, or be part of a set that is sold by the flavour & fragrance house or by the processor.

3. PHARMACEUTICAL

Approach processors and companies who are looking for new types of MAPs and oils as described in section 2.1.1 and 2.2

- Nutraceuticals. Demand for natural ingredients for the booming nutraceuticals market.
- Sleeping. Demand for valerian or chamomile as natural sleeping aids.
- Digestion and immunity. Demand for natural digestive remedies and immune system.

- Aromatherapy. Demand for different oils for aromatherapy. One of the biggest recent trends in natural health is the use of essential oils for aromatherapy and massage oils.

Note that if an "aromatherapy" product is intended and promotion to treat or prevent disease, or to affect the structure or function of the body, it is considered by the FDA as drug (see section 2.5).

Based on the above opportunities in each key segment, the best five typical oils from Nepal are likely to have good chances for the US market.

**TABLE 11: FIVE MAIN ESSENTIAL OILS FROM NEPAL
WITH BEST OPPORTUNITIES FOR USE IN THE USA MARKET**

FLAVOUR	FRAGRANCE	PHARMA	AROMATHERAPY
1. Wintergreen	Jatamansi	Valerian	Cardamom
2. Timur	Ginger	Chamomile	Timur
3. Curcuma	Wintergreen		Rhododendron
4. Ginger	Cinnamon		Calamus
5. Cinnamon	Butternut		Wintergreen

Source: Source estimates (2016)

In Aromatherapy, other oils with opportunities include cinnamon, citronella, lemongrass, curcuma and palmarosa.

2.7.2 Recommended entry in the USA

Identifying buyers and know more about your final consumers

Identify buyers. As a Nepali exporter, processor, cooperative you can contact established importers or processors in the USA and categorize them by segment (flavour, fragrance, pharmaceutical) based on the opportunities. The most obvious way in the US is a marketing oriented approach in finding buyers that sell to consuming industries and/or final consumers that are most likely to have an interest in oils from Nepal.

In this case, buyers selling to those consumers are more open to new suppliers. Often the consuming industry still stay with their traditional suppliers whom they can trust and who are able to deliver fast and provide oils of a consistent quality.

Your final consumers. The millennials and baby boomers are likely to be more open to new products from Nepal. If you have more knowledge about their lifestyle, buying behaviour & criteria, it will be a baseline to discuss with a buyer of the right company and to start a kind of exchange with him/her. Many oils from Nepal are unknown and as an exporter, you can provide the best uses, as has been done for centuries by Nepali people or used by practitioners.

Information and ideas how oils could be useful for American consumers might give them ideas and vice-versa - you can find out more from the buyers about his/her target group. A marketing approach is based on a win-win situation aiming to establish a long-term relationship.

Flavour and fragrance houses, processors have to offer something unique because of more competition from mass merchandisers and multinationals in the health and organic market who buy direct from developing countries.

The flavour and fragrance houses now need to be more pro-active in their own marketing strategy to maintain their knowledgeable role in the value chain and find niches. The latest trend in US retailing is 'Small is the next BIG trend' with small specialist shops popping up on the Main Streets selling new products, including products for health and well-being.

Interesting sales routes

Sales direct to practitioners (homeopathic doctors, medical herbalists) could be another option where you can sell the oil together with information about the oil, its use and benefits. At a later stage, you could consider to provide training modules (aromatherapy) for practitioners and for final consumers.

Sales to organic shops or supermarket. The US natural foods supermarket chain Whole Foods Market is promoting its beauty department. In March 2015, Whole Foods Market hosted a "Beauty Week" featuring events and demonstrations such as an afternoon of cocktails and beauty. Organic certification will be required here. When approaching Whole Foods, they expect compliance with their Trade Guarantee programme (see section 2.6).

High volume sales

High volume buyers. A different approach is to identify industrial buyers or traders who look for oils in larger quantities such as menthe, citronella or citrus oils. Obviously, there will be more price competition from India and the nearby Latin American countries, and it remains to be seen whether instant or seasonally high volume requirements can be met by Nepali exporters.

If you are able to supply a consistent quality and deliver small batches on a regular basis, selling directly to the industrial segments is a good option. However, many industries still want to buy via a flavour or fragrance house or processor, importer, in order to minimize the risk of not having the proper oil in time. These houses have large inventories in the USA and stock several grades of each plant to be sure that they can make the required oils on a seasonal basis. Compounds are often made on order and produced in batches, especially if it concerns small quantities of exclusive oil to special customers.

Quality is very important

The only way to penetrate the market is to offer products of consistently high quality. Clean oils or MAPs of assured quality, good appearance (colour, smell, purity) and if possible, with properties setting them apart from competitive oils e.g. from India or China.

Even if there is no standard in the industry, buyers are quality conscious and expect a consistency in the properties, purity and chemical constituents of the oil, especially when it concerns typical oil. As an exporter, you could also compete by providing excellent quality of the oils which improves their shelf life.

In addition, cleanliness and chemical contamination should be respected as well as the phyto-sanitary and HACCP regulations. Voluntary labels like Fairwild, Organic and GlobalG.A.P. will definitely set your oils apart. They can be sold at a premium price over conventional products (see section 2.3 - Table 9).

Recommendations to enter your key segments

Choose a target segment that are 'easy to enter', for example aromatherapy segment or the large health food segment worth US\$ 53.9 billion in 2014 (see table 6) with the natural health category taking up 74%. Compared to the other two key segments, the flavour market is less regulated. Once more awareness is gained, you could enter the cosmetic segment which continues to grow from 21.6 to 24.1 billion between 2015 and 2019.

Contacting buyers

Find out addresses of the right companies that operate in your target segment by doing a small research on the Internet (online trade show catalogues, company's website, Google). Try to find out the right contact person of the purchasing department for raw material or essential oils. One way to find this out is by searching for companies on professional social media e.g. linkedin. This work could be done by a trainee in Nepal. Make a distinction in large and small companies

- Approach them by e-mail, invite them to a trade show. If you do not have a booth, try to see them at a trade show - preferably during the last days of a show as people become more relaxed.
- If they show an interest, send an offer with representative samples. Check both the world prices/kg of different oils - see Chapter 2.3.1. Up-to-date prices can be obtained from as Ultra International and ITC Insider. Check also retail prices of oils by visiting sites of large companies - see Table 10 and check the difference each year.

- Have your sample evaluated and if OK start a discussion about the required quality, quantity and your selling price which should be reasonable and provide a fair price for the farmers and collectors. Discuss the issue of sustainability in the sector and the development of the area where the herbs are growing (Terai, Mid hills, Mid West, Himalaya).

Discussions are ideally done face-to-face, by Skype or by email. American people are straightforward. Try to be honest, realistic in quantity commitments. You must confirm important decisions by e-mail and keep the buyer informed regularly. Especially if there is a problem!

- Negotiate contract on the basis of quantity, lead time and terms of delivery and payment - see further Chapter 3.



2.7.3 Potential trade partners and Useful addresses

The first place to look would be to contact the main trade association(s), followed by trade fairs, which tend to feature a list of exhibitors, many of which may be potential partners. The following companies and organisations may be worth looking at:

FLAVOUR & FRAGRANCE HOUSES

GIVAUDAN	https://www.givaudan.com/	https://www.givaudan.com/contact-us https://www.linkedin.com/company/givaudan
IFF	http://www.iff.com/	http://www.iff.com/media/contact IFF on LinkedIn
FIRMENICH	http://www.firmenich.com	http://www.firmenich.com/en_INT/contact.html https://www.linkedin.com/company/firmenich
SYMRISE	https://www.symrise.com/	https://www.symrise.com/contact/
SENSIENT TECHNOLOGY	http://www.sensient.com/	corporate.communications@sensient.com
McCORMICK	http://www.mccormickcorporation.com/	http://www.mccormickplace.com/contact-us.php
KALSEC INC	http://www.kalsec.com/	http://www.kalsec.com/contact/form/
BERJA INC	http://www.berjeinc.com/index.html	http://www.berjeinc.com/contact.html

PROCESSORS

YOUNG AND LIVING	https://www.youngliving.com/en_US	https://www.youngliving.com/en_US/company/contactus Young & Living on LinkedIn
dōTERRA	http://www.doterra.com/en	doterra - contact us doterra on LinkedIn
NATIVE AMERICAN NUTRITIONAL	http://www.nativeamericannutritionals.com/	http://www.nativeamericannutritionals.com/contacts
NOW FOODS	http://www.nowfoods.com/	http://www.nowfoods.com/AboutUs/Contact-Us/
AURA CASIA	http://www.auracacia.com/	customercare@auracacia.com
PLANTTHERAPY	http://www.planttherapy.com/	http://www.planttherapy.com/contact-us
MOUNTAIN ROSE HERBS	https://www.mountainroseherbs.com/	https://www.mountainroseherbs.com/about/contact
JADE BLOOM	http://jadebloom.com/	http://jadebloom.com/contacts/
AROMA CREATIONS	http://www.aromacreations.com	info@aromacreations.com

IMPORTERS

BIO-BOTANICA	http://www.bio-botanica.com/	http://www.bio-botanica.com/contactUs.aspx
DRACO NATURAL PRODUCTS	http://www.dracoherbs.com/index.htm	info@DracoHerbs.com
AMERICAN BOTANICALS	http://www.americanbotanicals.com	http://www.americanbotanicals.com/contact-us/
ESSENTIALLY PURE INGREDIENTS	http://www.essentiallypure.com	Customerservice@essentiallypure.com

Trade Shows

BIOFACH AMERICA ORGANIC PRODUCTS EXPO
22 - 24 September 2016, Baltimore
<http://www.biofach-america.com>
ssilverman@newhope.com

ENGREDEA

11 - 13 March, Anaheim Convention Center
<http://engredea.com/engredea12/Public/enter.aspx>
tradeshows@newhope.com

NATURAL PRODUCTS EXPO EAST (Baltimore)

22 - 24 September 2016, Baltimore
11 - 13 March, Anaheim Convention Center
<http://www.expoeast.com/ee16/public/enter.aspx>
<http://www.expowest.com/ew16/public/enter.aspx>

SUPPLY SIDE EAST (New Jersey)

SUPPLY SIDE WEST (Nevada)
27 - 29 April, Orlando, Florida
International Trade Show and Conference
<http://www.supplysideshow.com>

HEALTHY LIFE EXPO

17-18 October 2016, Minneapolis
<http://www.mediamaxevents.com>

WORLD PERFUMERY CONGRESS

13-15 June 2016, Florida, USA
<http://wpc.perfumerflavorist.com>

INAST WEST - INTERNATIONAL NEW AGE SHOW

10-12 June 2016, Denver
<http://www.eventseye.com/fairs>

Trade Press

COSMETICS & TOILETRIES
<http://www.cosmeticsandtoiletries.com>

HERBALGRAM—THE JOURNAL OF THE AMERICAN BOTANICAL COUNCIL

<http://abc.herbalgram.org/site/PageServer>
abc@herbalgram.org

HERBAL GREEN PAGES ONLINE

<http://www.herbalgreenpages.com>
herbworld@aol.com

NUTRITIONAL OUTLOOK

The Manufacturer's Resource for Dietary
Supplements & Healthy Foods and Beverages
<http://www.nutritionaloutlook.com>
feedback@nutritionaloutlook.com

PERFUMER & FLAVORIST

<http://www.perfumerflavorist.com>
<http://www.perfumerflavorist.com/contactus/>

Trade Associations

AMERICAN HERBAL PRODUCTS ASSOCIATION (AHPA)

<http://www.ahpa.org>
ahpa@ahpa.org

AMERICAN SPICE TRADE ASSOCIATION (ASTA)

<http://www.astaspice.org>
info@astaspice.org

HERB GROWING & MARKETING NETWORK

<http://www.herbworld.com/newgp/index.htm>
herbworld@aol.com

INDEPENDENT COSMETIC MANUFACTURERS

AND DISTRIBUTORS (ICMAD)
info@icmad.org
<http://www.icmad.org>

ORGANIC TRADE ASSOCIATION (OTA)

<http://www.ota.com>
info@ota.com

TEA ASSOCIATION OF THE USA TEA COUNCIL OF THE USA

<http://www.teausa.com>
info@teausa.com

Other sources/Contacts

USDA - US DEPARTMENT OF AGRICULTURE

<http://www.ams.usda.gov>

<https://www.ams.usda.gov/about-ams/contact-us>

FOREIGN AGRICULTURAL SERVICE (FAS)

U.S. TRADE INTERNET SYSTEM

<http://www.fas.usda.gov/gats/default.aspx>

IDAHO MINT COMMISSION

<http://www.idahomint.org>

INTERNATIONAL TRADE CENTRE (ITC)

UNCTAD/WTO

<http://www.intracen.org/itc/market-insider/>

itcreg@intracen.org

PERSONAL CARE COUNCIL BUYERS GUIDE

<http://buyers.personalcarecouncil.org/jsp/>

BGSearchPage.jsp

<http://www.personalcarecouncil.org/contact>

NUTRITIONAL OUTLOOK BUYERS GUIDE

<http://www.nutritionaloutlook.com>

feedback@nutritionaloutlook.com

CONVENTION ON INTERNATIONAL TRADE IN
ENDANGERED SPECIES OF WILD FAUNA

AND FLORA (CITES)

<http://www.cites.org/>

cites@unep.ch

FAIR TRADE USA

<http://www.transfairusa.org>

info@transfairusa.org

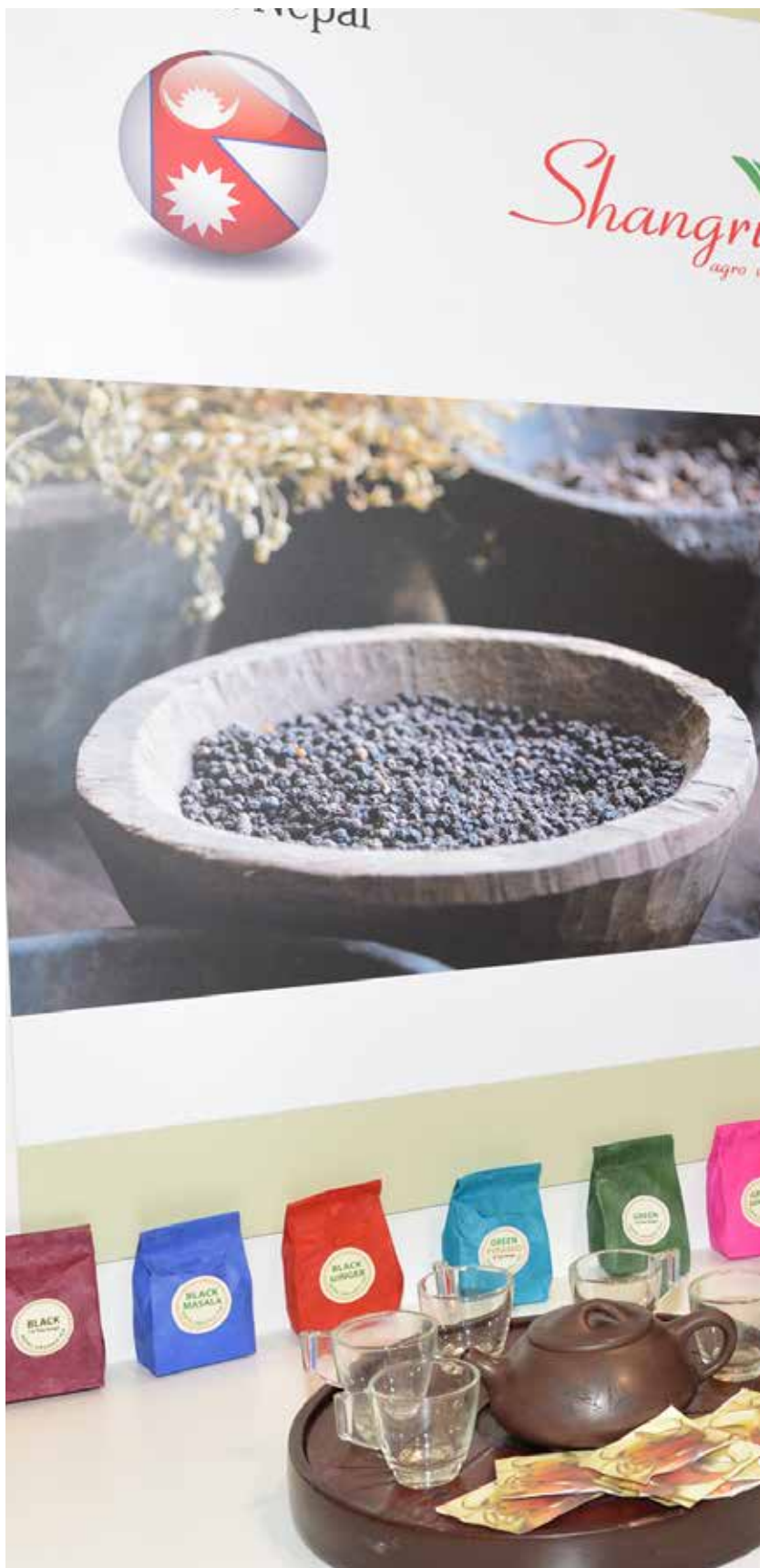
AMERICAN HERBALISTS GUILD (AHG)

<http://www.americanherbalistsguild.com/>

ahgoffice@earthlink.net

US CHAMBERS OF COMMERCE

<https://www.uschamber.com/asia>





MAPs IN THE LOWER/MID HILLS TO HIGHER MOUNTAIN RANGES
OF NEPAL HAVE HIGH MEDICINAL PROPERTIES. THEY PROVIDE A
SOURCE OF INCOME FOR LOCAL COMMUNITIES SELLING THEM TO
TRADERS WHO SELL THEM ON FOR EXPORTS MAINLY TO THE INDIAN
AND CHINESE MARKETS



GLOBAL ACCESS STRATEGY FOR MAPs

GLOBAL ACCESS STRATEGY FOR MAPs AND ESSENTIAL OILS

This section also includes the strategy for the USA, German, Chinese and Indian markets. References are made to the separate market studies for these countries published by GIZ.

NEPAL HAS 6,973 HIGHER PLANT SPECIES WHICH ARE VERY LARGE FOR THE COUNTRY'S SIZE WHEN COMPARING THE NUMBER OF SPECIES WITH NEIGHBOURING COUNTRIES, CHINA (26,092 SPECIES) AND INDIA (15,000 SPECIES).



3. GLOBAL ACCESS STRATEGY FOR MAPs and ESSENTIAL OILS

3.1 Current situation and SWOT Analysis

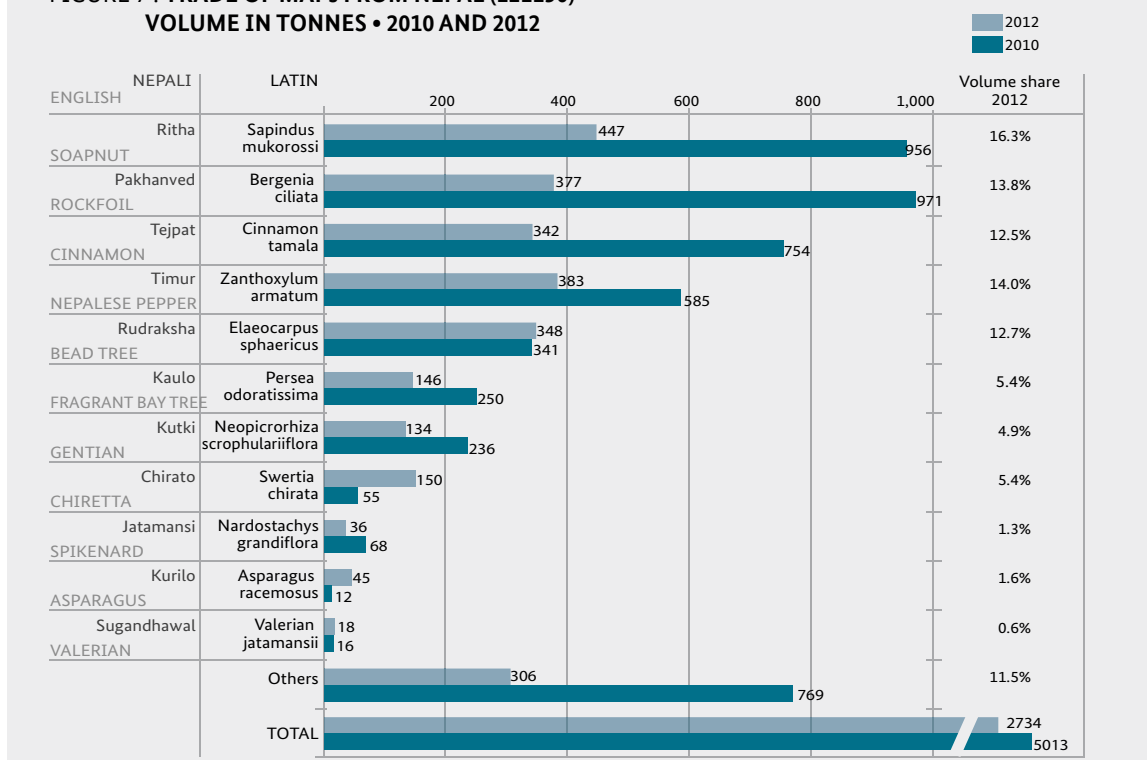
3.1.1 The sector of Medicinal and Aromatic plants (MAPs) in Nepal

Nepal has 6,973 higher plant species which are very large for the country's size when comparing the number of species with neighbouring countries, China (26,092 species) and India (15,000 species). The rich diversity of plants is because of its altitude of 70 metres in the South Terai up to more than 8848 metres in the Himalaya, its six floristic regions and climate influenced by maritime and continental factors with four distinct seasons.

Around 1,800 species are still used for Ayurvedic, Unani and Siddha medicines because people in Nepal and India have confidence in their efficacy. Besides, regular OTC medicines are not widely available in rural areas in the mountains. Plants with aromatic properties are used to make incense and for therapeutic remedies.

MAPs in the lower/mid hills to higher mountain ranges have high medicinal properties. They provide a source of income for local communities selling them to traders who sell them on for exports mainly to the Indian and Chinese markets. According to the NEHHPA, around 50% of local communities are involved in the collection and trade of MAPs or NTFPs. In 2012, 2,734 tonnes were exported of which soapnut, rockfoil, Cinnamon tamala, timur, persea (kaulo) and rudraksha seeds were the largest MAPs traded by volume.

FIGURE 7 : TRADE OF MAPs FROM NEPAL (121190)
VOLUME IN TONNES • 2010 AND 2012



Source: NEHHPA (2015)

A significant role in the economy. Even if the volume of exports decreased between 2010 and 2012, the trade in MAPs plays a significant role in the economy of which an estimated 5% contribution to the Nepalese GDP. Their collection and the required permits/ taxes to export MAPs/essential oils also contribute to the revenues of the Government.

About 85% of MAPs are collected from the wild which are mainly in the poor Far-Western and Mid-Western regions in Nepal. Within the selected products for this study jatamansi, picrorhiza, asparagus, timur, soapnut and yarshagumba are mostly collected in the wild. Butternut (chiuri) is largely available from the trees in the mid-western and far-western regions of Nepal with an estimated potential of 9,000 tonnes of butter for domestic consumption, soap making and exports.

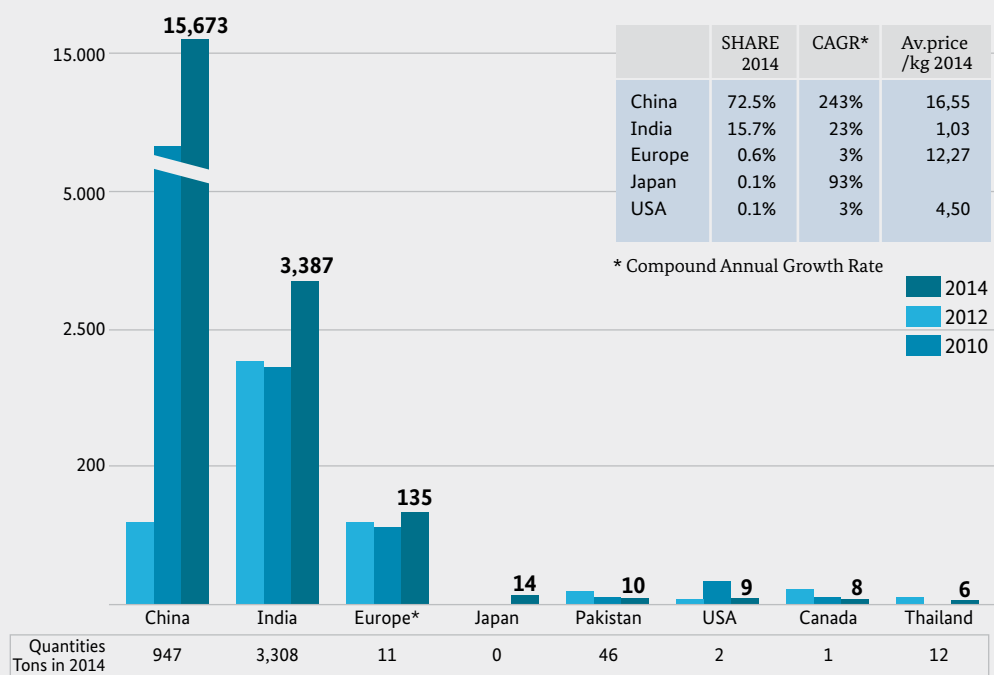
A number of MAPs are cultivated mostly in national and community forests and in private lands in lower hills (Terai) such as mentha, lemongrass, citronella, palmarosa, chamomile, cinnamomum tamala, timur, soapnut and asparagus. A rising number of MAPs species are cultivated.

There are many registered and unregistered producers, traders and companies involved in the trade of MAPs. The largest Associations in Nepal is the Jadibuti Association of Nepal (JABAN) with registered 300 members (producers, collectors, traders and exporters) located in Nepalgunj - being the main trading hub to India. In Kathmandu, the NEPPHA (Nepal Herbs and Herbal Products Association) is a large umbrella organisation with registered 52 members of which 70% are manufacturers and 30% traders.

Trade of MAPs

Around 160 different MAPs are harvested and traded from remote Nepali villages to trading centres in India and China (Northern and Southern borders). By value, the exports of MAPs rose by a CAGR of 66% between 2010 and 2014. This was largely attributed to the exports of yarshagumba to China for huge amounts of money. However, in 2015, exports to China dropped from US\$ 15,673 to 530 thousand and from 947 to 53 tonnes. By volume, India was the main destination with 3,308 tonnes in 2014. It should be noted that the illegal non-registered trade of MAPs is very big.

FIGURE 8: NEPAL - EXPORT OF MAPs (1211), MAIN MARKETS IN THOUSANDS US \$
VALUE INCREASED BY 66% FROM 3,648 TO 21,606 • 2010-2014



* Main exports to: France, Germany, Switzerland, Italy, UK.

Source: ITC (2016)

In 2015, total Nepal exports of MAPs were 3,172 tonnes valued at US\$ 4,681 thousand, a decrease by a value of 27% compared to 4,294 tonnes and a huge drop from US\$ 21,596 thousand in 2014. Although, in spite of the earthquake and the fuel crisis, Nepali exports to India just fell slightly to 3,101 tonnes and were valued at US\$ 3,919 thousand, according to the ITC. India accounted for 84% of Nepal exports in 2015.

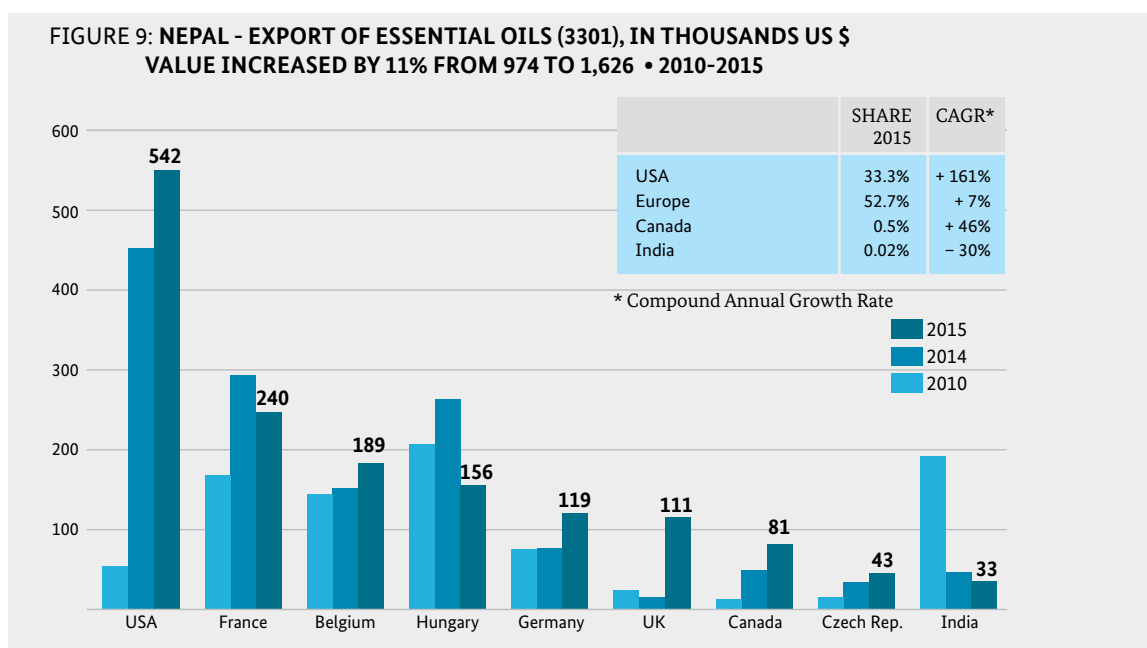
Trade of Essential oils

Around 10% of all MAPs are processed into essential oils, oleoresins or concentrates for the production of medicines, soap, oral care, incense or handicrafts (e.g. scented candles) in small workshops/factories. More than 20 domestic manufacturers were registered in the processing of MAPs and NTFPs (source: Khilendra Gurung, 2010), while Sawtee estimated the number of processing facilities at 77 in 2010. These companies buy raw MAPs from various community forest user groups (CFUGs) and co-operatives. Most oil exporting companies are located in Kathmandu, Nepalgunj or Krishnanagar. As more companies

recognize that processing of MAPs in Nepal is more beneficial than exporting crude MAPs, the number of Nepali processors is on the rise.

Between 2010 and 2015, Nepal exports of essential oils rose by a CAGR of 11% from US\$ 974 to 1,626 thousand. By volume, exports rose from 21 to 37 tonnes in the same period.

The USA has become the largest destination country by value. Exports rose by a CAGR of 161%, which was largely attributed to more exports of butternut and jatamansi oil, among others, to large companies such as dōTERRA and Aveda. Exports of oils to Europe and Canada rose steadily, while exports to India dropped by 30% from US\$ 193 to 33 thousand. The majority of oils were NES, although according to figures from JABAN, the most traded oils were cinnamon, mentha, valerian, chamomile, timur, palmarosa and citronella. In 2015, around 5% were essential oils of orange, which mainly went to the USA and China.



Source: ITC (2016)

As large parts of essential oils are exported to the Western countries, the trade of essential oils is better registered than MAPs.

Despite the rise in essential oil exports, Nepal still faced several problems:

- **The fuel crisis.** According to the Nepal Rastra Bank (NRB), exports of all goods to India dropped by half in the year 2015/2016 (from 23 billion to 14 billion NPR) owing to the obstructions at customs points including Birgunj. This has particularly affected companies in Kathmandu and in the south/middle/east part of the country. Exports to China have dropped by one third (from 1.4 billion to 0.5 billion RS).
- **The two large earthquakes in April 2015 with its ongoing aftershocks** affected the economy, infrastructure and the Nepalese farmers missed the planting season starting in May for rice. This, together with losses of food stocks and wheat and maize harvests, limited food supplies and income. Around two-thirds of Nepali people rely on agriculture for their livelihood.
- **A weak infrastructure** where MAPs need to come a long way on foot from remote villages in the mountains. There is often a lack of proper

packaging material in villages and there is limited access to electricity (source: Khilendra Gurung, 2010).

- **Nepal's landlocked position,** its lack of fuel and raw materials needed for manufacturing is coupled with the limited transport-links to the north. The economy is very closely tied to India or China. Nepal has an open border with India giving room to substantial smuggling.
- **Nepal exports of MAPs and oils being largely overshadowed by India.** Indian traders buy MAPs directly from small communities at low prices for the production of essential oils in India. Essential oils are exported and promoted as Indian products or as products from the Himalaya.
- **Low recognition.** Many people in Western markets know Nepal as a country, but less people are aware about the typical MAPs or essential oils from Nepal. They do not clearly recognise the difference between oils from Nepal or from India. Apart from the low awareness, the image of Nepali oils might be affected, if some Indian companies sell adulterated oils.

Other constraints in Nepali exports can be attributed to the rising inflation rate since October 2015 which was 12.1% in January 2016, making fuel, food and raw material more expensive.

NEPALESE FARMERS USUALLY HAVE NO CLEAR IDEA ABOUT THE CONSUMER TASTE OF PARTICULAR ESSENTIAL OILS, SPECIFIC SEASONS OR SHORTAGES/MOVEMENTS IN DEMAND OR THE PURPOSE OF USE.

3.1.2 The value chain

The vast majority of producers in Nepal are farmers using MAPs for own consumption and sell them in small quantities for extra income. MAPs are one of their different crops (multi-cropping). Barriers are low to stop if the price does not cover their cost and they need income. Their selling price is still a main determinant for them in what they grow.

Most farmers do have the traditional knowledge on which crop to cultivate during the year, to be sure that their income is maximized. However, when large numbers of farmers cultivate the same crop according to the usual traditional knowledge, dramatic increases or decreases in production can happen, which impacts on price levels. Large fluctuations in prices paid for their crop means large variances in income. A logical solution would be to cultivate different crops, according to the market demand, altitude and climate conditions.

Where crops are perennial, producers have no choice but to continue in the market and take what price is offered, unless they decide to switch to the production of commodities.

Farmers usually have no clear idea about the consumer taste of particular essential oils, specific seasons or shortages/movements in demand or the purpose of use. It is important to estimate the potential of a crop by knowing whether an essential oil is used for its chemical constituent or for its aromatic part. Farmers are often in remote places and sell a few kilos to collectors, who sell them to village or airport traders.

Collectors visit different farmers who buy small lots for cash. They make an export lot that is sold to exporters or buyers from either local processors or

local flavour and fragrance houses in the Kathmandu area.

These buyers have an inventory, know which crops/oils are in demand (and when) and their foreign customers. Besides, they are able to quote prices in US\$ or Euros, which is often impossible for local producers. They also know about export procedures and have contacts with shipping agents.

Traders also buy from farmers and sell them to companies in Kathmandu area or via Nepalgunj to Indian buyers in e.g. Lucknow, Kanpur and Dehli.

In both cases, the power of producers/farmers to influence the price in the market hardly exists as they are controlled by buyers from Nepal and India. This dependency leads to deliberate adulteration by some farmers, especially if no reasonable prices are paid. Such practices harm the quality of products from Nepal. In other cases, the quality is harmed when farmers compete - by quantity - against farmers from other geographical regions.

If the supply chain is very long (see Figure 13) the producer continues to act as a supplier and has little or no influence on pricing, crop variations and planning. In some cases, the supply chain can be manipulated by gathering stocks of particular MAPs or oils and wait until the price rises, and sell off stocks at large profits, often without letting farmers take advantage.

Direct purchasing through ethical supply chains.

Compared to the organisation representing the interest of traders, there are few organisations for the true interests of farmers and producers. On the positive side, the ethics of purchasing from producers and cooperatives in the supply chain becomes increasingly important. Smaller

processors such as Primavera Life (Germany), Vossen (Belgium), S&D Aroma (UK) and larger (multinational) companies, e.g. Nateva and Avituri - both from France, Aveda (Estee Lauder, USA) have set up community projects in developing countries - including in Nepal - with ethical supply chains and organically certified essential oils.

Some main problems in the value chain are:

- **Difficulty among producers and collectors to have a closer contract with potential customers** due to financial and logistical constraints. Many of them are illiterate and not familiar with computers. They rely on traders or exporters, who handle the paperwork, which is rather complex and time consuming in Nepal. This often creates an uneven distribution of benefits.
- **Low quality of MAPs or adulterated products** resulting from easy-going collectors or traders who want to get quick money. MAPs are mixed or are harvested too early or entire plants are destroyed, especially among those collectors who harvest illegally as they hurry for fear to be caught. According to Asia Network for Sustainable Agriculture and Bioresources (ANSAB), soil contamination, high moisture content, and low quality packaging have resulted in the deterioration of the quality. Storage facilities are not proper, leading to decline in quality with fungal contamination. The risk is high that foreign customers reject the MAPs/oils, as they do not comply with the HACCP regulation.

3.1.3 SWOT analysis

Strengths

- Nepal has a very rich diversity of herbs and medicinal plants used for many different applications.
- The MAPs collected in the mountains reflect strong therapeutic properties and 100% pureness.
- Production of essential oils is done in the traditional way, which is interesting for buyers who look for natural oils and want to contribute to the development in Nepal that they use for their own PR. Although for larger quantities, modern distillation units are required and already used by several Nepali exporters (e.g. HBTL, Gyan Herbal, HPPCL, Araa Aroma, Bahubali, Khaptad and others).
- The historical facts and the lives of women in the villages as a source for storytelling.
- The government has started to develop sustainable programmes (plantation, harvesting and production) of MAPs by using scientific forest management practices instead of improper practices which happened with yarshagumba or satuwu (source: Ansab, 2014).
- The government has developed projects for the knowledge and technology transfer to local



ESSENTIAL OILS FROM NEPAL SUCH AS TIMUR, JATAMANSI, WINTERGREEN, GINGER, CARDAMOM RHODODENDRON, ETC. CORRESPONDS WELL TO THE NEED FOR NATURAL INGREDIENTS IN FOOD, BEAUTY & PERSONAL CARE, NEW OILS FOR AROMATHERAPY, EXOTIC AND RARE SCENTS IN HIGH CLASS PERFUMERY, AND THE TENDENCY FOR RELAXATION IN EXPORT MARKETS.

communities. Besides, there is more interest of the private sector in MAPs (source: Jadibuti, 2015)

- Affordable and reasonable price level of oils from Nepal for importers from Europe or USA.

Weakness

- Difficulty in sourcing good quality seeds of reliable suppliers (India and China). However, this could be partly solved by changing to organic cultivation, with farmers using own seeds from organic plants.
- A decreasing number of labour from Nepal - working abroad - who could give a helping hand during harvesting periods.
- Landlocked country with almost all transports to go via India. Exports to Western countries are overshadowed by India being the main customer and also competitor.
- The export of essential oils is still in its early stages in Nepal. Access to good quality oils differs per company and is not consistent due to various reasons.
- Complicated administrative procedures getting release permits and paying royalties to Nepali government agencies delay lead times being increasingly important among Western customers. These procedures maintain the role of middlemen as the illiterate farmers/collectors cannot deal with this; they even cannot register their company. Moreover, strict procedures may incite ignorance and more illegal trade - similar to what happens in China, India or in other developing countries.
- Struggling to start with modern technology and to combine this with traditional techniques.
- Limited production capacity, although this is also an advantage for making 'exclusive' oils.
- Little awareness and recognition of Nepal MAPs and oils among Europeans, Americans and Chinese.
- Difficulty to create a marketing strategy focussed on a selected key segment because each oil is

having its different uses.

- Some companies depend on a few large foreign customers.
- Expensive and difficult to follow seasonal trends, particularly in fragrances.

Opportunities

- A large available area all over Nepal for cultivation of herbs with the possibility of mixed cropping.
- Essential oils from Nepal such as timur, jatamansi, curcuma, soapnuts, wintergreen, ginger, cardamom rhododendron, blue chamomile, calamus, picrorhiza corresponds well to the need for natural ingredients in food, beauty & personal care, new oils for aromatherapy, exotic and rare scents in high class perfumery, and the tendency for relaxation, health and well-being in export markets.
- Even if regulations protect the multinational OTC industry, the natural medicines market and people's self-medication is set to grow in the coming years. The populations are aging in Europe and the USA and house doctors are overcharged. There will be growing suspicion against regular OTC medicines having their undesired side-effects. Besides, cases of malpractices in the pharmaceuticals industry and politics, such as lobbying and shady practices by European politicians, are increasingly highlighted by (social) media and activist groups.
- Communicate the health aspects of timur, asparagus, jatamansi, soapnuts, wintergreen, ginger, curcuma, cardamom rhododendron, picrorhiza and calamus - not all of which are well known or recognized. However, claims should be made tactfully and carefully.
- Potential to join forces and sell under a common brand identity, either under a common Nepal (health or mountain related) brand or linked to medicinal traditional know-how of e.g. the Tharu Taru people from the Terai or the Tamang

- community in the Makawanpur district.
- Symbolism in the Nepali culture and religion corresponds well to the popularity of yoga in Western countries, coupled with curiosity for exotic oils with different flavours (in Asian healthy dishes) or fragrances. Besides, there is more sympathy from abroad for Nepal due to the earthquake.
- Big potential in China as an emerging market with a fast growing middle class population and more interest in healthy food, skin care (multi-care), air care (pollution) and natural cough/allergic remedies.
- The activities done by craftsmen/women/handicapped people or refugees in rural areas correspond well to the concern about sustainability.
- Link up the fragrance of essential oils with fashion accessories from Nepal such as shawls (Pashmina, Cashmere), blouses or sweaters.

Threats

- A continued growth in number of legislative market access requirements in Europe and USA.
- Indian countries promoting 'essential oils from the Himalaya' makes it difficult for Nepali companies to stand out when making the same claim. The practice of adulteration by some Indian companies might harm the image of oils from Nepal.
- Growing competition from India, China, Indonesia, Sri Lanka, Vietnam and in Europe, Egypt and Eastern European countries that are important nearby suppliers of many green herbs including menha and chamomile.
- Growing use of synthetic aroma chemicals due to depletion of natural sources, achieving more consistency in e.g. fragrances, stronger scents and lower prices, especially for mass BPC or household cleaning products. Although, in sophisticated BPC

products or perfumes, natural scents are preferred.

- The growing locavorism and the environmental concern regarding importing product coming a long way. Especially for organic products, people tend to give preference to locally-made products or products coming from nearby countries.

3.2 Choosing your export markets

- **In 2014, the five focus markets** covered in this report represented together for MAPs an import value of US\$ 869 million and volume of 257 thousand tonnes led by the USA, China and Germany. About 28 thousand tonnes were imported by India, with Nepal as the third supplier after Vietnam and Afghanistan. India accounted for 84% of Nepal exports with a volume of 3,308 tonnes in 2014, which slightly fell to 3,101 tonnes in 2015.
- Within the essential oils imports - valued at US\$ 1,911 million, the USA was by far the main importer (44% share) followed by France (20%) and Germany (16%). Even if exports are high in the USA and France, the three Western markets are still net importers.

Catching up MAPs exports to India

- **The majority of Indian people are poor and wages per day are much lower** than in Western countries or in China. Average values of imported MAPs are half of those of Germany or France. Nevertheless, MAPs from Nepal will be still required for hand soaps, fabric wash, talcum powder, oral care products, shaving creams and oil products that are traditionally used in hair care, skin care and body care products. Along with the expected population, demand for these products will grow as well as the traditional Ayurvedic health care products that are natural, low in price and widely used in India.
- **The Indian population is set to grow by 1.4% per year** with a larger proportion of young people compared to the other markets. With the growth of Internet usage, young Indians are exposed to global trends in health food and BPC products. This is likely to generate a demand and



In 2014, the five focus markets covered in this report represented together for MAPs an import value of **US\$ 869 million** and volume of 257 thousand tonnes led by the USA, China and Germany.

more receptiveness for different types of flavour and fragrance products using natural/healthy ingredients. Colour cosmetics, hair care products using amla, shikakai and reetha are expected to be growth categories in mass BPC products - still dominant in the Indian market.

- **India's middle class was estimated at 30 million** people in 2012 and represented 3% of the population. As the Indian economy is growing, prospects are bright for the coming years and the number of double-income households will certainly increase. Along with the rise in disposable incomes, women and men will spend more on their looks and appearance.
- **The Indian Premium BPC (Beauty and Personal Care)** market is still a small niche market compared to the other selected countries with flavour and herbal traditional medicines as sizeable categories. Products of Western luxury brands using natural or organic ingredients are affordable for affluent Indian people. However, Indian companies use marketing and social

promotion in the local language and offer their health food and BPC products in small sized pack to make them affordable.

The three western markets as a springboard

- **The USA, France and Germany are the most interesting and lucrative markets** with well-established suppliers setting International trends. Despite the challenges to meet the strict market access requirements, they act as a springboard to other global markets:
 - A success in the USA leads to easier entry in the UK, other European countries, Australia, New Zealand, Japan and other Asian countries.
 - While a success in France leads to easier entry in all French-speaking countries (e.g. Canada), Japan, China, Malaysia and emerging Asian countries following the trends in perfumes/ fragrances and the flavours in French cuisine as more French restaurants open up there and the still growing numbers of tourists visiting France.

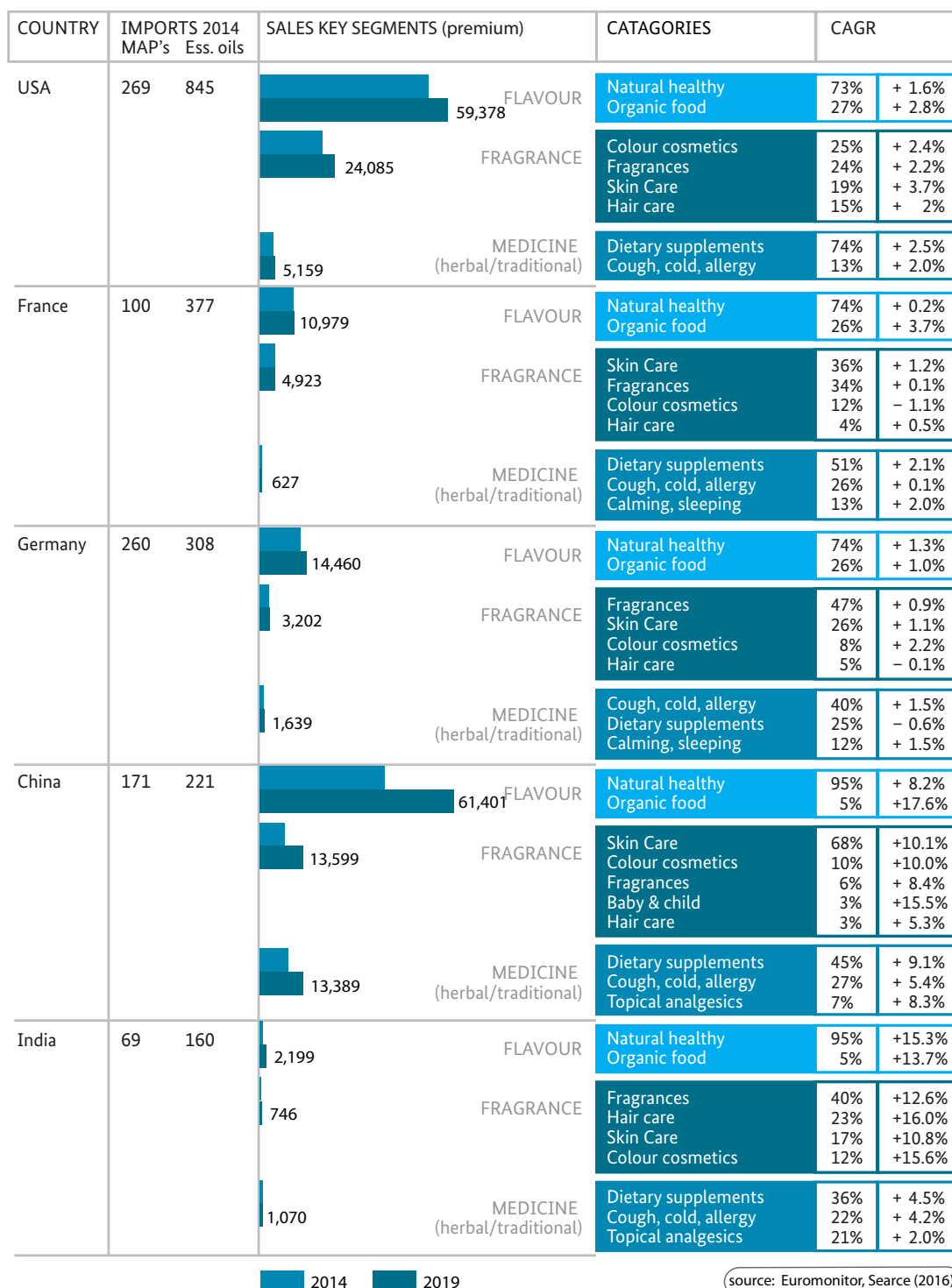
TO ACHIEVE AN INCREASE OF 15% BY VALUE AND VOLUME IN MAPs AND ESSENTIAL OILS, A RECOMMENDED APPROACH TO CHOOSE EXPORT MARKETS COULD BE THE FOLLOWING:

- CATCHING UP EXPORTS OF MAPs TO THE INDIAN MARKET
- EXPORTING ESSENTIAL OILS TO THE THREE WESTERN MARKETS USING THEM AS A SPRINGBOARD
- TAKE ADVANTAGE FROM THE SURGING CHINESE MARKET
- CATCHING UP MAPs EXPORTS TO INDIA



- A success in Germany enables easier entry in Austria and Switzerland.

FIGURE 10: IMPORTS AND SALES FORECAST, US \$ MILLION



- **The USA offers the best growth prospects in the three premium key segments.** Looking at the future development of the premium flavour segments, the USA market will reach a sales value of US\$ 59.3 billion in 2019.
- **In the premium flavour segment,** American people - especially millennials and baby boomers - started to realize that unprocessed fresh food can be healthy, helps to slim down and contains high proteins in order to perform well in their busy life. Organic food accounted for 27% of the premium flavour segment and is expected to grow steadily by a CAGR of 2.8% between 2014 and 2019.
- **In the three countries, cold organic beverages with typical (spicy) tastes and herbal teas** will be preferred to sweetened carbonated drinks that are more expensive due to the 'soda tax' or 'red bull tax' forcing manufacturers to develop drinks free from sugar or aspartame.
- **In France and Germany,** people prefer to buy fresh food and premium packaged food. Consumers who have a limited budget are still aiming to have food of a good quality even if they can do this less often. Driven by popular reality TV competitions, people become more open to cuisines from other countries. While Germany as a Green Nation, people are very much aware of what they eat, the kind of ingredients and health benefits. With a greater population diversity, German people will be increasingly receptive to exotic dishes.
- **In the premium BPC segment,** the demand for cosmetic ingredients is driven by a growing number of anti-aging products and new multifunctional product launches.
- **The chic-natural beauty trend in make-up and colour cosmetics** is likely to stay - being in contrast with the heavy make-up look. In the three Western markets, skin care is the best growth category. Skincare accounted for 36% of the BPC market in France and is expected to grow by a CAGR of 1.2% in the coming years. French media increasingly put the side effects of many of the artificial substances used in the manufacture of Mass BPC products under the attention. Germany is leading the Green beauty market as one of the pioneers in this field.



- **In premium hair care** particularly in the USA, there interest is rising in shampoos and conditioners that are less damaging to hair and enough caring. Medicated shampoos and hair oils are growing niches in France.
- **In the premium fragrance segment**, the perfume culture stays in France and Germany. Fragrances accounted for 47% in the German premium BPC market in 2014 and are expected to grow by 0.9%. While fragrances take up a smaller part (24%) of the US market which has quickly become mature due to an overkill of celebrity perfumes.
- **A successful scent in perfumes** will serve as a springboard to enter the fragrance segment for e.g. BPC products (bath & shower, shampoos) or for household cleaning products.
- **In the herbal traditional segment**, the expansion of Chinese pharmaceutical companies in the three Western markets will drive the popularity of traditional medicines from China as well as from other Asian countries. Curcuma is discovered as one of the new herbal medicines and used in many dietary supplements. It is included in food supplements for joint health, cholesterol management, liver support or used against inflammation.
- **Aromatherapy is likely to gain more ground along with the trend towards more self-medication and well-being.** Through promotion campaign and direct selling via social media, the awareness and popularity of aromatherapy will move more towards the mainstream market. Although there is a risk that the precious value of natural oils may be affected by adulteration and more use of chemical profiles in popular essential oils, which is increasingly offered by e.g. mass merchandisers.
- **A promising trend is the rise in sustainable sourcing strategies of Western companies** to meet growing concerns about the environment among their consumers. This trend goes hand in hand with more collaboration with producers in own country or in developing countries. Some companies also grow their own raw material to guarantee the origin and the constant quality of their natural ingredients.



Take advantage of the surging Chinese Market

Resulting from profound reforms in the Chinese export driven economy, the middle class has risen to 18% of the Chinese population. They are expected to reach 854 million people by 2035.

- **Growth rates of the Chinese flavour market** are larger than in Western markets, albeit the explosive Chinese market growth has slowed down since 2012. In the industrialised Eastern part, the Chinese are more receptive to upscale healthy food and drinks in order to stay fit and productive in an increasingly busy society. The organic food category is still small and new. The premium flavour segment in China is expected to reach US\$ 61.4 billion by 2019.
- **China shows the largest growth rates in the premium BPC segment.** The middle and western part will further develop and the baby & childcare category will grow, keeping the two-child policy in mind. China also has the largest herbal/traditionally medicine market. Import regulations of MAPs from Nepal for medicinal use are less strict than in Europe, and many sales go direct via practitioners. On the other hand, the Custom duties and VAT rates are relatively high.
- **A challenge will be to build up a long-term successful business with the Chinese** and care should be taken by both the Nepali and Chinese governments to severely control and **limit quantities of exported MAPs that risk depletion in Nepal or illegal trade** like what happened with yarshagumba.



The premium flavour segment in China is expected to reach **US\$ 61.4 billion** by 2019.

3.3 Global Trends in ingredients and Final consumers

The most relevant trends in the development of ingredients in the three key segments are:

Beauty and personal care (BPC)

More than 5,000 ingredients in the formulation and composition of cosmetic products are used. Demand by companies for new ingredients that are natural and give health benefits continues to grow. For example:

- **Algae**, which are known for their high concentration of vitamins, minerals, amino acids and antioxidants, marine extracts from macro algae (seaweed and kelp). The use of algae is further explored in skincare and hair care.
- **Multi-purpose oils**, for example oil from the Marula fruit, is a new ingredient used in both skin and hair care products and known for moisturizing, anti-aging, cleaning and defrosting.
- **Specific animal products** in Asian beauty treatments and skin care using secreting mucus of snails crawling around on faces. Based on this treatment, new anti-aging products such as Organic Doctor's snail gel, Dermarie Skin Tightening are introduced. The latest ingredient is an extract from starfish used in 'starfish cream' introduced by Mizon from Korea being also popular in China.

Fragrance

- **Timur or Nepali pepper is now** recognised as a special ingredient spicing up fine and exotic fragrances. Bright Neri by Ferrari, Clinique Aromatics in White, and Mercedes-Benz VIP Club Infinite Spicy are examples of fragrances with Nepali pepper accords. Other examples can be found at www.fragrantica.com/notes/Sichuan-Pepper-213.html. Timur may be a fad, but launches by big fashion brands certainly create opportunities for new unique spices or herbs in exotic perfumes and fragrances.
- **Oud wood-based ingredients** used in prestige fine and rare fragrances, have been a trend among

affluent women and men. The Oud scent is very specific coming from resin of old agar wood trees from Southeast Asian countries, including Nepal. The resin and distilled oil are called 'liquid gold'. Its musky, animal-like scent is very strong. Some people love it while others find it offensive and gross. Perfumes using oud is so expensive because of its rarity. Several leading fashion brands have developed perfumes based on Oud. It remains to be seen how long this trend will last.

- **Nepal Oud.** A perfume called Nepali Aoud uses Nepalese Oud combined with nutmeg, saffron, vanilla, leather and Musk sold at prices up to US\$ 170 for 100 ml.
- **New variations on successful scents.** Large flavour houses developing specific scents for the perfume industry, refine them further, and release new variations. Interpretations of roses can vary from Derrrose, Rose de Grasse, Swiss Rose Stem to exotic rose origins such as Bulgarian rose, Moroccan Rose, Rose de Damas or Wild Rose. See more on www.trendincite.com
- **Continued development of synthetic aroma chemicals within companies.** The major threat in fragrance regarding the use of essential oil and natural products is the continued development of synthetic aroma chemicals. Fragrance houses increasingly rely on reconstitutions of essential oils due to limited supply of natural oils. New sophisticated and sensitive analytical techniques enable laboratory staff of aroma manufacturers/fragrance houses to isolate molecules from essential oils and synthesize these compounds. Especially in lower cost functional fragrance applications such as household cleaning products, bath & shower, shampoos, albeit rare natural oils are still favoured in fine fragrances (perfumery).



Flavour

- **Coconut water, milk, and oil are all “it” ingredients with different applications, e.g.** in food, drinks and BPC products. Coconut milk and oil are stylish in bath & shower and hair care products for its emollient properties while coconut water is gaining ground as a healthy drink.
- **Activated Charcoal** is used in cold-pressed juices and as anti-aging skin treatment to draw out and trap impurities. It was used for many years in facial products such as masks, scrubs, and cleaners.
- **The ‘back to basics idea’ among consumers.** Fermentation trend - There is a strong consumer resonance with the ‘back to basics idea’. Instead of standardised chemical ingredients. There is a growing preference for products that are minimally processed and more easily digested.

Pharmaceutical

Opportunities in health care industry

- **More interest in natural health** care and growing recognition of harmony between mind and body has driven the market for natural medicines, essential oils in the past decades, although the development was often constrained by regulations or questions about their efficacy due to a lack of scientific proof in the Western world.
- **Several scandals, malpractices by internet sellers of regular medicines and by politicians,** sales of discounted medicines under private label, and undesired side effects, has generated more suspicion regarding the quality of conventional medicines.
- **There is a pill fatigue among the growing elderly population** that has created opportunities for innovation in new herbal medicines and aromatherapy giving more targeted and gentle solutions.

Final Consumers

The final consumers who are most likely to be interested in natural products from Nepal are:

The highly conscious consumers who mainly live in Germany, Scandinavia, Switzerland, the USA, France, UK and the Netherlands. They are 30-60 year-old women/men with a mid-high level education

TRENDY CONSCIOUS CONSUMERS MAINLY LIVE IN THE USA, UK, NETHERLANDS, FRANCE, SCANDINAVIA, GERMANY AND ITALY OF THE AGE GROUP 20 - 50 YEARS OLD.

and an average-high income. They have an interest and knowledge of the sustainable dimensions regarding the products they buy. Even if they now represent a small part of consumers, their number is growing because of more media attention on unethical practices in global business. They have a strong opinion about product benefits, impact on the environment and take decisions in a more considered way. For example, when buying a facial cream made with e.g. timur oil from Nepal, following additional values are important for them - apart from its functional properties and price :

Ingredients and material

- The use of natural ingredients and essential oils
- The use of re-cycled material that is used to make this cream.

Quality:

- High level of product quality for longer use.
- High-quality workmanship and well packed in boxes/jars of recycled material

Sourcing:

- Local sourcing of raw MAPs i.e. not coming a long way from other countries.

Social impact:

- Positive social/cultural impact in working conditions and wages.
- Corporate policies, cultural values and fair trade

conditions.

Transparency in how the cream is made and concerned about environmental and social issues and therefore they are likely to sympathise with Nepal.

Trendy conscious consumers mainly live in the USA, UK, Netherlands, France, Scandinavia, Germany and Italy. They are 20-50-year-old people looking for a warm social life and like to express their own personal style and show this to their friends/relatives. They have a low-average income (€ 1,500 - 3,500/month), admire creativity and craftsmanship. The main difference with highly conscious is that they are sensitive to (fashion) trends, new products with an attractive design and to stories attached to these products. In addition, their level of consciousness is not fully consistent and they can be fickle.

Because they are younger, they are open to new experiences, travel more and do not want to belong to the mainstream. This implies that they have quite a 'fresh view' on sustainability. They want to 'do good' but in a unique or light way. They inform themselves well and are open to natural/beautiful products that express the art of other cultures and the soul/spirit of its artist.



DIGITAL COMMUNICATION IS BECOMING INCREASINGLY IMPORTANT ALSO IN THIS SECTOR AND CONSUMERS ARE BETTER INFORMED

WHAT'S RELEVANT FOR YOU ?

TRANSPARENCY IS BECOMING VITAL FOR INDUSTRIES AND CONSUMERS

Digital communication is becoming increasingly important and consumers are better informed. Potential dangers of preservative parabens are now well-known because information goes quickly over the internet. Therefore, transparency and brand consistency are now vital for industries, retailers to keep up good relations with end consumers.

YOUNG CONSUMERS CONTINUOUSLY LOOK FOR THE LATEST PRODUCT INNOVATIONS

Many different personal care and fine fragrance products on store shelves—all trying to get consumers attention. New and unusual ingredients that deliver a specific benefit, demonstrate authenticity, or create interest are key in new product introductions. Driven by global society and shifting cultural demographics, consumer expectations for exotic and unique ingredients are increasing.

Nepali consumers living abroad

According to the World Bank, more than 2 million Nepal people lived abroad in 2013, which was mainly in Saudi Arabia and Gulf States (1 million people), Malaysia (56,000), UK (38,000), Bangladesh (38,000) and Australia (31,000). Within the selected countries the number of Nepali were:

India	There are no consistent figures. Data from the WorldBank (2010) and Wikipedia estimate that the Nepal-born in India ranges between 500,000 up to 5 million people.
USA	88,000 people
China	20,000 people (of which 16,000 in Hong Kong)
Germany	5,000 people
France	less than 5,000 people.

Nepali migrants are an interesting consumer group for essential oils and commodities as they are familiar with the specific MAPs from Nepal. In addition to buying products, they could act as ambassadors to explain the therapeutic benefits and the long tradition of oil production in Nepal. Communities in the selected countries, embassies or universities could be contacted.

3.4 How to comply with access requirements

Access requirements are all the requirements you can expect from your buyer. They can be divided into three groups:

Legislative requirements

Quality requirements

Voluntary requirements

Legislative requirements are mandatory and subject to penalties if they are ignored, especially in Europe and USA. These are related to environmental protection, food safety for consumers and hygiene. Voluntary requirements cover similar issues and are meant to improve good agriculture practices and to social issues. Last but not least, quality requirements must be met during the first export trials. In fact, good quality is the baseline for a successful business relationship.

3.4.1 Legislative requirements Legislation in Nepal

According to the GIZ INCLUDE study on essential oils of anthopogon, juniper and wintergreen by Khilendra Gurung (2010), the following document

and certificates are required in Nepal for the Customs Clearance:

- Certificate of industry registration/exporting company/firm
- Tax: Permanent Account Number (PAN) or VAT registration certificate
- Commercial invoice
- Payment certificate: Letter of Credit (L/C) or Advance Payment Certificate (APC)
- Certificate of origin
- Generalized System of Preference (GSP) form or form A
- Type copy of formatted application stating name and address of importer and exporter
- Packing lists
- Means of transportation and route
- Bio-safety statement/Material safety data sheet (MSDS)

Below is a list of 8 mandatory certificates and the issuing institutions.

CERTIFICATES/DOCUMENTS	AUTHORIZED ISSUING INSTITUTIONS
Release permit	District Forest Office (DFO)
Certificate of advance payment of L/C	Commercial Banks
Company registration	Department of Commerce (DOC), Department of Cottage and Small Industries Board (DCSIB), Office of Company Registrar
PAN/VAT registration	Department of Inland Revenue
Generalized system preference (GSP) form	Trade and Export Promotion Center (TPC)
Certificate of origin	Federation of Nepalese Chamber of Commerce and Industries (FNCCI), Confederation of Nepalese Industries (CNI)
Non-hazardous/Non-explosive	Exporting companies/ firms
Recommendation letter to Customs	Department of Plant Resources (DPR)

More details can be found in the report (Chapter 4) that can be downloaded from:
<http://www.includenepal.org/pdf/Sector%20Study%20of%20Essential%20Oils%20in%20Nepal,%20GTZ%20KG%202010.pdf>

Legislation in the five selected markets

USA and EUROPE

The regulatory barriers to enter the USA market are lower than Europe. In addition to the CITES regulations, the following legislation must be respected:

FOOD LEGISLATION

HACCP rules regarding safety and hygiene when the MAPs/oils are used in food must be followed and you must show a Certificate of origin as a proof that your shipment is free of injurious plant pests and diseases.

The HACCP rules should be respected in Europe as well.

COSMETIC REGULATION

The Food, Drug, and Cosmetic Act (FD&C Act) requires that every cosmetic and personal care product and its ingredients must be substantiated for safety before going to the market, and that they contain no prohibited ingredients. You will have to check if your MAPs/oils are on this ingredient list that can be found at www.cosmeticsinfo.org/cosmetic-regulation-us

Other legislative regulations to observe are:

- **Due to the absence of legal standards** for MAPs or essential oils, there is no clear definition of the product content, nor of the purity of an essential oil. Essential oils sold in the US market are sometimes contaminated with heavy metals or being mixed with conventional medicines. There

is also no legal standard in the other selected markets.

- **Botanical products are regarded as food supplements**, which also applies to MAPs and essential oils. They are not regulated as prescription or OTC drugs. But be careful with claims!
- **When making claims, make sure that they are verifiable** and cannot be defined as 'therapeutic claims' (i.e. treating a symptom or disease). If the company follows this rule, the product can be sold in the USA, unless someone can prove that it is

PLANT PRODUCTS THAT ARE IMPORTED FROM DEVELOPING COUNTRIES MUST PASS THROUGH DESIGNATED BORDER INSPECTION POSTS (BIPS) WHERE THEY ARE SUBJECTED TO A SERIES OF CHECKS

unsafe. In that case, the FDA can prohibit sales of the MAP or oil concerned because it could provide a significant risk of injury. Also in Europe, claims must be made in a considered way.

There are three forms of health claims:

- **Nutrition claims:** 'any claim that a food has particular nutritional properties due to: the energy it provides, the nutrients or other substances it contains'
- **Health claims:** 'any claim that a relationship exists between health and a food category, a kind of food or one of its constituents.'
- **Reduction of disease risk claims:** 'any claim that the consumption of a food category, a kind food or one of its constituents significantly reduces a risk factor in the development of a human disease'.



CLAIMS MUST NOT:

- be false, ambiguous or misleading create doubt about the safety and/or nutritional adequacy of other foods.
- encourage or ignore excess consumption of a food.
- state or imply that a balanced and varied diet cannot provide appropriate quantities of

nutrients (except for some specific national conditions).

- refer, in words or through pictures, graphics or symbols, to changes in bodily functions that could give rise to, or exploit consumer fear.

More details on USA regulations can be found in Chapter 2.5

EUROPE

When your MAPs or essential oils arrive at the first port of entry in Europe, there are the following checks:

EU import checks. Plant products that are imported from developing countries must pass through designated Border Inspection Posts (BIPs) where they are subjected to a series of checks. If passed they are allowed access to circulate freely to other EU Member States.

Phytosanitary Certificate. Compulsory plant health checks are carried out on all plants and plant products coming from non-EU countries in which MAPs and oils are included. The certificate that was issued in Nepal country is double-checked to ensure the consignment is free from harmful organisms.

Legal requirements are to guarantee consumer safety, preventing that substances that are dangerous to health enter the EU. If your MAPs/oils do not meet these requirements, they are not allowed on the EU market and you (or your trade partner) run the risk to get a penalty (up to € 70,000) if consumers make an official complaint. Food scandals in Europe underlined the importance of (legislative) requirements by supermarkets, grocery retailers and particularly by discounters being under a severe control from Ministries of Health.

Consequently, legal requirements that focus on hygiene, traceability and maximum residue levels for certain pesticides and contaminants that can be present in your MAPs, essential oils, concentrates, oleoresins etc. have been put in place to guarantee the safety to EU consumers.

FOOD LEGISLATION

- **The General Food Law** (Regulation (EC) 178/2006) which prohibits the introduction of unsafe food to the EU market and defines its **traceability** of its ingredients through all stages of production, processing and distribution. You or your importer/trade partner must be able to give clarification.
- **Hygiene of foodstuffs** (Regulations (EC) 852/2004; 853/2004; 854/2004) being based on the HACCP principles.
- **EU legislation restricting pesticides** and contaminants in EU food including MRLs, contaminants etc..

BPC AND COSMETIC LEGISLATION

Contrary to the USA, there is no clear EU regulation to define natural or organic cosmetics (dictated by the Department of Agriculture). However, there are regulations regarding product safety.

EU Cosmetic Directive on safety where you must be careful if cosmetic products using your MAPs/oils could harm someone's health when they use it. For example, if essential oils are directly used on the skin, they may cause allergic reactions. There will be legislation coming up for lemongrass, wintergreen, cinnamon and chamomile.

Product safety report and Product information file.

Before launching the final product in the market, the producer/processor/importer must have a cosmetic safety assessment carried out on the product, followed by the preparation of a cosmetic product safety report, and to prepare a product information file. This must be done by someone with a formal qualification, which could be (found via) your trade partner. The European Commission (EC) should be

notified via the Cosmetic Product Notification Portal at <http://ec.europa.eu/growth/sectors/cosmetics/>. Notification is free of charge.

The cosmos standard. Here you have to check if your essential oil is included in the 30 authorized oils by cosmos-standard that can be used in organic/natural cosmetics:

wormwood, basil methyl-chavicol, bay St Thomas, Roman chamomile, cinnamon (bark, leaves), cardamom, carrot seeds, cistus ladanifère, lemon, davana, galbanum, geranium, ginger, bitter orange, bay leaves, lavandin, lavender, magnolia, myrtle, neroli, patchouli, petit grain, black pepper, roses, sandalwood, soft schinus, tagete, white thyme and vetiver.

Fragrance (perfume)

New legislation about the composition of perfumes. The European Union currently develops with the Committee Scientific new legislation about the composition of perfumes. Avoid the use of atranol and chloratranol which are prohibited as they have allergic properties (skin irritation, asthma). Also, avoid the use of natural ingredients such as citral and the toxic coumarin that is found in lemon verbena oil and lemon grass. Other oils with potential risks for health can be found at <http://hopewelloils.com/pharmaceutical.php>

Herbal traditional medicines

Registration of medicines can be done under new European legislation specifically for herbal products with traditional use. But it will be difficult/impossible for you to show evidence that your herbal product has been effective for 15 years in Europe and for an additional 15 year in other countries. This registration involves much administrative work regarding the quality and safety of the product and requires the help of an expert and some investments.

The best option to go around this is to export as herbal food supplement. Herbal products could be also exported as herbal food supplements instead of a medicinal product. In this case, regulation is more relaxed and the product falls into a 'borderline' category.

REACH Regulation

To guarantee the safety of the MAP or oil sold in the European market, the REACH legislation on Chemicals - Regulation (EC) 1907/2006 – is the main regulation with the obligation to register the essential oils to determine the content of dangerous/toxic substances that are present in e.g. wintergreen of valerian, or to find out potential allergic reactions of oils (e.g. in palmarosa).

Since 2014, HICC (lyral), atranol and chloratranol are forbidden. Up to now, exported quantities below 1 tonne do not need registration.

From 2018, it is expected that all oils and other ingredients that contain substances posing a risk for consumer's health need registration in any exported quantity. At present 30,000 substances are registered. The costs (US\$) for REACH registration depend on the quantity and the size of your company and are given in the French Chapter 3.3.1

How to deal with REACH

Your trade partner (processor, importer, wholesaler etc.) is responsible to verify if your product contains lead, cadmium, nickel, azo dyes or other substances that are dangerous for the consumer's health. However, he definitely will come to you in case of problems.

- The best would be to be sure that your plant/herb or oil does not contain (chemical) substances that could generate allergic reactions. You could do an analysis in Nepal.
- On the website of the European Chemicals Agency (<http://echa.europa.eu/>), you can find out if the substances or uses in your inventory are exempted from the registration under REACH.
- If there are substances in your plant/herb or oil, discuss it with your trade partner. He should do the registration procedure of dangerous substances in your product at the European Chemicals Agency (ECHA). Therefore, he requires a clarification from you e.g. more details about the substances (name, characteristics, exported quantity/year, origin and final destination).

3.4.2 Quality requirements

The most important criteria for buyers are that the MAPs and essential oils are clean and bacteria free. They also look at the appearance, flavour, colour, volatile oil content, cleanliness and aroma.

In essential oils, the quality is related to its aroma and exact percentage of each natural constituent

in pure and unadulterated oils. These constituents include acids, alcohols, aldehydes, coumarins, esters, ketones, lactones, oxides, phenols or terpenes.

In general, the level of constituents that are present in the oil depends on:

- The quality of the soil where the botanical/MAP is grown
- The amount of rainfall
- The temperature/climate
- The altitude
- The way the botanical/MAP is harvested
- The way the botanical is stored prior to distillation
- The length of time that passes between when the botanical was harvested and when it is distilled into an essential oil
- The exact part of the plant used in the distillation of the oil

- The type of distillation equipment being used including the material it is made out of (i.e. copper vs. steel components)
- The storage conditions of the essential oil
- Any adulteration/tampering with the essential oil

Common ways that essential oils are adulterated are:

- Blending/combining other less expensive essential oils and fraudulently marketing the oil as pure, more costly oil. (e.g. lavender oil with linalyl acetate).
- Blending a higher quality essential oil with a lower quality version of the same species.
- Adding individual constituents, whether naturally or synthetically derived, to an essential oil.
- Adding synthetics to improve the aroma.
- Adding vegetable (carrier) oils and not disclosing the dilution to the end consumer. This can be easily detected by the consumer by simply placing several drops of the oil on a tissue or perfumery blotter and waiting for the oil to dry out. If an oily ring remains, the essential oil has been diluted with vegetable oils.

In quality control you should check the chemistry. Annex 6 gives a description of all selected oils from Nepal for this study. To improve quality control, think about the following:

+Jatamansi (nardostachys)	Important to guarantee that the roots are not adulterated with roots of <i>Cymbopogon schoenanthus</i> and <i>Selenium vaginatum</i> .
+Chamomile (matricaria)	It would be paramount to specify which chemotype is being distilled: there are at least six: CT B; CT C; CT D; CT E and CT F → See Annex 6 It is fundamental that the oil is protected from oxidation and direct light. Important to guarantee that it is not adulterated with oil from <i>Artemisia</i> .
+Gaultheria (procumbens)	Fundamental to ensure the oil is genuine and not synthetic methyl salicylate.
+Ginger (Zingiber offic.)	Important that it is distilled long enough to get the sesquiterpene fraction.
+Palmarosa (Cymbopogon martinii)	Gingergrass (<i>C. martini</i> var. <i>sofia</i>) is a very common adulterant.
+Lemongrass (Cymbopogon flexuosus)	Others: turpetine, citronella and synthetic geraniol. Extremely cheap, not adulterated.

A WELL-ELABORATED TECHNICAL DATA SHEET (TDS) CAN FACILITATE THE SOURCING PROCESS FOR BUYERS ENORMOUSLY BY MAKING IT EASIER FOR THEM TO DETERMINE WHETHER A PRODUCT'S QUALITY IS SUITABLE FOR THEM OR NOT

**Other suggestions for quality improvement:
USE THE BEST PLANTS**

- Verify well beforehand if the plants used for distillation are powerful. Use fresh and well-cleaned plants. Use plants of an identical quality. Sort plants according to quality level.
- Buy raw material from pest-free areas/sources and use IPM (Apply Integrated Pest Management) to avoid or stay below the allowed MRLs.

MOTIVATE COLLECTORS

- Prevent contamination by sand and undesired plant parts and inform/train collectors accordingly. They should use clean equipment. You could motivate collectors by giving them incentives.
- Monitor harvesting practices through regular inspections and by blending essential oils from different harvests (e.g. early and late harvests, or different areas).

USE SAME PLANTS FROM SAME HARVESTS

- Do not mix plants from different harvest and do not mix oils from different harvests.

MINIMIZE THE TIME BETWEEN HARVESTING AND DISTILLATION

- Try to do the distillation as short as possible after harvesting to keep the flavour/fragrance.

CERTIFICATE OF AUTHENTICITY

- Prevent adulteration and contamination by foreign substances. You could provide your customer a Certificate of authenticity regarding the chemistry of the oil.

KEEP THE OIL IN CLEAN CANS/DRUMS AND CLEAN PLACES

- The MAPs and essential oil must be kept in clean places in low temperatures. Use new or very well cleaned oil cans i.e. no cans in which other substances were kept in the past.

It happened that laboratories found residues of gasoline or even chicken feathers when analysing oils from developing countries!

You can also anticipate quality requirements by finding out properties of oils via ISO standards such as for:

- **Ginger oil** (*Zingiber officinale* Roscoe) - ISO standard 16928:2014
- **Wintergreen oil** - from China (*Gaultheria yunnanensis*) - ISO standard 21390:2005

For other selected oils, there are no specific standards. A general standard for essential oils is related to the determination of peroxide value - ISO standard 18321:2015

USE OF A TECHNICAL DATA SHEET

A well-elaborated Technical Data Sheet (TDS) can facilitate the sourcing process for buyers enormously by making it easier for them to determine whether a product's quality is suitable for them or not. You can download a manual to prepare a TDS for natural food additives at <https://www.cbi.eu/market-information/natural-colours-flavours-thickeners/technical-data-sheet-preparation-manual/>

LABORATORY TESTS

Several quantifiable tests exist that allow scientists, producers, suppliers and end users to be able to test their oils to determine quality and help to ascertain if an oil is pure and of the quality sought after for each particular plant, herb or oil. Buyers' own

LGC PHARMACEUTICAL IMPURITY STANDARDS, A CERTIFICATE OF ANALYSIS (COFA) CAN BE SUPPLIED THAT GIVES A GREATER ANALYTICAL FLEXIBILITY AND CERTAINTY.

laboratories or accredited laboratories will analyse your oils on the level of constituents, adulteration and the presence of MRLs or allergic compounds.

LGC Standard

LGC Standards is a leading measurement Institute for chemical and bio analytical measurements and leader in laboratory services based in the UK, USA and Germany. They have a network of 20 in 5 continents. Other services include providing measurement quality control standards (including ISO), reference materials, genomics and proficiency testing marketplaces. They manufacture over 3,000 pharmaceutical impurity reference materials in compliance with international regulations. LGC Standards covers an extensive range of pharmaceutical impurities and active pharmaceutical ingredients (API) reference materials along with custom synthesis capabilities.



In addition to the LGC pharmaceutical impurity standards, a certificate of analysis (CofA) can be supplied that gives a greater analytical flexibility and certainty. LGC Standards provides supplementary products such as secondary reference standards

which are compared to USP, EP or BP and accompanied with the advanced certificate of analysis.

More information can be found at:

- <http://www.lgcstandards.com/DE/en/About-LGC-Standards>
- Search for impurity standards

For applications of maps and oils in food: CODEX ALIMENTARIUS

The Codex Alimentarius or “Food Code” was established by FAO and the World Health Organization in 1963 to develop harmonised international standards related to food hygiene, maximum limits for food additives, residues of pesticides, veterinary drugs and maximum limits and codes for the prevention of chemical and microbiological contamination. Even if these standards are voluntary, they are used as a reference, especially for EU legislation of national legislation for the protection of consumer health. There are more than 200 standards, 70 guidelines and 50 codes of practices that can be found at www.fao.org/fao-who-codexalimentarius/standards/en/ For the selected products, following codex standards can be downloaded:

	DOWNLOADABLE STANDARD
Ginger	CODEX STAN 218-1999
Hygiene practice for spices and dried aromatic herbs	CAC/RCP 42-1995
Guide for the Microbiological Quality of Spices and Herbs Used in Processed Meat and Poultry Products	CAC/GL 14-1991
Standard for Labelling of and Claims for Foods for Special Medical Purposes	CODEX STAN 180-1991
Standard for Edible Fats and Oils not Covered by Individual Standards	CODEX STAN 19-1991
Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk	CAC/RCP 36-1987
Standard for Dried Edible Fungi	CODEX STAN 39-1981
General Standard for Food Additives	CODEX STAN 192-1995

Critical notes and discussion issues regarding the Codex Alimentarius

- The media and NGOs argue that guidelines of the Codex about health claims seem to be in favour of the pharmaceutical industry. These guidelines place severe restrictions on natural forms of healthcare. It are only pharmaceutical drugs that are allowed to make claims related to the prevention, alleviation, treatment and cure of diseases.
- Similar guidelines apply to health claims for balanced diet or ordinary foods which does not seem to 'supply adequate amounts of all nutrients'. The increasing demand for organic foods initially regarded a threat to the pharmaceutical and chemical industries; not only because organic foods promote good health, however, but also because they result in a lower demand for pesticides, veterinary drugs and GM foods – and thus lower profits for the pharmaceutical industry.

In this respect, the Codex Alimentarius should be seen as a voluntary standard that buyers use a reference for food safety and hygiene - similar as HACCP - and to improve the quality of exported crops such as ginger. More information can be found at:

- <http://www.fao.org/fao-who-codexalimentarius/standards/en/>
- <http://www.xcodex.org/>
- <http://www.fao.org/fao-who-codexalimentarius/faqs/rumours/en/>

SOME GENERAL TRENDS RELATED TO QUALITY AND BUYING BEHAVIOUR

- **Buyers still tend to stick to their current suppliers** to minimize variations in quality. The quality of essential oils can fluctuate. Clove oil or thyme, oregano, mint or citrus can oxidate rapidly which affects the taste, smell and viscosity. This is also critical in the increasingly standardized food production. A lack of stability means a strong competitive disadvantage. Buyers switch to another supplier or choose synthetic oils instead to limit the risk of oxidation.
- **Because the consuming industry** (e.g. drink manufacturer) **wants a consistent tasting cold drink**, either they, their flavour house or

processor, seek consistent quality oils that can provide certain flavours that are typical/unique for his drinks. This often means a buyer is likely to purchase oil from certain growers that have a history of producing consistent-quality.

- **In the fragrance market, a long shelf life is very important.** An estimated 90% of the market is supplied by synthetic oils or extracts. The usage of essential oils is limited to applications with a shorter lifespan such as fresh beverages.
- **Incomplete flavour profiles in oils limit applications.** Essential oils do not contain the non-volatile component of the plant. Therefore, the flavour profile is incomplete. This situation limits to use, for example, replacements of spices/herbs by spice extracts. Spice essential oils such as chili or thyme are available on the market, but there incomplete flavour profile induces a lack of bite, and oleoresins are preferred for these applications.

THE IMPORTANCE OF STORAGE

Proper storage of the MAPs or oils is also highly important as it can compromise quality. Storage materials should be opaque and should be glass bottles; aluminium bottles and drums (used for expensive essential oils); lacquered and lined steel drums; and, plastic drums in high-density polyethylene, which is less expensive than lined steel drums. Before they are stored for shipment, oils should be dried by filtration.

SAMPLES

Before buyers of essential oils and essential oil products make a full order it is normal procedure that a sample is first shipped to them for assessment and quality testing. The sample shipment should show the producer name, date, sample contents, batch number and quantity represented. Plastic bottles are not suitable. Individual bottles of each sample should be sent in plastic bags to avoid or isolate leakages.



An estimated **90%** of the market is supplied by synthetic oils or extracts.

In addition to the requirements in the previous section, some buyers may ask you for:

- Material safety data sheet
- Technical data sheet
- Pesticide residue analysis (related to the MRL legislation)
- GMO free declaration
- Declaration of non animal product derivatives
- For products used in the flavour segment, you may be asked to obtain a Kosher certificate even if this is mainly for animals.

QUALITY AND PURCHASING

According to Murray Hunters' Handbook for essential oils, the key factors that the industry reports as influencing purchasing decisions by professional aromatherapists are, in order of importance:

- Chemical analysis (GC/MS) available
- Organic certification
- Sustainably grown and harvested
- Traceability to show grown organically, but no certification
- Price
- Country of origin
- Plant at-risk status (endangered status)
- Age of oil
- Storage conditions used for oil
- Wild crafted

The list shows clearly that the primary purchasing criteria for users in the sector are the chemical composition of the oil, how the crop was cultivated with a very strong requirement for an organic cultivation whether or not actually certified under a formal scheme, and the sustainability of production.

LABELLING

Shipments of MAPs or essential oils should have the following on the labels (in English):

- Product name/INCI name
- Batch code
- Place of origin
- Name and address of exporter
- Date of manufacture
- Best before date
- Net weight
- Recommended storage conditions

Essential oils are regarded as hazardous chemical substances which must be clearly indicated on the packaging and labels and use the international recognized hazard symbols and safety phrases.

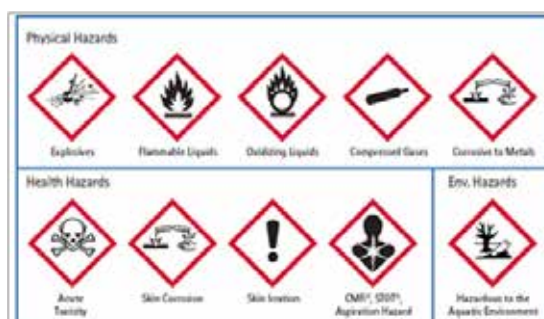
MATERIAL SAFETY DATA SHEET

A Material Safety Data Sheet (MSDS) is designed to provide people with the proper procedures for handling or working with a particular oil, oleoresin, extract etc.. These sheets include information such as physical data (melting point, boiling point, flash point etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill/leak procedures. These are of particular use if a spill or other accident occurs. This MSDS is basically not meant for consumers, but for those people working professionally and intensively with the material e.g. practitioners.

As a producer of essential oils, you should provide MSDS sheets for each of your oils. Importers, processors or flavour and fragrance houses do have sheets of the oils they sell. But if it concerns a new/unusual type of oil, they expect such sheets from you as a supplier.

See examples at:

- <https://www.essentialoil.com/pages/sds>
- <http://www.essentialoilsdirect.co.uk/msds.html>
- <http://www.camdengrey.com/MSDS/>



A booklet 'Material safety data sheet of essential oils from Nepal' was published in 2014 by the Ministry of Forest and Soil Conservation, Department of Plant Resources. The booklet gives material safety data sheets of chamomile oil, citronella oil, French basil oil, jatamansi oil, juniper oil, lemongrass oil, menthe arvensis oil, palmarosa oil, wintergreen oil

and zanthoxylum oil. *More information can be found from <http://dpr.gov.np/home>*

3.4.3 Voluntary requirements

There are several voluntary requirements with Fair Wild, FSC, Fair Trade reducing BIO piracy and being well recognised, as well as the cosmos standard (BDIH) or Natrue for natural cosmetics.

Convention on biological diversity CBD - <https://www.cbd.int/>

There is a growing recognition that biological diversity is a global asset of tremendous value to present and future generations. At the same time, the threat to species and ecosystems has never been as great as it is today.

Species extinction caused by human activities continues at an alarming rate all over the world.

In response, the United Nations Environment Programme (UNEP) convened working groups of experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. The experts were to take into account “the need to share costs and benefits between developed and developing countries” as well as “ways and means to support innovation by local people”.

The Convention on Biological Diversity was inspired by the world community’s growing commitment to sustainable development. It represents a dramatic step forward in the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources.

Nepal’s strategy to preserve its biological diversity

In the tenth meeting of Conference of Parties’ (COP-10) of CBD held in Nagoya in Aichi Prefecture in Japan in 2010, the Parties came up with a new plan and targets to conserve biodiversity and enhance its benefits to the people. The Strategic Plan for Biodiversity 2011-2020, includes a set of 20 ambitious so-called ‘Aichi Targets’.

As a Party to the CBD, Nepal has an obligation to prepare and implement strategies and actions to meet the Aichi Targets. Similarly, under Goal 7 of the MDGs (i.e. Ensure Environmental Sustainability), Nepal had moved to integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources (NPC/UNDP, 2005).

In Nepal, systematic efforts to meet the Aichi Targets have begun with the development of the NBSAPs (National Biodiversity Strategies and Action Plans). The country has already made substantial progress in conservation and sustainable use of biodiversity through the formulation of enabling policies and strategies and the subsequent design and implementation of various programs, projects and activities that will contribute to meeting the Aichi Targets and relevant MDGs.

The efforts to meet the Aichi targets can be found in Annex 4 of the report ‘Nepal fifth National report to convention on biological diversity’ that can be downloaded at www.cbd.int/doc/world/np/np-nr-05-en.pdf

Cultivation/Wild collection protocol

The International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants, the so-called ISSC-MAP is designed to help those involved in the harvest, management, trade, manufacture, and sale of wild-collected medicinal and aromatic plant (MAP) resources to understand and comply with the conditions under which sustainable collection of these resources can take place.

The ISSC-MAP has 6 principles and 18 criteria, addressing ecological, social, and economic requirements for sustainable wild collection of MAPs. The proposed indicators are covered in Table 2 Annex 1 of the ICCS-MAP standard version 1.0 that can be downloaded from www.floraweb.de/map-pro/Standard_Version1_0.pdf

Other voluntary standards

Other social voluntary standards are Fair for Life, Rainforest Alliance, Ethical Trading Initiative or BSCI (Business Social Compliance Initiative) and several other standards with a plethora of related labels.

Apart from being overlapping, they create confusion and a growing scepticism among consumers.

The most important standard helping to improve the quality of MAPs and essential oils implementation is of the practice of Good Agricultural and Collection practices (GACPs) at the point of cultivation of medicinal and aromatic plants and good manufacturing practices (GMPs) during the process of manufacture and packaging of finished herbal products or oils, as well as post-marketing quality assurance surveillance. This standard is highly advised for the US market.

A guide of GACP can be downloaded at

www.herbal-ahp.org/06_1208_AHPA-AHP_GACP.pdf

Organic certification by Ecocert

An EU organic, USDA logo can be obtained via Ecocert in India. These logo's can be used in the EU market and the US market for essential oils sold to the flavour, fragrance, pharmaceutical (aromatherapy) and other industrial sectors.

Certification for MAPs and Essential oils can be obtained by Nepali companies individually or jointly as an OGG (Group of Organic Growers) by taking the following steps:



STEP 1	<p>Establish a group in Nepal of organic growers and appoint an inspector who controls each actor in the value chain - from farmers, collectors, producers, co-operatives, Nepali flavour & fragrance houses and exporters. The associations in Nepal could act as an OGG where a distinction/specification is required for MAPs and for Essential oils and application of each species of MAPs and application for each type of oil.</p>
STEP 2	<p>Decide more precisely who can be in the group. The appointed inspector should decide which farmers, producers, collectors etc.. are able to cultivate herbs according to the organic philosophy.</p> <ul style="list-style-type: none"> ■ Herbs should grow on 'clean ground' without pesticides and only natural pesticides must be used when growing them. ■ Herbs growing at high altitudes e.g. jatamansi, wintergreen, rhododendron are basically clean unless there are neighbouring farms that use pesticides in other crops. This risk is higher for herbs growing at lower altitudes - even if they are collected from the wild. Cultivation close to (polluted) rivers is also more risky. ■ Farmers who cultivate the herbs on land that were used before for other crops and where pesticides were used, should cultivate herbs for 2-3 years according to the organic principles. Afterwards, the harvested crops are clean and can be organically certified.
STEP 3	<p>Do a risk analysis. The appointed inspector should first do a risk analysis and identify all possible causes of contamination by pesticides or pesticide residues, pollution, dirt to harvested crops or oil (during transport, storage etc.). He could do this by himself or in collaboration with an Ecocert inspector from their India office in New Delhi.</p>
STEP 4	<p>Establish a control system in order to reduce the number of risks by:</p> <ul style="list-style-type: none"> ■ setting up a registration system for inspection/control ■ making a schedule when controlling each actor or group of actors ■ showing evidence that the value chain is transparent. ■ integrate own control system with the annual control system of Ecocert.
STEP 5	<p>Make a contact with Ecocert by filling out their application form where all details should be specified including the exact number of hectares, area covered under wild herbs, locations of wild collection sites, number and location of processing sites, number of MAPs and oils / extracts to be certified. Afterwards Ecocert India will send a quotation and procedure.</p>
STEP 6	<p>Annual control by Ecocert. Depending on the number of members in the group, Ecocert staff from India will visit Nepal once a year for inspection. The total number of members is divided by 12. If the group consists of 144 members, 12 companies will be selected for inspection. The costs for these inspectors are roughly estimated at around US \$ 400 per day.</p> <p>If inspectors can visit 2 companies per day, 6 days x 400 = 2,400 should be paid if things go smoothly and the distances between the members are not too large. Other costs might be involved and should be further checked with the Indian office after filling out their questionnaire.</p>
STEP 7	<p>Certification can be granted after 3 months after the commitment contract is signed. Afterwards each member can use the logo (EU organic and USDA organic) on their product package and on promotion material, provided that they mention the name of the OGG.</p>

Possibilities, procedures and tariffs for individual companies or grower groups should be further investigated with other agencies such as Ceres (China), Lacon (Germany) or One-Cert. Certification costs in China for organic labels (EU, USA and Chinese organic) are US\$ 3,000 per year plus US 182 for each herb or oil.

Note that the difference between organic and natural can sometimes be blurred. Natural products are not necessarily organic, but are always composed of plant-based materials which are lightly modified and produced with the maximum respect for the environment. Simple, natural products tend to be less expensive than organic cosmetics; therefore, they are more attractive to those consumers who might have trouble distinguishing the differences between organic and natural products.

3.5 Dealing with your Competitors and Positioning

Competitors

The major producers of essential oils are Brazil, India, USA, China, Egypt, Mexico, Guatemala, Morocco, Indonesia and Vietnam. All of them with the exception of USA are developing countries with low cost economies.

It is estimated that about 65% of world production of essential oils come from developing countries. Between 2010 and 2014, Indonesia, Sri Lanka and Vietnam have expanded their exports of essential oils to the USA, Europe, China and other international markets. Some oils are typical, for example patchouli oil from Indonesia, while other oils are low cost from developing countries known for their low labour costs.

Many of the major producing countries, e.g. USA, Brazil, Indonesia or Vietnam have large populations with a domestic market for essential oils. They have invested in scientific and technical training and have well developed export businesses. There are about twenty most utilised essential oils worldwide - see USA Chapter 2 -Table 5. The top 10 crops in terms of production account for about 80% of the total world market for essential oils.

Global essential oil market is dominated by 12 large flavour and fragrance houses (see Chapter 1 - Table 2) with the top industry players creating barriers for new participants. Producing oils of a constant quality production requires high capital investment with advanced equipment. Besides, companies are largely integrated into the value chain, have their loyal and reliable raw material suppliers have their logistics operations well organised.



Positioning

Many customers and end consumers cannot clearly distinguish oils from Nepal, from Indian, Sri Lankan or Indonesian oils. To create a clear image that sets MAPs/oils from Nepal apart from common oils from 'low cost countries' you could think of:

- **Making Nepali MAPs and essential oils more visible** by clear positioning that conveys the 'purity of Nepal oils coming from the roof of the world'. Rather than selling to mass key segments, the **premium market segments** can be recommended. Quantities are smaller and more manageable for a rather new sector that needs to be further developed in Nepal.
- **Collected from the wild.** Additionally the exclusiveness of a 100% pure oil clean gathered in the wild, or cultivated in an ultra-clean natural environment is unique to Nepal. For example, MAPs that are not regularly found in other countries such as timur, asparagus, wintergreen, jatamansi, picrorhiza or calamus.
- **Good quality, true skills and the new side of Nepal.** To differentiate from competitors, a clear image of Nepali MAPs and oils in terms of chemistry and improved quality control - see Annex 6. True skills in traditional steam distillation that is done for many years and should be preserved to avoid a loss of cultural heritage and to provide employment to people in local communities.
- **The oils have strong therapeutic properties and are multi-functional** having many different applications in fragrance, flavour and aromatherapy. Competitors will have difficulty to produce similar unique oils with the exception of mentha arvensis, chamomile, palmarosa, citronella and lemongrass.

3.6 Recommended strategy to reinforce the sector

The export market strategy should meet the key objectives in the Trade Policy to support economic development and poverty alleviation initiatives in Nepal. The Nepal Trade Integration Strategy (NTIS) aims to benefit from favourable market access opportunities and improve the trade capacity and trade performance of Nepal.

THE EXPECTED RESULTS AND OVERALL GOALS OF THE IN-MAPs PROJECT ARE:

- The value and volume of the exports of MAPs (Including essential oils) must be increased by 15%
- The income of MAPs farmers and manufacturers must increase by at least 15% each year.
- Increase in MAPs producers and exporters of which at least 33% are from disadvantaged groups.
- Increase of at least 10 types of products (new and adapted) for sale in the market.

Moving ahead to reinforce the MAPs sector in Nepal which could be achieved by:

1. Strengthening exports of essential oils
2. Improving collaboration
3. Developing customer relations
4. Meeting the standards
5. Developing marketing mix

1. Strengthening exports and production of Essential Oil

- **Focus on local processing and exports of essential oils** with more companies developing typical oils from Nepal with strong therapeutic properties and high quality. Essential oil business needs an investment (financial and know-how) but if done in the right way, it will be more rewarding than exports of crude MAPs. Instead of being a low cost supplier to India, further strengthening of essential oil production in Nepal should contribute to the further expansion of Nepal's role in the Beauty and Personal care, Fragrance and the future Natural health industry in the world.
- **Access to information.** Having access via co-operations, e.g., providing up-to-date price information will help each actor in the value chain. More transparency and better knowledge on international prices of oils/kg and the margin structure will provide more insight in the price structure and the effects of price fluctuations. Besides, it reinforces the role of farmers and collectors who now largely dependent on middleman or village traders who

MUCH PRODUCTION IS MOSTLY ON A CUSTOMERS'-REQUEST BASIS AND FARMERS ARE FORCED TO BORROW MONEY FROM INFORMAL SOURCES AT VERY HIGH INTEREST RATES IN ORDER TO MAKE INVESTMENTS TO MAKE A PROPER STORAGE PLACE, OR TO DEVELOP NEW VARIETIES.

use malpractices e.g. cheating in weighing e.g. to illiterate people, older people or children (source: Ansab, 2014).

Sources for up-to-date whole sales prices can be found at ITC Insider and Ultra International

■ **Upgrading technology and distillation units in**

Nepal with the establishment of two processing plants in Surkhet and Kanchanpur districts.

An accredited laboratory with quantitative and qualitative chemical analysis facilities will be established to set standardised methodologies in harvesting, pre-testing and processing of MAPs.

2. Improving collaboration

■ **An improved sense of collaboration in the value chain.** Even if there are many actors in the value chain, a better sense of collaboration between actors, and a better relationship with the final customers would strengthen the chain. Now, farmers, collectors and traders see themselves just as a part of a chain. People are primarily interested in the high demand of an herb/plant and the price they can get for it, regardless the quality. Malpractices of buyers/traders affect motivation among farmers to enlarge their MAPs business or to add value by offering good quality herbs/plants, clean handling or storage.

■ **An encouraging and stimulating 'mentor' on the spot.** Time and effort should be put into market development, and capable and stimulating person on the spot with a budget that is required to fulfil this function. Now much production is mostly on a customers'-request basis and farmers are forced to borrow money from informal sources at very high interest rates in order to make investments to make a proper storage place, or to develop new varieties. This mentor could make market information available to them in their own language as a start to develop their own market in

a considered way with a long-term view. A pilot could be done in one of the INMAPs districts.

■ **Encourage investment by foreign companies** (processors, distillers). The foreign distiller is sure about a source of supply for a low price - dealing direct with farmers, co-operatives or via Nepali processors/exporters. Such collaboration gives farmers and processors more security about the (annual) quantity required. They also can gain know-how on production, planning, organisation, proper storage, market needs, segments and insights how their oils are used.



CASE: USA COMPANY WORKS WITH FARMERS AND COLLECTORS IN CLOSE COLLABORATION WITH LOCAL PARTNER:

- dōTERRA in the USA is sourcing directly from developing countries to cut down the role of middlemen and have oils of good quality with their involvement. They want to pay fair wages to farmers, increase the transparency in the oils they sell and to communicate social involvement in their promotion strategy. In Madagascar this model is used for the production of Ylang Ylang oil, popular in aromatherapy for its mood lifting properties, in skin care products and in perfumes

In Madagascar, the company works with a local partner who has regular contacts with the growers and collectors, ensuring the empowering effects of partnership according to their Co-Impact Sourcing strategy. For the growers and distillers there is security of a guaranteed buyer (dōTERRA) for high quality Ylang Ylang oil. Before, they usually sold their oil to the highest bidder, which was coupled with fluctuations.

This was particularly hard for individual farmers.

Another advantage is that farmers could challenge to get an incentive (annual bonus) if they can demonstrate a continuous improvement in the quality of their flowers or oils. Farmers can also invest in expanding their production capacity by putting money in new distillation units and getting more growers into cooperatives so they can be better organized to reach higher production volumes.

TO MAKE A DISTINCTION IN QUALITY, YLANG YLANG OIL IS DIVIDED OUT INTO SEVERAL DIFFERENT PROFILES:

- Ylang Ylang I, II, III, extra, and complete.

This means that different weighted molecules come off during differing times in the

distillation process: top notes first, and bottom notes last. For dōTERRA, Ylang Ylang and the Ylang Ylang complete profile is used. They need the complete profile so that there is no separation of aromatic molecules, ensuring that they have the complete array of compounds produced by the delicate flowers for its full therapeutic benefit.

Perfumers, on the other hand, prefer separation for specific fragrance profiles. In perfumery making, ylang ylang has a very refined process of distillation. As the perfume industry needs very specific scents, a special method was developed unique to this oil.

The collection and production process of Ylang Ylang is labour intensive: Harvest time peaks from December to March. Before a tree can be harvested, it needs to grow for three to four years.

ONCE THAT AGE IS REACHED, THE PROCESS CAN BEGIN:

- Once the flowers become yellow with a red center, they can be picked. The trees must be harvested several times within a period of 5-6 weeks.
- Collectors pick the flowers and bring back their filled baskets to be weighed. A pile is created on a platform with their names next to their pile for record keeping and payment.
- The flowers go to a nearby distillery where they must be distilled within 24 hours.
- Like all flowers, ylang ylang must be distilled in a hydrodistillation process, meaning they are placed in water and boiled to create steam that contains the oil. This process takes 24 hours to complete, with workers keeping up hand-fed fires to fuel the distillation process.
- Ylang Ylang complete essential oil is then ready to be sent to dōTERRA.

Ideally, the company commits themselves to contribute to a community project. They provide start-up capital, technical assistance and basic distillery equipment and do the analytical testing. They could do this without a binding contract. However, this must be negotiated and clarified beforehand.

It is very important that the investor is a specialist and not a generic speculator. In addition, the collaboration with this foreign investor should be reviewed periodically to ensure fair benefits on both sides. A key question here is whether farmers/processors want to stay linked up to the foreign investor, as they probably cannot sell the oils to other customers.

Tax breaks to attract investment in this area could help to create more jobs within Nepal and in the long run increase overall government revenues from the increased employment (source: Ansab 2014) contributing to one of the IN-MAPs objectives, i.e. increased income by at least 5% of MAPs farmers in Nepal.

3. Developing customer relations

- **Develop a wider customer base** stimulating flexibility, know-how about potential applications, e.g., in food, fragrance or specific industrial applications each having its specific requirement. For example, constant quality control for oils used for aromatherapy is ensuring their therapeutic effect. To be sure, no residues of other oils are left in drums if oils are used for perfumery, etc.. Regular interaction with different customers will clarify what they need enlarging the experience. Relying only on few customers reduces product innovation, quality and differentiation from competitors.
- **Good communication and frequent contact with customers** who want small orders on a regular basis. Consumer behaviour is more fickle, especially in the USA, and stock levels should be kept minimal. Especially when dealing directly with industries, a good planning, flexibility and short lead-times and fast response times to customers are now required in the USA and Europe.

4. Meeting the standards

- **Challenging to meet market requirements and standards** in discussion with customers or trustworthy experts. The European markets are strict and hard to comply with - even for many European SMEs. But they can serve as a guideline to develop environmentally and commercially sound MAPs/oils, maintaining a constant quality. The proposed 'Cultivation Manuals/Handbooks' for selected species (timur, asparagus, menthe) proposed by Jadibuti will certainly contribute to Good Agriculture and Collection Practices.
- **Support from stakeholders (government, banks).** An enhancement of the sector in maintaining its traditional heritage in processing with further support from the Nepali government. For example, in the role of the Public Private Partnership (PPP) for more sustainability in the Nepali MAPs sector and alleviate poverty. In this respect, the partnerships between Nateva and HTBL, Vossen and Male have been successful. Through assistance to enhance traditional farming/processing practices and providing the right training, this encourages companies to jointly work towards more awareness of Nepali MAPs and oils and convey a positive image of typical products from Nepal. See also www.developpp.de having 1,500 projects worldwide.

5. Developing marketing strategy

See next section 3.7



3.7 Developing Marketing Strategy

The next sections will give suggestions on using and improving marketing mix instruments in order to export MAPs and essential oils successfully in the USA, France, Germany, China and India.

- PRODUCT STRATEGY
- PRICE STRATEGY
- DISTRIBUTION STRATEGY
- PROMOTION STRATEGY

Related to marketing strategy, there are several useful manuals and toolkits from Ansab available for companies and cooperative to develop organisational and marketing skills in a structured way. They can be used to improve business planning, entrepreneurship in small communities, develop MIS (Marketing Information Systems) etc.. Important tool-kits can be downloaded free of charge from:

www.ansab.org/publication/business-planning-for-community-based-natural-product-enterprises/

www.ansab.org/publication/marketing-information-system-for-natural-products/

www.ansab.org/publication/participatory-inventory-of-non-timber-forest-products/

www.ansab.org/publication/development-and-mobilization-of-local-resource-persons/

www.ansab.org/publication/entrepreneurship-development-of-natural-resources-dependent-communities/

3.7.1 Product strategy

The first question is whether new products should be developed for existing/new markets or existing products to be introduced in new markets.

New product development

New products could definitely be introduced in India and in China. Especially in India, people are familiar with Ayurvedic medicines, spices and commodities (soapnuts, butternut). If trade of yarshagumba is done in a controlled way, this could continue to be a novelty in the Chinese market. Other MAPs such

as *fritillariae thunbergii* or other phlegm dissolvers could be developed for the Chinese market.

In the mature Western markets such as the USA, Germany and France, different developing countries already sell their MAPs or oils. Particularly, India and China (*jatamansi*, *timur*), sell very similar products to the ones from Nepal.

Introducing new products might be a chance to stay away from tough competition or price cutting. In this respect, Nepal could be a good pioneer by introducing new varieties of medicinal plants, roots or herbs that are unknown in Western markets. Especially as there are so many species in Nepal. However, there are some important considerations:

- **It takes time and much effort in R&D and marketing** to convince first customers (processors, importers etc.) and afterwards to convince consumers about the properties, therapeutic benefits etc. and the related incompatibilities with prior experience with their usual products.
- **The risk of failure** which could be due to difficulty accessing the right distribution channels, wrong target groups, legislation, quality failure, pricing, weak promotion etc.. In Western markets, the failure rate of new products is about 80% (all products), compared to 45% in the 1960s.
- **Intellectual Property Rights**, patents, copy rights with new product that should be registered quickly before other companies register alike products as being 'invention' or 'origin'.
- **Constant innovation**. In the BPC, perfume and household products segments, large flavour and fragrance houses constantly need to innovate to stay competitive. For example, in skin care, new products have even more powerful/moisturizing/multi-functional properties that are based on the latest breakthrough technologies. For natural ingredients, it is hard to keep up with this tempo of innovations. Nowadays, BPC products have much shorter lifecycles, i.e., 2-3 years compared to 10 years in the 1980/1990s.
- **Test marketing through a limited number of processors/distillers** via a number of selected retailers should be undertaken before a wider launch is made. Afterwards, some refinements in the product can be made.

Existing products in new markets

Since some of the selected MAPs and essential oils from Nepal are still unknown in most Western markets, it would be a safer option to penetrate with existing products. Besides, there are several difficulties to overcome in the cultivation of MAPs and in the exports of oils being still new in Nepal.

Factors like availability of the essential oil, the right price, history of use in the country of origin (story telling) and quality (purity, no adulteration!) are of major importance to buyers in Western markets. Adherence to other policies or trade criteria such as organic certified, Fair Trade and FairWild is an added value to existing products that will strengthen the position for you as a Nepali exporter.

The importance of origin. Natural ingredients are commonly sold on the basis of their origin, i.e. where they grow in the wild or where they have been cultivated for many generations and where they have been used by local people in cooking and to stay healthy.

This origin should be adhered to when developing typical MAPs and essential oils from Nepal. It also is a way to stay exclusive and to differentiate from other countries that cultivate plants, herbs for exports e.g. the large-scale citrus fruit farms in Argentina, Brazil or large-scale mentha farms in India and China.

Differentiation by typical maps/Oils from nepal

The product/market combinations at the end of the country Chapters under “Options for Entry” should assist Nepali companies and all actors in the value chain to develop MAPs or oils for these markets that are typically from Nepal. It is recommended to focus on products that are unique to Nepal such as jatamansi, anthopogon, timur, wintergreen, rhododendron, calamus or picrorhiza. Commodities such as chiuri and soapnuts are less typical to Nepal but have many different applications and are already exported in large volumes to India.

A differentiation can be made from other developing countries, notably India, China, Sri Lanka, Pakistan being known for their low labour costs. While Nepal should position itself in the higher and exclusive end of the market (premium segment) as a springboard for further expansion to other markets and other products.

Flavour

This is the largest key segment where sales are expected to reach US\$ 93,156 million by 2019 which is dominated by the USA (64% share). It is fast growing, especially in China.

- **In the premium flavour segment, timur and curcuma** can be used in exotic dishes that have unusual/new exiting tastes and are good for health (digestion, immune system, performing well etc.).
- **Ginger and cinnamon** can be used in the drink industry where manufacturers like for healthy fresh drinks that provide a good taste as a compensation for reduced use of sugar.
- **Timur, curcuma, ginger, cinnamon** could be used in new natural herbal teas in mixture blends or with hot milk cappuccino-alike drinks (“Tea -Latte”).
- **Wintergreen** has many different uses such as in sugar confectionery (candies, chewing gums), bakery products, frozen diary, soft drinks and alcoholic drinks.

In flavour, there are many other possible uses of oils in order to enhance the taste of organic dishes or vegetarian dishes which definitely will gain more ground in France and Germany.

Figure 11 shows the potential use of five oils from Nepal that are based on country sections the overview of uses of the selected oils that is given in Annex 3 and the sections at the end in the country Chapters.

THERE ARE MANY OTHER POSSIBLE USES OF OILS OF NEPAL IN ORDER TO ENHANCE THE TASTE OF ORGANIC DISHES OR VEGETARIAN DISHES WHICH DEFINITELY WILL GAIN MORE GROUND IN FRANCE AND GERMANY.

FIGURE 11: SUGGESTED OILS FROM NEPAL IN THE 5 SELECTED MARKETS

KEY SEGMENTS / PREMIUM	SALES	MAIN MARKETS	MAIN OPPORTUNITIES	5 BEST POTENTIAL OILS FROM NEPAL
FLAVOUR 1 Natural healthy (anti-obesity) 2 Organic food	93,156	USA 64% Germany 16% France 12% China 6% India 2%	• Exotic dishes • Healthy confectionaries • New cold drinks • Herbal teas • Beauty from within • Organic food	Timur Curcuma Ginger Cinnamon Wintergreen
FRAGRANCES 1 Fragrances (parfums) 2 Skin care 3 Colour cosmetics 4 Hair care 5 Baby & child 6 Bath & shower 7 Deodorants 8 Sun care 9 Sets & kits 10 Air care	46,555	USA 50% China 30% France 11% Germany 7% India 2%	• Anti-aging • Moisturizers • Serums • Perfumers (flowers, woody, spicy) • Hair repair (oil), hair loss • Air care refill kits	Rhododendron Ginger Jatamansi Butternut Palmarosa
MEDICINE (herbal/traditional) 1 Dietary supplements (immune system) 2 Cough, cold, allergies 3 Topical analgesics 4 Baby & child 5 Calming & sleeping 6 Digestive remedies 7 Dermatologicals	21,884	China 61% USA 23% Germany 7% India 6% France 3%	• Dietary supplements • Aromatherapy • Natural sleeping aids (without alcohol) • More recognition via practitioners • Continuation traditional medicins (China, India)	Timur Wintergreen Calamus Rhododendron Cardamon* Yarshagumba* Valerian* Chamomille*

* for China

source: Euromonitor, Searce (2016)

Fragrance

The second largest key segment with expected sales of US\$ 46,555 million in 2019 where the USA and China will be the main markets. The premium BPC segment is less dominated by synthetic aroma chemicals. In the premium BPC segment:

- **Rhododendron** is used in skin care, shampoos, bath gels/soap because of its fresh, sweet floral aroma. Besides, the flower evokes sympathy in the world of New age and yoga as the sacred flower to Buddhist monks and Tibetans. Rhododendron will be also in demand for women's perfume as a typical floral note. It can be used in air fresheners in China or India.
- **Ginger** is used in men's aftershave creams/lotions, men's perfumes and in skin and hair products for both women and men. Ginger has multi-functional properties.
- **Jatamansi has anti-aging properties**, is a natural deodorant and can be used in hair care notably in hair loss and hair colour restoration which is becoming an issue among the ageing populations in the USA and in Europe. Jatamansi can be used in multi-functional products.
- **Jatamansi and ginger** can be also used in men's perfumes including in the popular Oud and woody based types among affluent men. This also applies for timur and cinnamon.
- **Butternut** can be used in skin care as a moisturizer, but also in shampoos and shower gels as an alternative to Shea butter from Africa which now has been discovered after many years. Butternut can be used in multi-functional products.
- **Palmarosa** used in perfumes with its sweet, rose like scents. Other uses include soaps, lotions, facial steams and hair treatments.



The second largest key segment with expected sales of **US\$ 46,555 million** in 2019 where the USA and China will be the main markets.

Fragrances in skin care products follow the lead of perfumes and colognes, with comfort scents, aromatherapy fragrances (e.g., lavender, jasmine, peppermint, etc.) and marine-related scents expected to increase further. However, in fragrances the product life-cycles are short. **Fragrance houses develop specific scents based on several criteria:**

- Their customer's special scent/odour in their product making them unique.
- Trends in fashion, food, colours, home interiors, entertainment and even in electronics.
- A positive result by the industries' consumer panel, who regularly test their products.
- If the fragrance is safe and complies with the increasing regulatory requirements related to the raw material used.

Medicine

This key segment is most important in China, which is expected to account for 61% of this market valued at US\$ 21,884 million in 2019 where the USA and China will be the main markets. The growing aromatherapy market will generate opportunities for unknown oils from Nepal with many different therapeutic properties. A variety of uses can be found in Annex 3.

Unusual/new types will be timur, calamus and rhododendron. Valerian is likely to be more in demand for natural sleeping aids.

Differentiation by typical MAPs/oils from a specific area in Nepal

Differentiation can be achieved through linking the essential oil with Nepal or a specific geographical area in Nepal. A combination of these MAPs that provide an activity and income to local communities would be ideal. Suitable cultivation areas at altitudes where most people live, i.e., up to 2500 metres should be sought, with relatively easy access and transport to trading centres in Nepalgunj or Kathmandu.

Other MAPs on higher altitudes have good export potential. They can be sustainably managed in the wild (e.g. rhododendron, timur). Some also have potential to be cultivated.

	Selected MAPs	Local name/ English name	Distribution	Altitude (m)	Traded part
1.	Nardostachys grandiflora (essential oil)	Jatamansi / Bhutle	WCE	3600 - 5000	Rhizome
2.	Gaultheria fragrantissima	Machhino/ Wintergreen		3600 - 5000	Leaves
3.	Ophiocordyceps sinensis	Jiwan buti/ Yarsa gumba	W	4200 - 5000	Whole part
4.	Neopicrorhiza scrophulariiflora	Kutki/ (Picrorhiza)	WCE	3800-4600	Rhizome
5.	Rhododendron Sunpati Anthopogon	/Rhododendron		3000 - 5000	Flower
6.	Valeriana jatamansii	Samayao/ Sugandhawal	WCE	1500 - 3000	Rhizome
7.	Zanthoxylum armatum	Timur	WCE	1000-2500	Fruit
8.	Cinnamomum glaucescens	Sugahdakokila	WC	1000 - 2500	Fruit
9.	Cinnamomum tamala	Dalchini / Tejpat	WC	450 - 2000	Leaf, bark
10.	Sapindus mukorossi	Rittha/Soapnut	WCE	600 - 2400	Fruit, seed
11.	Mentha arvensis	Pudinaa/Mentha		500 - 2500	Leaf
12.	Matricaria chamomile	Babunah/Chamomile		500 - 2500	Flower
13.	Zingiber officinale Roscoe	Shuth, Sonth/Ginger		450 - 2000	Root
14.	Diploknema butyracea	Chiuri/Butternut	WC	300 - 1500	Seed
15.	Asparagus racemosus	Satawari/ Kurilo	WC	150 - 2100	Root, tuber

source: NEHHPA (2015)

A priority list of MAPs based on demand, price, added value, cultivation and other parameters was made in a study conducted by the NEHHPA (Dipesh Pyakurel) with Timur, Valerian, Cinnamon, Jatamansi, Calamus, Asparagus and Chiretta scoring the highest on different parameters.

A Jadibuti study in the areas under IN-MAPs Project districts in Western Nepal in Pyuthan, Dang, Banke, Surket, Kailali and Kanchanpur was carried out in 2014. This study identified Timur, Asparagus and Mentha as species most suitable for further commercialisation. Trade promotion is based on possibilities for further cultivation and their market potential. Conversely, Timur and Asparagus are oils that are typical to Nepal and less affected by competition from India or China, as is the case with Mentha.

Geographical Indication for products from particular regions is a good opportunity to differentiate from competing countries. Further research about the

feasibility for selected MAPs and regions will be required. The principles and requirement can be found via the World Intellectual Property Organisation (WIPO) and the FAO from

http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Tea/Documents/Wipo_FAO-IGGtea-GI-AO-mg-10-05-13.pdf

Which essential oils to develop?

Develop a few essential oils in order to reap the benefits of specialisation. These must be carefully selected most preferably from existing oils. The advantage of this is that it will present less problems for market access and technical difficulties that come with new production. The higher the cost of a plant, herb or oil, the greater the risk of unsustainable harvesting practices, like with yarshagumba or satuwa. Regarding volumes, you first could produce the minimum volumes to interest buyers in the short-term.

Differentiation by niches

Another differentiation from the large 12 large flavour and fragrance houses supplying MAPs and oils from all over the world to top industry players can be made by focussing on niche markets. Specific oils or MAPs from Nepal can be used in the following niches:

- The veterinary market with more use of essential oils for the well-being of cattle (thyme or rosemary oil)
- Oils as preservatives in cosmetics or flavour in food.
- Oils for simple scent diffusers (sponges - see photo)
- Oils or concentrates used as natural pesticides as the law for chemical pesticides will change from 2017 (law against use of 'Roundup'). Thyme oil is currently used in natural pesticides.
- Rudraksha for monasteries and Buddhism practitioners.



3.7.2 Price strategy

Developments in future prices

Buyers from flavour and fragrance houses are likely to buy oils from certain growers or companies because they want a consistent tasting, flavour or fragrance. As most houses create their outspoken product for their industrial customer, a consistency in quality is more important than slight changes in price. Although prices can drastically change or vary according to cultivation, climate conditions, speculations by traders or other circumstances.

The scarcity and price highly depend on the kind of oil and its availability. Figure 12 shows that oils or products from flowers in BPC products and perfumery will command high prices in the future as they become increasingly rare. This has its consequences for their price level.

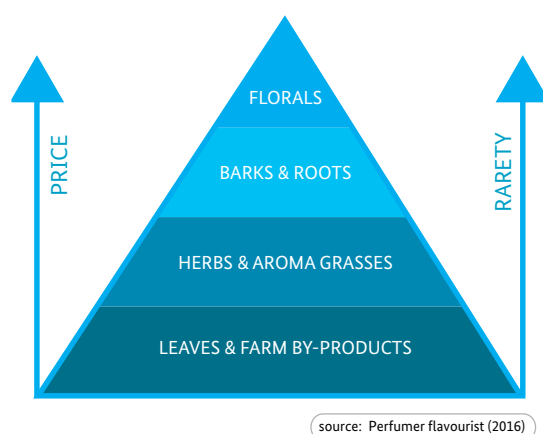
Florals: The florals, such as rose or jasmine, will become more expensive to grow and process as they require very large amounts of water, labour, fertilizer and other inputs. Besides, land, water and labour used, florals can also grow food crops in an increasingly overpopulated world. This will have an impact on the future prices of flower oils.

Barks and roots: The bark and roots of trees are the next rare group of natural ingredients as many of them come from ever endangered, slow growing hardwood trees. Only with cost effective agro forestry solutions there will be much chance that this category survives, unless it is for BPC products for exclusive use in the higher end of the market.

Herbs and aroma grasses: Cultivation of herbs and grasses has better prospects. Herbs are usually annual crops used for flavour, medicines and increasingly fragrance. They receive much higher R&D investment and have a more stable multi-sector market.

Furthermore, the cultivation, harvesting and processing methods are similar to those used in vegetable and oil seed production. In addition, the aromatic waste materials can be used for other agro-industries.

FIGURE 12: RELATION BETWEEN PRICE AND RARETY IN FRAGRANCE NATURALS PYRAMID



Aromatic leaves and twigs: All the aromatic leaves and twigs of trees, like eucalyptus, clove, orange and cinnamon, fall into this category, as do the expressed peels of almost all citrus. Here, there are still plenty of business opportunities to use waste, e.g., from peels of citrus or tropical fruits such as unknown citrus fruits, mangoes, passion fruit etc..

Finding prices for maps and essential oils

To establish your prices, buyers always closely follow the level of world market prices and follow the latest information on crop forecasts. The market prices serve as a reference, but still there is room for negotiation, depending on the quality and uniqueness of the plant/oil or spice in question.

A detailed overview of common wholesale prices of the most common essential oil from different supplying countries can be found in the USA Chapter 2 - Table 9. The FOB prices/kg in US\$ for some of the selected oils are given in Table 12.

Sources for Up-to-date whole sales prices can be found at ITC Insider and Ultra International

Prices for other MAPs and essential oils from Nepal you can find via the monthly-published overviews in Nepal Rupees per kg in Kathmandu, Nepalgunj, Delhi and other trading centres in India. The price overviews can be downloaded from ANSAB at www.ansab.org/market-information/price-lists/

TABLE 12: COMMON PRICES OF THE SELECTED ESSENTIAL OILS

Essential oil	Market Prices per kilo in US\$ (importer/trader level)	
MINT		
Spearmint	India	19 - 20
Peppermint	India	26 - 28
Cornmint	India	12 - 13
SPICES		
Nutmeg	Indonesia	55 - 75
Clove	Indonesia	15 - 18
Cassia	China	36 - 38
Cummin (seed)	Egypt	100
FLORAL and GRASS		
Citronella	China	17 - 18
	Indonesia	16
Lemongrass	India	17
Chamomille	Egypt	1,300
	Nepal (organic)	600
Jasmine	Egypt (concrete)	3,900
Geranium	China	180
	Egypt	85 - 90
OTHER		
Ginger	China	75
Garlic	China	130

Source: Ultra International (2016)

For organically oils, prices can be 2-3 times higher than conventional oils, largely attributed to the superior quality and their scarcity where often demand often outweighs supply.

Prices for spices can be found via the Spices Board India which publishes indicative international prices. Other useful sources include Commodity Online (for cardamom, curcuma) and Spice Market News. A paid source is the Public Ledger, where a joint subscription could be considered among several Nepali companies (exporters, associations, cooperatives etc.).



Prices for spices can be found via the Spices Board India which publishes indicative international prices.

Information on the different grades for spices that give a reference can be found at the Aggropedia website.

Price Setting

When setting your price, consider the following issues that influence its level:

- The trade channels with typical mark-ups of each channel and retail category.
For example, if you sell via the Fair trade channel the bargaining power of a buyer will be less aggressive than when selling to a large flavour or fragrance house.
- Prices of other oils on the world market or comparing the average value/tonne from different supplying countries of an oil that can be found via ITC statistics.
- The production costs, incoterms, import duties, VAT level and other costs.
- The most 'reasonable' or 'tactical' price level according to some of your local contacts in the field (agents, other exporters from Nepal).

Trends and recommendations in prices setting

- **Fluctuations in volume oils.** In the large volume oil such as citrus oils and mint oils, the acute competition between, e.g., companies from India and China has resulted in the price of these oils depreciating in real terms over the years. The main beneficiaries of this situation have been the consuming industry. Prices of menthe arvensis oils (or corn mint oil) depend on demand and supply meaning that prices can largely fluctuate e.g. from US\$ 11.50 to 8.77 in 2014 per kg.
- **More variety in prices.** With the rising number of mixed essential oils, cheaper adulterated oils, synthetic oils and essential oil products, there is no doubt that there will be more variance across the prices of each essential oil.
- **Synthetic substitutes.** For the lower end of the market, prices are lower because of the quality of the oils and because of the fact that there are synthetic substitutes available such as for menthol. Generally, major users hold stocks which enable them to buy when the prices are lower.
- To compete with synthetic alternatives, the higher prices of e.g. natural mint oils need to be justified by value added packaging, branding strategies and product differentiation strategies. Or, you could

also compete by providing excellent quality of the oils with a long shelf life.

- **Consistent quality as a cost saver for the buyer.**
Through consistency from batch to batch, industrial processes can be smoother and the number of test runs can be reduced by flavour & fragrance houses or industrial segment.
- **Payment after delivery.** Worries about the quality incite buyers to pay after delivery when they have checked the product and are satisfied.

Margins

While it is difficult to quantify the costs from farmers to wholesale level it is estimated that harvesting costs make up between 10 to 35% of farm gate costs, with an average of 22%. Pest, weed and disease management costs are about 22%. In case of cultivated MAPs nutrition, which includes irrigation and fertilisers, are about 10% of farmers' costs.

At processor level there is much variability as it depends on the extent of refinement and processing of the oil. The exporter who purchases, stocks the oil and sells the oils after testing, takes up a large part of



the price with a commission around 30% if he sells to buyers in Western markets. Margins are much lower when selling to Indian or Chinese buyers.

Importers, processors or flavour and fragrance houses purchase and stock the oil asking 25-30% for established MAPs or oils, and 20%-25% for limited supply oils. Note that in example an approximate price is set and the average margins given still can vary according to the compositions/ activities of each actor in the chain.

Import duties

As for exporting to Western countries, Nepal MAPs and essential oils fall under the GSP system, the import duty is reduced to zero provided that a form-A can be submitted listing up the exported products with their related HS codes.

There is no comprehensive and exhaustive listing of harmonized tariff codes for MAPs. In this report, the selected MAPs fall as a medical substance, while other botanicals could be classified by some

TABLE 13: PRICE STRUCTURE FOR A LIMITED SUPPLY OIL, FOR EXAMPLE WINTERGREEN

Actor in the value chain	Selling price/kg in NRs	Margin	How the selling price is composed/remarks
Farmer/Collector	312		Price of 250 kg of raw wintergreen A farmer/collector earns 1 - 1.5 NRs per kg No breakdown is known between farmer/collector
Price to local processor	700	11%	Value of Wintergreen (312) Fee to Community Forest User Group (62) Oil processing cost (250) Processors' margin (76 i.e. 11% of 700)
District Trader	825	13%	Value of the wintergreen oil (700) Handling and packaging (10) Transport to Kathmandu (10) Traders' margin (105 i.e. 13% of 825)
Exporter NRs (in case he sells it to Western markets)	1,700	30%	Value of the wintergreen oil (825) Storage, re-packing and quality testing (60) Export permits and certifications (300) Exporters' margin (515 i.e. 30% of 1,700)
Exporter FOB US \$*	15.75		In case of organic wintergreen the exporters' selling price will be 2- 3 times higher
Transport, insurance, banking	1.5		Import duty to Western countries is 0 (GSP)
CIF price to Importer, processor, F&F house or direct to industrial key segments	17.25		
Importer, processor, F&F house	21.05	20-25%	Storage, labo testing, additional blending, marketing (selling, branding, promotion). F&F houses developing own products using wintergreen as ingredient. This also applies when industry segments buy direct from the exporter
Agent	19.00	8-15%	Selling, branding and promotion

* Exchange rate 1 Nepal Rupee = US\$ 0,00925

Source: USAid, Seance estimates (2016)

exporters exporters as a dried root or tuber, or by others as a spice .

For essential oils the HS codes fall can be found in Annex 1, but there are different codes used in the USA, China,

RECOMMENDATIONS FOR PRICE NEGOTIATIONS

DO'S

- Always consider what the market value (competitors prices) of your product is to decide prices. Good references are ANSAB price list, ITC Insider and Ultra International or the Spices Board India
- Bear in mind that your negotiation position will be stronger if there are shortages, therefore regularly check the latest crop forecasts from the sources mentioned earlier in this chapter.
- Consider carefully the mark-up levels of middlemen before making offers to a potential buyer.
- Be ready to inform buyers (importers, wholesalers, retailers etc.) about your prices when meeting them.
- Make a pricelist and product sheets giving buyers the impression that you thought already well about your pricing. Otherwise, they immediately will try to bargain.
- Be ready to re-calculate prices during meetings, according to changes they require (in e.g. raw materials, quantities). If it is too complicated, don't promise anything, but tell them you will look into it and inform them afterwards by e-mail. Here, you can explain step-by-step with a good argumentation why you cannot reduce your price.
- Make a quotation/estimate to processor or importers as they buy in larger quantities. Here, you should cover the appropriate Incoterms. The estimate is your binding offer also to the Chinese and Indians some of whom always will try to bargain afterwards. Issue the invoice based on the approved estimate.

- Availability and scarcity are always a threat for you when harvests are disappointing. The degree to which prices are affected depends on highly on the length of the growing period. If your growing period is long, realize that you have more risks than selling products that can quickly be recultivated.
- Justify higher prices with higher product performances and advantages. It is logical that higher customer service or special care in processing should be compensated with higher prices.

TO OFFER A COMPETITIVE PRICE:

- Consider whether there are benefits in collaborating with colleagues to share the cost (raw material).
- Consider other sales channels that are less price sensitive.
- Review your payment terms and your relationship with your bank.
If the buyer is very price sensitive, consider if he is the right buyer for your target market.

DON'TS

- Do not use discounts too quickly It does not mean you automatically sell more, or more profitably and it may reduce your credibility with buyers. Remember that price is also an indicator of quality.
- Do not sell at any cost This may affect your profitably negatively on the short, mid and long-run. Buyers never pay more for a product later on, once they have paid a low price in the beginning.

India and different coding definition in Europe. Many countries are struggling with the lack of specificity of their tariff schedules, although India is the most advanced regarding codes for the oils from Nepal.

3.7.3 Distribution strategy

Trade Structure

The trade structure of MAPs and Essential oils involves many different actors. The structure of essential oils differs from food commodities because of the prominent role of the flavour & fragrance houses developing specific product formulations (natural and synthetic) for the industrial segments.

Farmers. The traditional structure begins with the farmers who sell MAPs either to local collectors, (village)

traders or cooperative processors. They sell to a local processing house or to an exporter or which in Nepal are mostly located in the Kathmandu area. Larger-scale producers also sell to these houses and to brokers who are in contact with exporters.

There are a large number of farmers with different motivations to sell MAPs or oils in different areas under harsh circumstances (climate, earthquake, fuel crisis). It is a challenge for many of them to be organised into a continuous and a steady supply chain that provides a regular supply of raw materials, quality and sustainability during the year. Therefore, traders or brokers have taken up this role, acting as a facilitator and seller, asking a commission around 13%.

The local houses in Nepal do the primary processing

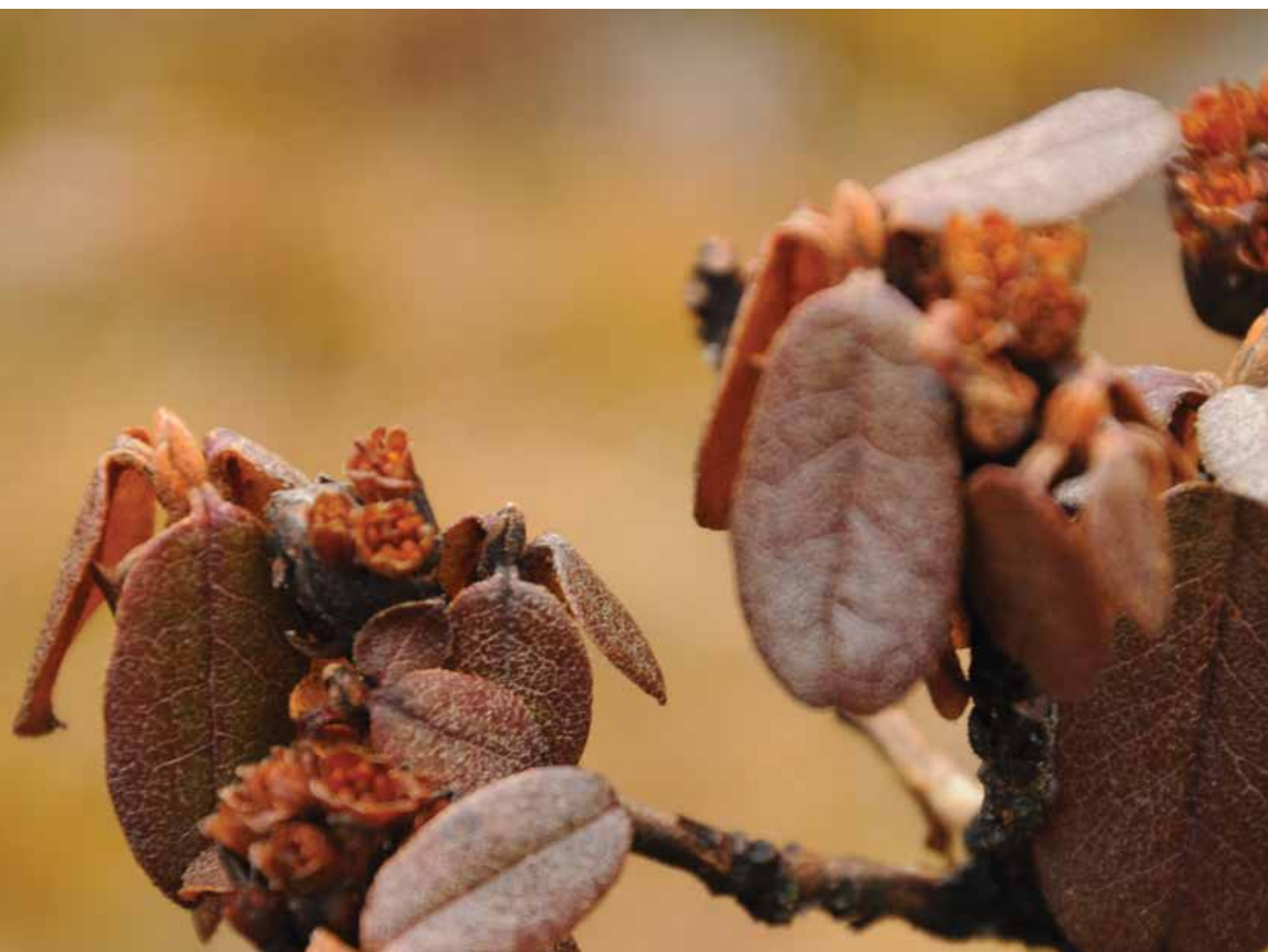
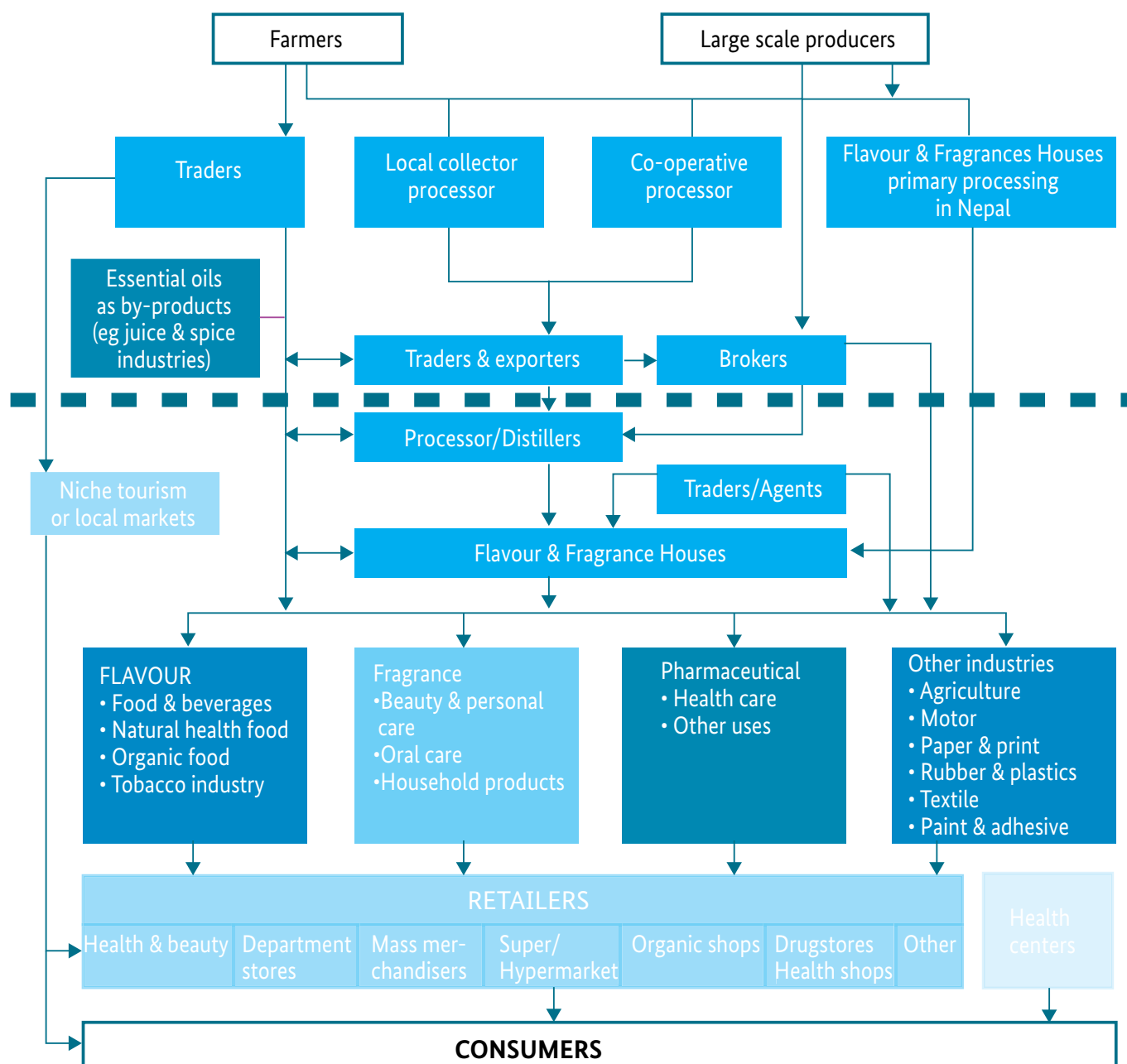


FIGURE 13: DISTRIBUTION CHANNEL FOR MAPs AND ESSENTIAL OILS



of MAPs or the distillation of essential oil and sell them on the domestic market, to foreign importers/processors, or direct to foreign flavour and fragrance houses.

Traders, brokers and agents use their marketing and trading knowledge to buy directly from producers and collectors and sell either to the foreign flavour houses who sell to industrial segments (flavour, fragrance, pharmaceutical and other industries).

A broker or agent has several clients for whom they sell on an exclusive or non-exclusive basis. A client may have one or more brokers or agents acting on their behalf selling to different regions or industries. The function of a broker or agent is to find buyers for their client's products. They usually work on a commission basis (8 - 15% of the sales) depending on volumes, geographical territory involved or

TREND TO SIMPLIFY THE VALUE CHAIN

The traditional trade structure has worked for many years, but the industry is trying to simplify the supply chain. As local producers became larger, the industrial segments and importing flavour and fragrance houses now tend to deal directly with them to reduce the cost of middlemen. Quality and consistent supply issues can be discussed directly with the producers, cooperatives or with local processors or flavour & fragrance houses in Nepal. For the producers it is now more certain that there is going to be a buyer for whatever they produce.

exclusivity. Generally, they do not keep the MAPs or oils in stock.

Importers/processors/distillers source the basic (pure) oils also from all over the world. They sell to flavour and fragrance house, direct to the industrial segments, retailers as well direct to consumers via their websites. Larger processors have their own R&D (research and development) units in-house. This has been a key role for them and for the flavour and fragrance houses. They can be competitive by

developing new flavour mixes in accordance with changing tastes and preferences of their specific (consumer) target group.

Importers are more consumer oriented and sell branded products from well known international cosmetic or food brands (or fashion brands) or sell under their own brand name. Larger importers or mix their own essential oils and source the basic (pure) oils from all over the world.

Flavour and fragrance houses develop customized products being a key factor of their success. Their 'artistic' and unique flavour or fragrance is not easily interchangeable with other products and are well recognised by consumers if they are launched successfully. Most houses are selling essential oils by the Internet and or via direct sales women being very similar to the cosmetic brand Avon.

Some houses stock up to 3,000 raw materials coming from any country to have many grades of each material on a seasonal basis. Compounds are usually custom-made on a batch basis because of the high value, low volume and exclusive nature. Their production planning is often short term as they are flexible enough to respond to their customers quickly. Products should comply with technical requirements and regulatory considerations.

They build application capabilities in specific customer product areas and research consumer markets by testing the new product using consumer panels. In fact, they act as a partner in the development of a new flavour or fragrance of their client (industrial segment), which includes the search for raw material.

Industrial key segments. Since the 1990s, markets have become internationalised and multinationals expanded by global marketing strategies and buying locally strong brands. Their business units now cover food and non-food products. Many long established smaller sized manufacturers were disappearing from the industry, leading to high market concentration. The remaining small to medium companies specialised in specific flavour or fragrance products or sell to specific consumers groups. Others have become dedicated manufacturers for retailers, producing private labels. The growing power of supermarket/hypermarkets and their vertical

integration is reflected in the rising share of their private labels. In Germany, Switzerland, Spain and UK, the share of private labels is 34 - 45% in 2014.

Some significant trends to keep in mind are:

- **The increase of concentration in the industry,** which has strengthened the bargaining power of the industrial segment, in relation to flavour and fragrance houses. In retail, the role of super and hypermarkets, perfumeries and (organic) health shops is expected to become more important. Last but not least, Internet sellers are still successful in the aromatherapy market.
- **For new producers it is challenging to enter the market.** Once the consuming industry developed a product using specific oil, they do not want to change that oil or change the supplier, as they may fear a change in quality. On the other hand, for small companies, e.g. from Nepal there is always an opportunity to sell to small industries or to sell in the aromatherapy or health centre markets.
- **Direct purchases by professional aromatherapists.** In a recent 2013 survey of trends in the aromatherapy market in the US, over 62% of professional aroma therapists also made up products for re-sale in addition to their professional use. Almost all aromatherapists are self-employed, running their own small practices, but many also worked in education role (40%) and in retail/wholesale (26%). Distribution is very fragmented here with typical purchase volumes only purchasing each oil in small quantities (0.5 to 1 litre/yr) as opposed to 50-liter drums by importers/processors - for large volume oils.
- **Customers increasingly expect flexibility** from fragrance houses and their raw material suppliers in terms of high-speed service, complete service, fast processing and delivery of big as well as small orders. Besides, they expect clear product documentation.
- **The traceability of raw materials** of the consuming industries will move further towards the attention of the consumers. The sustainable principle won't stay at the board level in a company but is an integral part of the way all employees think and act on a daily basis.

Indirect or Direct?

The first decision as an exporter from Nepal you have to make is whether to approach your new market directly or indirectly.

- **Indirect.** An indirect approach means all export activities are taken care of by a broker, trader agent or agent. For large flavour and fragrance houses, the distribution is still via agents, importers or via specialised distillers. Whereas for MAPs, the distribution channels are mainly to processors, distillers or importers.
- **Direct.** If you decide to enter the market direct to flavour and fragrance houses or to the consuming key segments, be aware of the fact that you will have to take care of in-market stocks to be able to deliver quickly.

You could ask yourself:

- What is the buying policy of your potential customer, sales philosophy (e.g. Fair Trade) and do they operate in different countries?
- Do you have the required sales staff (relation management), logistical (stock keeping, fast delivery) and human resources (order control, customer service) to deal directly?
- What are the costs (margins involved) of each channel?
- What are the risks (e.g. losing control) for you when dealing with the selected channel?
- Is a multi-channel approach possible?
Since importers, processors and industries have become more concerned with the unpredictability of retailers' demand, they place new demands on their supply chain for faster replenishment of stocks and for providing additional services.

Agents

- A big advantage to work with agents is that they know the market very well and they can provide you information on competitors and trends. They are small and therefore flexible and can communicate with consuming industries or retailers in their own language and identify new niches in your target market. You could visit new clients and trade shows with them.
- Please note that you send the invoice subsequent deliveries direct to customers. Then you still need to pay the agreed commission to your agent for each delivery.

FOLLOW UP WITH THE POSSIBLE TRADE PARTNERS AFTER THE FIRST CONTACT WILL KEEP THE RELATION 'SWITCHED' ON.

- Always consider carefully the advantages and disadvantages of working with agents. Agents (as opposed to importers) are very well protected by law. Once you are engaged with them, it would be very hard to bypass them and to deal directly with their customers.

Online sales

The online sales channel continues to grow in importance. There are the following options for you:

- Create your own web site with a possibility to sell online. Buyers increasingly look first at the website of a new supplier before talking to a new supplier.
- You could take part in a site for international creative people who would like to expose and sell their product. Although you must be able to open up an account to receive credit card payments. A well-known online 'marketplace for handmade products' that also offers essential oils from small companies is www.etsy.com

Identifying possible trade partners

Finding trade partners. You can find them via **trade fairs** (catalogues), local trade organisations, Chambers of Commerce, Trade directories (internet or in business libraries) or online telephone directories (yellow pages) or in the last sections of country Chapter in this report.

Checking on interesting trade partners by checking their company's website (organisation, type of products, area's, to whom they sell and financial stability via www.dnb.com.

Create interest and build the relationship. Tell to the interested trade partners that you are studying their market.

- **Contact them** and tell that you will visit his/her market shortly and would like to show your new essential oil range being more focussed on his/her market.

- **Try to get an appointment for a visit.** Often you need to contact them several times.
- **Communicate with them.** It is important that you communicate well with the buyer. Are you both speaking a mutual language?
- **Follow up with them after the first contact** (personal or written) and keep the relation 'switched on' by keeping them informed about your business and new product development.

Samples

- Some buyers want you to send samples before giving the order. Sample shipments are very expensive. Try to judge from the buyers' explanation why he needs these samples first and if it is really worth your investment.
- If you promise to send a sample, try to do it quickly. This creates trust with your buyer.

Delivery conditions and terms of payment

Contracts are negotiated on the basis of samples supplied. Most traders prefer to receive prices on FOB (Free on Board), CIF (Cost, Insurance and Freight) or Cost and Freight (C&F) destination basis in US\$ or Euros. New exporters are usually paid after the receipt of the goods.

Established suppliers are paid either by Letter of Credit (L/C), on an advance payment basis or Cash Against Documents (CAD). In the pharmaceutical ingredients trade, it is increasingly common that products are only paid after the goods have been approved by the importer, for example after quality control by own/external laboratories, regarding residues.

Contracts may be made for the coming harvest with the exporters who have supplied products satisfactorily for several years. Contracts are usually negotiated on the basis of quantity delivered, purchasing price, mode of delivery and payment. *More information on the Incoterms can be found at / www.iccwbo.org/incoterms/.*

INFORMATION TO PREPARE WHEN TALKING WITH BUYERS

A buyer or customer will request detailed information before entering a possible business relationship with suppliers. Considering that these questions are generally the same, as a MAPs exporter you should prepare answers to questions such as:

- What MAPs varieties are commonly grown in Nepal and by the farmers you work with?
- Are you GACP or GLOBALG.A.P. certified? Do you have any other certification such as hygiene, environmental protocols or social certifications?
- What is your production period (harvesting seasons)?
- What are the peak production periods?
- Can you give an export calendar?
- What are the effective volumes produced and what is the production's forecast growth for the coming year?
- What percentage of the production is destined for exports and what percentages are left on the local market?
- How much volume can you send on a weekly/monthly basis? Be honest, realistic and conservative.
- Do you work directly with growers (farming contracts)? How many?
- Details about your company such as capital, location, contact details, number of permanent and seasonal employees, essential documents: letterhead etc.
- What are the airline companies flying out of Nepal?
- What are the flight frequencies and what is the cost of freight per airline?
- What are the sea freight companies from Nepal? What are the shipping schedules and what is the cost of freight per vessel?
- At what price do you expect to sell your MAPs in the export market? What is the minimum price under where you consider losing money? Keep some reserve here !

3.7.4 Promotion Strategy

So far, little promotion was done by Nepali companies, people are not aware about MAPs or essential oils from Nepal. They cannot recognise the difference between oils from Nepal, India or other Asian countries. Therefore, increasing the awareness of products and unknown oils made in Nepal will be a crucial step towards the upgrading of Nepali sector being helped by a recognisable collective brand and aromatherapy chart, which should be clearly communicated to consumer groups.

There are the following promotional tools:

Trade shows

This is one of the most important tools if you start exporting. In this sector, trade fairs are often the place where new trends in raw MAPs, essential oils are introduced in new applications (cosmetics, natural health and well-being) for the coming

season, especially at the new product corners e.g. at the Biofach or Vivanes (see photo). You will have to consider the attractiveness of a trade fair reaching potential new customers against the relative expense of participation. However, with proper planning, or perhaps working in conjunction with colleague companies, you can share the costs. Prepare some strips so that people can smell or check your oils.

If you cannot afford having a stand at a trade fair, you may find that it is a valuable experience just to attend a trade fair as a visitor. Although you will not have an opportunity to sell anything, you will meet other trade personnel in the industry.

Catalogue or brochure

It is essential that you are able to show a good clear photograph of your essential oil range, together with their key descriptions and some considered claims. You will use this to send to customers (in a mailing campaign) or to show them at trade fairs, presentations.

Website

Going online is fundamental in this sector. Especially when taking into account that trust and credibility are major challenges for you as an exporters, your website could conquer these already to some extent. A website showing a well-presented range, your mission statement, competitive advantages (e.g. USP, quality, cost reduction and delivery reliability) and how the MAPs are collected, helps create a trustworthy environment.

The celebrity influence

Marketing in the BPC segment is moving from pure product promotion towards more lifestyle promotion. Despite the recession, celebrities continue to act as ambassadors of large cosmetic companies. Other celebrities draw the attention to Nepal for charity purposes, which might be helpful to boost the awareness of MAPs and oils from Nepal.

Advertising

While the Internet is now used extensively, and cross-media advertising is increasingly common, many buyers continue to read the trade press, or the online equivalent, in order to keep ahead/well-informed of industry news, trends and developments. With advertisements, you are in control of the content, although they can be expensive to produce and require repetition to be effective.

- There are less expensive ways to feature in the trade press, such as press releases or advertorials, but you have less control over the final content in these cases.
- You can also place cheap advertisement in trade magazines in order to find trade partners.

The right timing

You could try to anticipate on National Promotion Campaigns by the industry especially related to perfumes, cosmetics and other gifts in the beginning of December (Christmas), in February (Valentines' Day) or in spring (Mothers' day) and integrate your promotions with your trade partner or across social media.

Joint promotion in Nepal

A collective brand will certainly give a contribution to the clear recognition of Nepal as an exporting country of MAPs and essential oils with a long tradition in their use and distillation. More exposure can be given by a one-stop showroom for MAPs and essential oils from Nepal. This could be in, e.g., Kathmandu, or in the export market to be controlled by a trusted trade partner.

The advantages of essential oils

Essential oils from Nepal corresponds well to the 'back to basics' need for natural ingredients in food, beauty & personal care, new oils for aromatherapy, exotic and rare scents in high class perfumery, and the tendency for relaxation, health and well-being in export markets. In the coming years, demand by companies for new ingredients and new, unknown



types of essential oils that are natural and give health benefits continues to grow. In general, essential oils:

- They have many different uses - see Annex 3
- They are antibacterial, antiviral, antifungal, and antimicrobial.
- Essential oils bypass the digestive system so they are beneficial for people with poor digestion/assimilation.
- They require no refrigeration and require very little storage space.
- They have the longest shelf life of any plant known to man.
- Essential oils are highly oxygenating. It is said that oxygen and disease cannot exist in the same environment.
- They are very cost-effective because they are one of the few substances that “the more you use them, the less you need them.”
- They are suitable for babies since they cannot swallow tablets and capsules thus essential oils provide a solution as they only come in liquid form.

Consumer Education

A major factor frequently identified is that sales are closely tied to consumer education – the more consumers are informed of how and why to use essential oils, the greater the sales and growth. For producers wanting to target this market, the use of websites and the full range of social media enables them to target both the professional aromatherapists and the retail consumers. In addition, these channels provide a powerful tool to communicate directly to buyers on the key factors that influence purchases, particularly sustainability issues.

Promoting Essential Oils from Nepal

On the next page an aromatherapy chart is given on how to apply essential oils from Nepal for different health care, remedies or other uses in aromatherapy.



Essential oils are highly oxygenating.



100% PURE ESSENTIAL OILS

Mental

chamomile, cinnamon, citronella,
lemongrass, mentha, palmarosa,
rhodondendron, spikenard, timur,
valerian, wintergreen

Respiration

calamus, cardamom, citronella,
lemongrass, gentian, mentha,
rhodondendron, timur, wintergreen

Antimicrobial

cardamom, chamomile,
citronella, lemongrass, palmarosa,
rhodondendron, timur, wintergreen

Organs

cardamom, gentian, mentha,
palmarosa, rhodondendron

Digestive

asparagus, calamus, cardamom,
chamomile, cinnamon, citronella,
coriander, curcuma, ginger,
lemongrass, mentha, palmarosa,
spikenard, timur, wintergreen

Women's health

chamomile, cinnamon, citronella,
curcuma, spikenard, valerian

Men's health

curcuma, yarshagumba

Muscles, joints & bones

chamomile, cinnamon, citronella,
curcuma, lemongrass, mentha,
palmarosa, rhodondendron, timur,
wintergreen

Arthritis & rheumatism

asparagus, calamus, chamomile,
cinnamon, citronella, curcuma,
lemongrass, mentha, timur,
rhodondendron, valerian,
wintergreen

Head

calamus, cardamom, chamomile,
cinnamon, lemongrass, mentha,
rhodondendron, spikenard, timur,
valerian, wintergreen

Dermatological

calamus, cardamom, chamomile,
citronella, curcuma, gentian,
lemongrass, mentha, palmarosa,
rhodondendron, spikenard, timur,
wintergreen

Immunesystem

chamomile, cinnamon

Cancer

cardamom, curcuma

Diabetes

timur

Epilepsy

spikenard

Obesity

rhodondendron

Anorexia-Appetizer

calamus, cardamom, chamomile,
cinnamon, curcuma, rhodonden-
dron, timur

Hormones

palmarosa (thyroid)

Pediatric

chamomile, ginger

Sedative - Pain

cardamom, valerian, wintergreen

Other:

Insect repellent or bites
cinnamon, citronella, gentian,
lemongrass, timur



MAPs INCLUDES A LARGE NUMBER OF MEDICINAL AND AROMATIC
PLANT SPECIES IN THEIR CRUDE FORM USED IN THE PROCESSING
AND PRODUCTION OF PHARMACEUTICALS, COSMETICS AND
COLOURING AGENTS.



ANNEX 1 PRODUCT COVERAGE & STATISTICAL CODES

ANNEX 1 PRODUCT COVERAGE and STATISTICAL CODES

SELECTED MAPs FROM NEPAL FOR THIS MARKET STUDY

ENGLISH	LATIN	NEPALI
1. Timur /Nepalese Pepper	<i>Zanthoxylum armatum</i>	Timur
2. Mentha /Cornmint	<i>Mentha arvensis</i>	Mentha
3. Asparagus	<i>Asparagus racemosus</i>	Kurilo, Satawari
4. Cinnamon	<i>Cinnamomum tamala</i>	Tejpat, Dalchini
5. Butternut	<i>Diploknema butyracea</i>	Chiuri
6. Spikenard	<i>Nardostachys jatamansi</i>	Jatamasi
7. Chamomile	<i>Matricaria chamomilla</i>	Chamomille
8. Soapnut	<i>Sapindus mukorossi</i>	Rittha
9. Wintergreen	<i>Gaultheria fragrantissima</i>	Machhino/Dhasingre
10. Anthopogon	<i>Rhododendron anthopogon</i>	Sunpati
11. Ginger	<i>Zingiber officinale</i>	Aduwa/Suntha
Citronella	<i>Cymbopogon winterianus</i>	Citronella
Palmarosa	<i>Cymbopogon martinii</i>	Palmarosa
Lemongrass	<i>Cymbopogon flexuosus</i>	Lemongrass
Valerian	<i>Valeriana officinalis</i>	Sugandhawal
Gentian	<i>Neopicrorhiza scrophulariiflora</i>	Kutki
Turmeric	<i>Curcuma longa</i>	Beshar/Haledo
Large Cardamom	<i>Amomum subulatum</i>	Alaichi
Sweet flag	<i>Acorus calamus</i>	Bojho
Yarshagumba	<i>Ophiocordyceps sinensis</i>	Yarshagumba/Jiwan buti

STATISTICAL CODES

MAPs (HS code 1211) includes a large number of medicinal and aromatic plant species in their crude form used in the processing and production of pharmaceuticals, cosmetics and colouring agents. MAPs are the starting materials for natural ingredients such as essential oils, dry and liquid extracts and oleoresins.

Spices are not included in the statistical MAPs category. In this report cardamom, curcuma (turmeric) and cinnamon in crude form are covered. They are a basis for medicinal or consumer health products and an important export product for Nepal. Commodities in crude form that are important for Nepal and quantifiable such as ginger, soapnut and rudraksha, are also covered in trade statistics.

Essential oils (HS code 3301) are concentrated hydrophobic liquids containing volatile aroma compounds from plants (MAPs). The oils are extracted in Nepal by distillation, often using steam, a process that is common since the 8th century. The oils can be distilled from the leaves, stems, flowers, bark, roots, seeds, fruits or other parts of a plant. Using various technologies, essential oils are sourced from 3,000 plants, and solvents in the world.

Many flowers contain little volatile oil and their chemical components are too delicate and can be easily denatured by the heat used in steam distillation.

Essential oils are used in perfumes, cosmetics, soaps, flavouring food, drink and for adding scents/ fragrances to incense and household cleaning products. Oils are also used in massage, diffused in the air, as a deodorizer heated over a candle flame, or burned as incense.

Concentrates and by-products are aqueous distillations and concentrations of essential oils and terpenic by-products of essential oils. These relate to different conditions based on processing of essential oils. Terpenes and terpenoids are the primary constituents of the essential oils. The trade of this category is substantial, albeit the process is also advanced. Synthetic variations and derivatives of natural terpenes and terpenoids enlarge the variety of aromas used in perfumery and flavours used in food additives.

Oleoresins are separations from trees (trunks or barks) and consist entirely—or mainly—of essential oil and resin. Prepared oleoresins usually contain non-volatile oils (so-called “fixed” oils). The type of solvent used in the extraction of prepared oleoresins should be considered carefully as they are difficult to remove

totally even under vacuum. In addition, prepared oleoresins are often used in food preparations.

Resinoids are mainly used as perfume preservative and extracted with solvents such as methanol, ethanol, toluene, or acetone. The products mainly consist of non-volatile, resinous compounds. They are usually sticky and are sometimes diluted to smoothen processing. As the extraction process is (too) advanced for most Nepali exporters, resinoids are covered in the report to a limited extent.

There are more than 90 essential oils in the world, and each has its own benefits. With so many plant species from which essential oils products are

sourced it is nearly impossible to accurately classify which plant belongs to which plant family or species. Although, the most traded oils in volume terms are broadly divided as above. The different types of essential oils is further specified into 6 categories in Table 1.

Please note that the trade flows between the continents is vague and complex because different HS codes are used in the USA, Europe, India and China.

TRADE STATISTICS IN THIS REPORT COVER THE FOLLOWING PRODUCT GROUPS:

ENGLISH	LATIN	NEPALI
MAPs	121190	Plants, parts of plants, incl. seeds and fruits, used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered (excl. ginseng roots, coca leaf and poppy straw)
COMMODITIES	0910110015	- Ginger whole
	0910110010	- Ginger whole organic certified (only for USA market)
	0910120000	- Ginger crushed or ground
	14049090	- Vegetable products - hard seeds, pips, hulls and nuts including Soapnuts (only for USA and Indian markets)
SPICES	14049070	- Vegetable products n.e.s including Rudraksha seeds (only for Indian market)
	091030	- Curcuma -Turmeric (powder, dried and fresh)
	090831	- Cardamom: neither crushed or ground
	090832	- Cardamom: crushed or ground
ESSENTIAL OILS CITRUS	3301 11	- Bergamot
	3301 12	- Orange
	3301 13	- Lemon
	3301 14	- Lime
	3301 19	- Other citrus fruits
MINT	3301 24	- Peppermint
	3301 25	- Other mints
FLORAL and GRASS	3301 21	- Geranium
	3301 22	- Jasmin
	3301 23	- Lavender
	3301 26	- Vetiver
Other essential oils	3301 29	This large, diverse group is further specified in Table 1
Concentrates and by-products	3301 90	Concentrates & aqueous distillates of essential oils and Terpenic by-products
Resinoids	3301 30	

TABLE 1 : HS CODES USED IN USA, EUROPE, INDIA AND CHINA

		USA	EUROPE	INDIA	CHINA
CITRUS	Bergamot	3301 11		3301 2540	
	Orange	3301 12	all citrus	same	all citrus
	Lemon	3301 13	same	as USA	same
	Lime	3301 14	as USA	3301 19 5120	as USA
	Other citrus fruits	3301 19		3301 19 90	
MINT	Peppermint	3301 24 0000	all mint	3301 24 00	all mint
	Corn mint and mint NES	3301 25 0010	same	3301 25 90	same
	Spearmint	3301 25 0020	as USA	3301 25 10	as USA
HERBS	Rosemary	3301 29 5137	HS codes		HS codes
	Sassafras	3301 29 5141	herbs		herbs
	Coriander		not	3301 29 22	not
	Dill		specified	3301 29 23	specified
SPICES	Patchouli	3301 29 5129		3301 29 34	
	Cinnamon (bark)			3301 29 17	
	Cinnamon (leaf)		HS codes	3301 29 18	
	Caraway	3301 29 5105	spices	3301 29 14	
	Cassia	3301 29 5107	not	3301 29 15	3301 29 40
	Clove	3301 29 5113	specified	3301 29 21	
	Nutmeg	3301 29 5125		3301 29 32	
	Curcuma/Turmeric (oil)			3301 29 49	
	Cardamom			3301 90 15	
FLORAL and GRASS	Geranium	3301 21	3301 21	3301 29 5116	3301 2991
	Jasmin	3301 22	3301 22	3301 29 5117	3301 22
	Lavender	3301 23	3301 29 79	3301 29 5118	3301 23
	Vetiver	3301 26	3301 26	3301 29 5142	3301 26
	Palmarosa			3301 29 33	
	Citronella	3301 29 5111		3301 19 10	3301 29 20
	Lemongrass	3301 29 5119		3301 29 42	
	Rose	3301 29 5135		3301 29 38	
	Ylang Ylang	3301 29 5143	3301 29 41	3301 29 43	
	Clove, Niaouli, Ylang Ylang		3301 29 11		
OTHER	Geranium, Jasmine, Vetiver		3301 29 71		
	Eucalyptus	3301 29 1000		3301 29 24	3301 29 26
	Ginger		HS codes	3301 29 26	
	Orris	3301 29 2000	Other oils		
	Anise	3301 29 5103	not	3301 29 11	3301 29 30
	Garlick	3301 29 5115	specified	3301 29 47	
	Onion	3301 29 5128			
	Petitgrain	3301 29 5133		3301 29 36	
	Sandalwood	3301 29 5139		3301 29 37	
	Cedarwood	3301 29 5109		3301 29 16	
	Rosewood or Linaloe	3301 29 5121		3301 29 47	
	Other essential oils	3301 29 5150	3301 29 41	3301 29 90	
	NES		3301 29 50		

Source: ITC Trademap (2016)

This large group includes camomille, timur, spikenard, wintergreen, valerian, asparagus, rhododendron etc etc..

Note 1: If no HS codes are mentioned it means that they are not specified**Note 2:** Selected types for the study are indicated in yellow

HS CODE USED FOR SOAPNUT - EXPORT

HS CODE	DESCRIPTION
1404	Vegetable Products Not Elsewhere Specified Or Included
14049029	Other
14049021	Powder
14049030	Hard seeds, pips, hulls and nuts, of a kind used primarily for carving
14049090	Other
3304	Beauty Or Make-Up Preparations And Preparations For The Care Of The Skin (Other Than Medicaments), Including Sunscreen
33049990	Other

Interpretation of trade statistics

Please note that there are several unregistered trade flows - especially of MAPs - from Nepal to India and from Nepal to China. Therefore, the trade statistics given in this report are useful to compare developments in these countries for the different types of products. However, they must be interpreted and used with extreme caution.

On the other hand, the registration of trade is compulsory and more strictly controlled between between Nepal and USA, France, Germany or the rest of the world. Even if trade statistics are more accurately represented, imports do not reflect domestic demand due to the presence of international trading companies who re-export to other countries. The USA is a large re-exporter to Canada, Mexico and Europe, while Germany re-exports both MAPs and Essential oils to Austria, Switzerland, France and Eastern EU countries. France is a significant re-exporter to Germany, Spain and Italy.

ANNEX 2 DETAILED IMPORT STATISTICS

ANNEX 2 DETAILED IMPORT STATISTICS

TABLE 1: USA - IMPORTS OF MAPs AND SELECTED COMMODITIES AND SPICES, 2010-2014,
VALUE IN US\$ THOUSAND / VOLUME IN TONS

		2010		2014		CAGR*	MAIN SUPPLYING COUNTRIES (SHARE IN VALUE 2014)
		VALUE	VOLUME	VALUE	VOLUME		
MAPs	→	182,853	63,315	269,585	70,787	+8%	
Top 15 suppliers		158,617	58,301	234,630	65,628	+11%	Top 15 → 87% of US imports (value) 93% of US imports (volume)
India		47,886	10,745	70,094	18,958	+8%	
Mexico		34,200	28,232	39,746	20,281	+3%	
China		12,790	2,737	30,227	3,108	+19%	
Egypt		18,202	7,251	29,510	10,146	+10%	
Colombia		10,504	2,753	16,805	3,916	+10%	
Germany		9,765	1,411	14,368	1,733	+8%	
Hong Kong		9,101	1,073	8,824	848	-1%	
Albania		2,014	580	6,177	1,736	+25%	
Tanzania		2,375	41	5,011	73	+16%	
Peru		3,562	882	4,040	780	+3%	
France		1,929	242	3,462	236	+12%	
Canada		2,301	103	3,375	177	+8%	
Bulgaria		1,458	479	2,991	508	+15%	
Morocco		2,045	1,533	2,800	1,827	+6%	
Turkey		485	239	2,330	1,301	+37%	
Other suppliers		21,452	4,772	29,346	4,902	+6%	
Small Asian suppliers		2,784	242	5,609	257	+15%	Small Asian suppliers → 2.1% of US imports (value) 0.4% of US imports (volume)
Malaysia		27	2	2,115	7	+139%	
Taiwan		1,451	52	1,488	46	+1%	
South Korea		640	54	1,273	77	+15%	
Sri Lanka		230	11	252	22	+1%	
Japan		270	5	158	2	-11%	
Thailand		86	8	107	9	+4%	
Pakistan		84	65	154	67	+12%	
Vietnam		6	1	88	20	+71%	
Indonesia		0	0	62	4	+57%	
Philippines		12	0	13	1	0.2%	
Nepal		64	44	6	2	-38%	Since 2011 Nepal exports dropped to rank no. 71 next to Bolivia and Gyuana
COMMODITIES							
Ginger whole		65,261	42,694	107,455	47,393	+10%	China (73%), Peru (7%), Brazil (6%), Thailand (3%) Costa Rica (3%), Nigeria (3%), Ecuador (2%), India (%), Dom Rep.
Ginger organic				20,713	9,728		China (67%), Peru (25%), India (3%)
Ginger crushed/ground		3,563	1,486	5,837	1,627	+11%	China (39%), India (32%), Nigeria, Peru
Seeds, nuts incl. Soapnuts		38,908	28,848	58,217	40,439	+8%	Mexico (48%), China (16%), India (8%), Thailand (5%), S. Lanka.... Nepal no. 35
SPICES							
Curcuma		12,695	3,522	18,175	5,428	+7%	India (75%), China (9%), Japan (5%), Fiji
Cardamom whole		13,814	659	7,592	984	-10%	Guatemala (74%), India (16%), Colombia (6%), Honduras (1%), China, Nicaragua
Cardamom crushed/ground				560	63		Guatemala (61%), India (35%), Honduras

Source: ITC TradeMAPs (2016)

* Compound Annual Growth Rate in value 2010 – 2014

TABLE 2: USA - IMPORTS OF ESSENTIAL OILS, 2010-2014 BY TYPE OF OIL AND SUPPLYING COUNTRIES
VALUE IN US\$ THOUSAND / VOLUME IN TONS

		2010		2014		CAGR*	MAIN SUPPLYING COUNTRIES (SHARE IN VALUE 2014)
		VALUE	VOLUME	VALUE	VOLUME		
TOTAL	→	560,056	36,759	845,175	45,610	+9%	
CITRUS		206,209	21,606	287,699	23,517	+7%	
Lemon		101,061	3,997	115,702	3,706	+3%	Argentina (47%), Italy (10%), Ireland (8%)
Orange		46,466	13,937	64,301	12,446	+7%	Brazil (46%), India (15%), Canada (8%)
Lime		31,203	1,525	60,716	1,414	+14%	India (78%), Brazil (8%), Germany (5%)
Bergamot		5,798	83	7,685	104	+6%	Italy (82%), France (7%), Cote d'Ivoire
Grapefruit		5,954	437	6,950	399	+3%	Germany (18%), South Africa (16%), Israel
Other citrus		15,727	1,625	32,349	5,448	+15%	Brazil (59%), Italy (18%), India (5%)
MINT		68,073	3,891	96,108	5,037	+7%	
Cornmint (incl. menta arvensis)		36,055	2,425	47,890	3,052	+6%	India (94%), China (4%), Denmark (1%) ...
							Nepal no. 15
Spearmint		20,953	739	28,711	1,016	+6%	India (59%), Canada (22%), China (19%)
Peppermint		11,065	479	19,507	801	+12%	India (79%), Chile (9%), UK (7%), France
Mints NES		6,021	248	4,708	168	-5%	India (59%), France (12%), China (11%)...
							Nepal (1.3%) no. 7
HERBS		18,010	332	24,566	438	+6%	
Patchouli		14,359	249	18,556	307	+5%	Indonesia (46%), France (15%), Spain (13%),
							India (10%), Germany (8%)
Rosemary		3,613	84	5,895	124	+10%	Spain (38%), France (31%), Tunisia (11%)
Sassafras		38	0.03	115	8	+25%	Taiwan (90%), France (10%)
SPICES		30,271	1,016	53,444	1,507	+12%	
Nutmeg		18,215	276	23,635	264	+5%	Indonesia (81%), Sri Lanka (10%), India (6%),
							Netherlands (2%), France
Clove		7,582	569	18,611	898	+20%	Indonesia (79%), France (10%)
Cassia		4,121	162	10,721	329	+21%	China (73%), Vietnam (12%), Japan (8%)
Caraway		353	10	477	17	+6%	Netherlands (38%), Hungary (26%)
FLORAL and GRASS		39,303	849	72,595	1,359	+13%	
Lavender		15,061	448	32,846	820	+17%	France (51%), Bulgaria (16%), China (11%)
Geranium		4,058	31	5,985	85	+8%	Egypt (39%), France (38%), China (26%)
Jasmine		2,514	2	5,652	13	+18%	France (44%), India (36%), Egypt (12%)
Vetiver		4,053	28	4,667	30	+3%	Haiti (85%), France (7%), Switzerland
Citronella		2,852	224	5,128	269	+12%	Indonesia (50%), China (24%), Singapore
							(10%), Sri Lanka (5%), Vietnam (4%)
Lemongrass		1,562	81	2,282	110	+8%	India (67%), Guatemala (21%), UK (6%),
							France (2%), Italy (1%), Belgium, Sri Lanka,
							Nepal (0.7%) no. 8
Rose		5,569	2	12,018	6	+17%	France (63%), Bulgaria (21%), Spain (5%)
Ylang Ylang		3,634	34	4,017	32	+2%	France (67%), Belgium (12%), Madagascar
							(11%), Switz., Germany, India
OTHER		32,059	1,471	41,744	1,283	+5%	
Sandalwood		5,128	29	14,924	40	+24%	Australia (38%), UAE (24%), France (12%)
Cedarwood		1,419	69	2,763	86	+14%	Switzerland (60%), China (28%), France
Eucalyptus		11,016	973	11,237	865	+0.3%	China (78%), France (7%), Brazil (4%)
Rosewood or Linaloe		346	5	478	6	+7%	France (95%), Canada (3%), China (2%)
Garlic		5,030	134	5,413	80	+2%	China (84%), India (7%), France (5%)
Anise		3,163	196	2,522	158	-4%	China (85%), France (10%), Bulgaria (1%)
Petitgrain		2,350	52	1,998	42	-3%	Spain (30%), Egypt (27%), Paraguay (23%)
Orris		1,935	0.6	1,324	0.5	-7%	France (95%), Switzerland (3%), Madagascar
							(2%), Nepal no. 4
Onion		1,672	11	1,085	6	-8%	Netherlands (36%), France (27%), India
Essential oils NES, Oleo-resins, Resinoids and Concentrates		166,131	7,594	269,019	12,469	+10%	

Source: ITC TradeMAPs (2016)

* Compound Annual Growth Rate in value 2010 – 2014

ANNEX 3 USES OF SELECTED MAPs,

ANNEX 3 USES OF SELECTED MAPs, ESSENTIAL OILS AND COMMODITIES

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
1. TIMUR Zanthoxylum armatum spices	Flavoring agent in confectionery industry and in manufacture of soft drinks.	Refreshing, pleasant, spicy odour. Interesting odor characteristics and valuable perfume effects. The tenacity of the fragrance makes the oil interesting as a fixative in woody- floral or aldehydic-woody, modern fragrances. It blends excellently with "gamma"-methyl ionone (alpha-iso-methyl ionone), hydroxycitronellal, linalool, geranium oils, cinnamic alcohol, clove bud oil, etc.	Therapeutic properties: analgesic, anti-allergic, anti-infectious, antirheumatic, antiseptic, antibacterial, carminative, cholagogue, circulatory system, emmenagogue, digestive, diuretic, dyspepsia, febrifuge, fungicidal, sedative, stimulant, stomachic, tonic and vermifuge. Insect repellent.	Insect bites, insect repellent, skin infection, arthritis, rheumatism, sprain, muscles and joints, neuralgia, fever, colic, indigestion, nausea, headache, migraine, respiratory problems, appetizer, insomnia, nervous tension, stress, improves voice quality, diabetes, lymphatic system.
2. MENTHA Mentha arvensis	The oil is mainly a starting material in the production of menthol, one of the most important of all flavoring agents. Flavoring non-alcoholic beverages, candy, chewing gum, hard candy, chocolate fillings, ices, seasonings, confectioneries, alcoholic beverages (liqueur), jams, etc.	Strong, fresh, bitter-sweet minty odour. One of the largest and most important of all the essential oils, is hardly used at all in perfumery fragrances. In cosmetics, soaps, detergents, in all kinds of toothpastes, mouthwashes, gargles, etc.	Therapeutic properties: analgesic, anodyne, antifungal, anodyne, anti-infectious, anti-inflammatory, diuretic, expectorant, insomnia, respiratory, sedative. Cough syrups, pills, herbal teas. It has become customary to use mentha arvensis oil as adulterant for "peppermint oil" all over the world except in the U.S.A.	Asthma, respiratory problems, skin infections, poor circulation, arthritis, rheumatism, muscles and joints, headache, migraine, insomnia, kidney-liver and spleen diseases, nervous tension, stress.
3. ASPARAGUS Asparagus racemosus	Flavoring confectioneries. Food supplement, high availability of nutrients.	Roots are bitter, sweet oleaginous, cooling, and indigestible.	Therapeutic properties: antibacterial, antiseptic, antidepressant, anti-oxidant, antispasmodic, antitussive, appetizer, calming, dyspepsia, digestive, diuretic, laxative, immunostimulant, respiratory problems, psychological problems, fluid retention, pain, cancer, dementia, diabetes, epilepsy, stomach and gastric ulcers, kidney disorders, chronic fevers. Male-	

Continued: Annex 3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
4. CINNAMON Cinnamomum tamala spices	Flavoring aromas, the alcohol is used for cinnamon notes and for rounding off fruit aromas. Cassia oil-Cinnamaldehyde is the major constituent and is used mainly for flavouring cola-type drinks.	Spicy notes, warm and woody-Oriental type. Cinnamic alcohol is valuable in perfumery for its odor and fixative properties. Component of many flower compositions (lilac, hyacinth and lily of the valley) and a starting material for cinnamyl esters, several of which are valuable fragrance materials.	female problems: PMS, menopause, galactagogue, uterine bleeding, phytoestrogenic properties, aphrodisiac, infertility and impotence. Some people use it to ease alcohol withdrawal.	Cardiac disorders, indigestion, infections, flu, fever, nausea, headache, arthritis, rheumatism, sprain, muscles and joints, poor circulation, insomnia, nervous tension, stimulant, tonic, appetizer, diarrhea, cramps, female problems.
5. BUTTERNUT Diploknema butyracea	Flavoring confectionery. Pulp can be consumed as a refreshing juice and provides significant nutritional value. Juice can be boiled to create a liquid sugar alternative. Butter can be used to cook as a substitute to vegetable oil.	Can be used as an alternative to Shea butter in the cosmetic industry for skin and hair related products, soaps.	Juice and seed oils can be used to treat rheumatic pain, indigestion and skin infections. Seed oils can also be used for treatment of headaches. Candle making. Resin can be used as glue to trap insects and as a pesticide.	
6. SPIKENARD/ JATAMANSI Nardostachys jatamansi	Banned for export without processing. In Medieval European cuisine widely used as part of the spice	When the oil is available, it can be used with advantage in perfumes such as Oriental bases, heavy florals, fougères, woody bases,	Therapeutic properties: aiding the regeneration of cells, anti-allergic, anti-aging, antibacterial, antifungal, anti-inflammatory, antispasmodic,	Deodorant, fever, maintains psychological and mental balance, cardiac palpitations, food poisoning, inflammations, skin infections, nau-

Continued: Annex3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
	blend to flavor Hypocras, a sweetened and spiced wine drink. From the 17th century it was one of the ingredients for a strong beer called Stingo. A modifier of calamus, valerian, hop, ginger, cardamom.	animal-ambre types etc. Natural deodorant. Hair preparations, hair loss and colour restoration. Anti-ageing properties.	circulatory, cicatrizing, laxative, powerful sedative properties, uterine health, varicosity, stimulant, tonic, epilepsy, eczema, psoriasis and incurable skin problems, psychological instability. Substitute for Valerian Oil, the reverse case has already occurred since Spikenard Oil is now a scarce oil . Diffuser, incense products, candles.	sea, flatulence, soothing skin, stimulant, colics, headache, epilepsy. Essential oils can be toxic when taken internally so should only be taken orally under the guidance of a qualified professional.
7. CHAMOMILE Matricaria chamomilla flower/grass	Non-alcoholic beverages, baked goods, frozen, gelatins- puddings, soft candy, teas Flavoring of alcoholic beverages, like certain liqueurs, particularly in those of the D.O.M. or the Benedictine type.	Sweet, herbaceous with fresh-fruity undertone. Oil is used in very small percentages in high-class perfumes to introduce a warm, rich undertone which lasts through all stages of evaporation. Wintergreen-forest type fragrances. Cosmetics, hair and bath products, soaps and detergents.	Therapeutic properties: analgesic, anodyne, antibacterial, antifungal, anti-inflammatory, antirheumatic, antiseptic, antispasmodic, carminative, cicatrizing, decongestant, digestive, febrifuge, hepatic, hormone influencer, immunostimulant, relaxant, sedative, stimulating, stomachic, tonic, vulnerary. The flower compounds have shown anti-tumor activity in laboratory tests (contains apigenin).	Inflammations, skin, oral and viral infections, allergies, fever, eczema and other skin problems, insomnia, nervous tension, stress, reduces blood pressure, stress, indigestion, arthritis, rheumatism, muscles and joints, wound healing. Suitable for children and babies.
8. SOAPNUT Sapindus mukorossi		Cleanser for hair, skin, as detergent and other household cleaning	Soap nuts are all-natural and have been used for centuries around the world. Hypo-allergenic, odorless and no damage to surfaces or fabrics. Therapeutic properties: expectorant, emetic, contraceptive, excessive salivation, epilepsy, psoriasis, hair problems, head lice and migraines. Studies have shown that saponin	

Continued: Annex3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
9. WINTERGREEN Gaultheria fragrantissima	Being vulnerable and economically important due to rich source of natural salicylic acid, Gaultheria has drawn much attention. There is an urgent need for biotechnological interventions not only for its conservation but also for bioprospecting its genome resources. Measures for sustainable development neccessaire. Flavoring agent for chewing gum, soft drinks (coca cola), baked goods, frozen dairy, gelatins- puddings, non-alcoholic beverages, teas, hard and soft candy, alcoholic beverages (rootbeer). Red berries (dried) are edible.	Sweet, woody odour, a peculiar fruity top note. Forest type fragrances in perfums and home. Skin-care, skin conditioner, shampoos, flavoring agent for toothpaste, Methyl salicylate*; = synthetic, = substitute, = of better quality consistency, but lacks fragrant notes, it can't be used in natural and organic cosmetics.	from soap nuts inhibit tumor cell growth. Natural mosquito repellent. Biodiesel. Used in pharmaceutical preparations as flavor corrector, home fragrances. Therapeutic properties: anaesthetic, analgesic, anticarcinogenic, antidiarrhoea, anti-inflammatory, antiviral, antirheumatic, antiseptic, antispasmodic, astringent, antitussive, anodyne, carminative, digestive, diuretic, emmenagogue, galactagogue, sedative, stimulant. Only methyl salicylate* and Umbellate Wintergreen (Chimaphilla umbellata) are allowed in EU! Research required for Gaultheria fragrantissima. Methyl Salicylate, original a natural pain reliever, is commercially produced and known under the name Aspirin. Biopesticide.	Inflammations, arthritis, rheumatism, muscles and joints, broken or bruised bones, flatulence, cellulitis, poor circulation, cramps, eczema, gout, hair care, psoriasis, headache, respiratory problems, pain killing, nervous tension, stress, stimulating. Don't use it when allergic for aspirin.
10. RHODONDENDRON Rhod. anthopogon flower/grass	Herbal tea to aid digestion, stimulate the appeanthopogontite.	A sacred flower to Buddhist monks and Tibetans. Antopogon oil, rare and extremely limited, 200 kilo a year. Exotic floral, fresh, sweet herbal aroma with lingering sweet fruity notes, faintly balsamic. Cleans, purify and soothe the skin due to its exceptional antimicrobial	Therapeutic properties: analgesic, antibacterial, antifungal, anti-infectious, anti-inflammatory, antirheumatic, antispasmodic for respiratory system, antiseptic, antiviral, antitoxic, carminative, digestion, dipurative, immunostimulant, vulnerary, sedative, stomachic, liver and	Colds, flu, appetizer, vomiting, blood disorders, inflammations, skin infections, irritated scalps, strengthening and shining hair, headache, relaxation, arthritis, rheumatism, muscles and joints, fibrous bones, insomnia, nervous tension, stress, stimulating, tonic, obesity.

Continued: Annex3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
		activity. Skincare, shampoos, soaps, bath gel, fragrances in natural perfums.	kidney disorders, stimulant, siccitrizant, tonic, emmanagogue, parasiticide. Fragrance diffuser, incense, incense oils, candles, fragrance sticks	
11. GINGER Zingiber officinale	Flavoring alcoholic beverages (ginger ale), baked goods, confectioneries, condiments, curries, sauces, chips, relishes, frozen dairy, fruit juices, gelatins-puddings, fats oils, gravies, meat products, non-alcoholic beverages, teas, syrups, crystallized, soft candy, hard candy, processed vegetables.	Mens fragrances, aftershave, in formulations for skin and hair products, including refirming, massage and anti-dandruff preparations.	Therapeutic properties: analgesic, anti-inflammatory, antimicrobial, antiseptic, antispasmodic, anodyne, aphrodisiac, carminative, expectorant, febrifuge, rubefacient, stimulant, tonic, digestive, antispasmodic, respiratory, stomachic, gastro-intestinal, motion and morning sickness, food poisoning, maintains physical, mental and psychological balance, blood circulation. Insect repellent; against Anopheles culicifacies mosquitoes, transmitter of Malaria. Fragrance diffuser, incense, incense oils, candles, fragrance sticks.	Pain and ache, blood circulation, respiration, sinusitis, indigestion, nausea, diarrhea, flatulence, colics, spasms, motion and morning sickness, arthritis, rheumatism, muscles and joints, appetizer, cholesterol level, irregular and painful menstruation, impotence, depression. It should be noted that ginger oil is very strong and should be used carefully and sparingly.
CITRONELLA Cymbopogon winterianus flower/grass	Flavoring alcoholic beverages, baked goods, chewing gum, frozen dairy, gelatins-puddings, non-alcoholic beverages, soft candy, hard candy.	Fresh, powerful, lemony scent. Fragrances widely used in perfumery oils, limited extent for perfuming soaps and detergents, conditioning and soothing oily scalp and hair, toothpastes.	Main use is a starting material for the production of isopulegol, citronellol, and hydroxydihydrocitronellal. Therapeutic properties: antibacterial, antidiarrheal, antiseptic, antispasmodic, anti-inflammatory, deodorant, diaphoretic, diuretic, febrifuge, fungicidal, stomachic, stimulant, tonic, vermifuge.	Depression, indigestion, infections, inflammations, increase sweating and urinating, nervous tension, stress, skin-, respiratory and internal infections, arthritis, rheumatism, spasms, deodorant, blood circulation, female problems, secretion of hormones, insect repellent.

Continued: Annex3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
			Insect repellent; mosquitos, lice, body and head louses, fleas, worms. It has been found particularly effective on the mosquito, Aedes Aegypti, transmitting several tropical fevers like Yellow Fever, Dengue and the Zika-virus. Fragrance diffuser, incense, incense oils, candles, fragrance sticks.	
PALMAROSA Cymbopogon martinii flower/grass	Flavoring alcoholic beverages, non alcoholic beverages, frozen dairy, soft candy, baked goods, gelatins, pudding, tobacco.	Sweet, rose like odour, grassy nuances with citrus and lavender notes. Perfums due to excellent tenacity, cosmetics, soaps, lotions, facial steams, hair treatments. Palmarosa Oil is frequently adulterated with its close relative, Gingergrass Oil, but also with commercial geraniol, obtained from citronella oil or produced synthetically. It is a starting material for geraniol and geranyl esters of high odor quality. Palmarosa is superior in quality to gingergrass.	Therapeutic properties: antiseptic, antiviral, anti-bacterial, cicatrizing, cytophylactic, digestive, febrifuge, hydrating, psychological balance, sedative, cicatrizing.	Eliminates viruses, bacterial infections (geni-to-urinary organs, colon, kidneys), depression, indigestion, fever, moisture balance skin, anti-aging properties, nervous tension, stress, tonic, growth of the defensive cells, relaxation, wound healing,
LEMONGRASS Cymbopogon flexuosus flower/grass	Flavoring alcoholic beverages, baked goods, chewing gum, fats oils, frozen dairy, gelatins-puddings, hard candy, non-alcoholic beverages, meat and fish products, soft candy, curries, soups, sauces, confectioneries.	Fresh, grassy-citrus scent and earthy undertone. Fragrance in perfum, soaps and detergents. Cosmetics, skin care, deodorants, shampoos, lotions and tonics. It also works as an air freshener and deodorizer, especially when blended with other essential oils like geranium or bergamot.	Used in the production of ionones, methylion-ones, vitamin A, or for the isolation of citral. How-ever, lemongrass oil has declined in commercial importance due to the competitive synthesis of citral and isolation of natural citral from Litsea cubeba oil.	Headache, increase perspiration, spasms, stomachache, high blood pressure, convulsions, hair-scalp problems, indigestion, pain, vomiting, scabies, rheumatism, muscles and joints, fever, cough, the common cold, exhaustion, colitis, nervous tension, stress, promote urination.

Continued: Annex3

Continued: Annex 3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
VALERIAN Valeriana officinalis	Banned for export without processing. Flavoring alcoholic beverages, beer, liquors and apple flavorings, chewing gum, spice blends, tobacco.	In perfum for its warm-woody, balsamic, musky odour. Synthetic bornyl isovalerate is available and can be used in the adulteration of valerian oils, but the characteristic sweetness and musky under-tone is obtainable only from the true oil.	antifungal, antimicrobial, anti-septic, antispasmodic, astringent, carminative, deodorant, diuretic, febrifuge, fungicidal, galactagogue, inflammation, nervine, sedative, scalp problems, tonic. Insect repellent. Oil burner, diffuser, or vaporizer.	Migraine, insomnia and overall sleep problems, nervous tension, stress, uterine cramps, muscle tensions, menstrual agitation, dysmenorrhoea, rheumatic pain, restlessness.
GENTIAN Neopricorhiza scroph	Endangered plant. Banned for collection and export!	Endangered plant.	Endangered plant. Root, also known as kutki benefits overall health and substitute for Indian gentian (Gentiana kurroo) Therapeutic properties: antibacterial, anti-inflammatory, stomachic, strong laxative, antiperiodic, antioxidant, anticholestatic, hepatoprotective, decongestant, dyspepsia, emmenagogue, immunostimulant, respiratorial, emetic, abortifacient, cancer protective properties, epilepsy, antivenin. Picrorhiza is a mandatory ingredient	Endangered plant. Skin diseases, indigestion, constipation, fever, diarrhea, bronchial asthma, liver disorders (liver detox, cirrhosis, jaundice, hepatitis), infections, epilepsy, malaria, rheumatoid arthritis, scorpion stings and snake bites.

Continued: Annex 3

Continued: Annex 3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
TURMERIC Curcuma longa Spices	Indian saffron for food coloring, Flavoring curries (curry powder), rice, chutneys, soups, sauces, alcoholic beverages, baked goods, condiments, relishes, egg products, fats oils, gravies, meat products, nut products, processed vegetables.	Warm, spicy woody and camphorous odour. Many skin care formulas to look younger, anti-aging, because antioxidant and anti-inflammatory activity. Skin care products to scitimize eczema, wrinkles, pigmentation of skin, pimples, acne, psoriasis, cuts, burns and other skin infections. Facial moisturizer-treatment, body wash-cleans-er, eye cream, shampoo, sunscreen, sunless tanning, baby soap. Essential oil seems to have failed to catch the interest of most perfumers and flavorists.	for protecting the liver against the cumulative assaults of daily life! Therapeutic properties: anticarcinogenic, anti-in-flammatory, antispasmodic, antioxidant, anti-allergic, antibacterial, anti-arthritis, antimicrobial, antifungal, anti-parasitic, antiseptic, antiviral, antiworm, anorexia, aphrodisiac, amnesia, astringent, cardiac, colic, digestive, diuretic, dyspepsia, stimulant, carminative, stomachic, stimulant, tonic, vulnerary, antivenin. Antioxidants in turmeric protect the brain, kid-neys, and liver from damage by alcohol, drugs, radiation, heavy metals and chemicals. Potpourris, vaporizers, candles or diffusers.	Blood circulation, respiration, flatulent colic, indigestion, nutritive, appetizer, eczema, cardiac disorders, menstrual flow, cramps, amenorrhea-abdominal pain, rheumatic pain, sprain swelling, aphrodisiac, gastrointestinal upsets, anti-cancer properties, preventing hair loss and amazingly a cure for amnesia
CARDAMOM Amomum subulatum Spices	Flavoring garam massala for curries, hearty meat stews and similar dishes, dal, soups, tandoors and vegetable dishes, beverages, confectioneries, sweets, rice pudding, tea and even coffee. Sometimes used by large-scale commercial bakers because it is much cheaper dan green cardamom. Spice is hardly known to the American housewife.	Smoky and earthy in flavour. It is full of antioxidants, vitamin C and essential mineral potassium for a firm, toned and youthful look and fairer skin complexion.	Therapeutic properties: diuretic, gastro-intestinal, cardiovascular, respiratory, oral, urinary, carminative, anticarcinogenic, detoxification, anaesthetic, antiseptic, antibacterial, antiviral, anti-oxidant, immunostimulant, sedative, aphrodisiac. Anticarcinogenic properties: There are two antioxidants named 3'-Diindolylmethane (DIM) and Indole-3-Carbinol (I3C) which combat breast, colon, prostate and ovarian cancer.	Stimulate the gastric and intestinal glands, stomach acids, constipation, appetizer, cramps, cardiac rhythm, respiratory troubles (asthma, whooping cough, lung congestions, bronchitis, pulmonary tuberculosis etc), teeth infection, bad breath, facilitate urination, renal system, detoxifier, prevents growth of cancerous cells, headache, contact dermatitis' or skin allergy, nourish hair and scalp.

Continued: Annex 3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
SWEET FLAG Acorus calamus	Used in small quantities in alcoholic beverage industry (e.g. absinthe). Use is legally restricted because of potential toxicity of basarone. Dried and powdered rhizome has been used as a substitute for ginger, cinnamon and nutmeg essence. Spice blends, chewing gum. Flavoring pipe tobacco.	Used in perfumes of the spicey-woody and oriental type. Fragrances in hair powders and mouth washes. However, oils from fresh roots are interesting for a wider field of applications for the perfumer and the flavorist.	Therapeutic properties: anticonvulsant, antiseptic, carminative, diaphoretic, expectorant, hypertensive, antispasmodic, stomachic, stimulant, relaxant, mildly tonic, vermifugal, anodyne, aphrodisiac, carminative, emmenagogue, febrifuge, hallucinogenic, hypotensive, sedative, dyspepsia, antioxidant, antimicrobial, insecticide. Chewing the rootstock of the plant can cause visual hallucinations. In modern Egypte it is thought to have aphrodisiac properties.	Digestive complaints, bronchitis, sinusitis, appetizer, skin eruptions, rheumatic pains, neuralgia. However if the dose is too large it will cause nausea vomiting and mild hallucinations!
YARSHAGUMBA Ophiocordyceps sinensis	The yarsagumba gold rush has bought a curse of greed and banditry to remote mountain regions. Year after year during harvesting season, the Himalayas are rocked by resource conflict, robberies, and even murders. Overharvesting, coupled with lack of regulation and investment into sustainable management, has experts concerned about the future of this unique medicinal fusion. 2014 - Locally in Nepal, harvesters get the equivalent of about \$18 per gram (a single dried specimen weighs less than half a gram). But by the time yarsagumba is sold in China, the major international trade		It regulates the normal functioning of various part of the body and strengthens the immune and circulatory system. It has traditionally been used for impotence, backache and to increase sperm and blood production. Therapeutic properties: stimulant, tonic, immu-nostimulant, aphrodisiac, infertility, sexually, analgesic, respiratory, prevents tumor activity, antibacterial, antiviral, insomnia, sedative, nocturia, circulatory, anemia, cardiovascular, allergies, vitality, controls organs (liver, kidney, lungs), arthritis, mentally. Neutralizes side effects caused by	

Continued: Annex3

Continued: Annex3

	FOOD INDUSTRY	COSMETIC & PERFUM INDUSTRY	PHARMACEUTIC & OTHER INDUSTRY	AROMA THERAPY
	<p>destination, it's worth as much as \$100 per gram. Gram for gram, that makes it more expensive than gold. The global market value has been assessed at between \$5 and \$11 billion.</p> <p>The government now earns substantial revenue of about 5.1 million rupees from the trade, according to the International Centre for Integrated Mountain Development (ICIMOD).</p>		<p>radiotherapy and chemotherapy. Protects against free radical damage and oxidative stress, thus slows down the effect of aging.</p>	

Source: VISSERS / SEARCE 2016

ANNEX 4 POSSIBLE ESSENTIAL

**ANNEX 4
POSSIBLE ESSENTIAL OILS
USED FOR PERFUMES**

WEST INDIAN SANDALWOOD

• *Amyris balsamifera* L. • wood • Haiti
soft and sweet woody note, near Sandalwood •
background note

ANISE • *Pimpinella anisum* • seeds • Spain
aniseed aromatic notes, fresh and sweet • top note /
heart

STYRAX BENZOIN / gum benzoin absolute • *Styrax*
benzoin • softwood balm • Indonesia
sweet note, powdery, balsamic, vanilla to almondy
accents • background note

CEDARWOOD • *Cedrus Atlantica* • wood • Morocco
note woody, sweet, heavy, animale • background
note

CEDARWOOD VIRGINIA • *Juniperus virginiana* •
wood • U.S.A.
note woody, soft and fresh, evoking the pencil
taillure • background note

ROSEWOOD • *Aniba rosaeodora* • wood • Brazil
fresh aromatic notes, floral, sweet and woody • top
note / heart

SANDALWOOD • *Santalum album* • wood • New
Caledonia
note woody, sweet, heavy, oily • background note

CARDAMOM • *Elettaria cardamomum* • Fruit •
Guatemala
spicy, fresh, camphor and balsamique • heart note

LEMON • *Citrus limonum* • zest • Italy
fresh notes, citrus (Citrus) • top note

CLOVE • *Eugenia caryophyllus* • nails / sheet •
Madagascar
hot and spicy sweet • heart note

CORIANDER • *Coriandrum sativum* • seeds • Russia
spicy notes, warm and flowery • heart note

INCENSE, FRANKINCENSE • *Boswellia carterii* •
Oleoresin gum • Somalia mineral
notes, peppery, resin-coated • background note

EUCALYPTUS RADIATA • *Eucalyptus radiata* • leaves
• Australia
ustic aromatic notes (country freshness to character
camphor) • top note

TONKO BEAN Absolute • *Dipteryx odorata* Will. •
Beans • South America
notes of vanilla, sweet, balsamic, with chocolate
accents • background note

GERANIUM • *pelargonium graveolens* • leaves and
stems • Egypt
floral note, dew, lemon - heart note

JASMIN GRANDIFLORUM absolute • *Jasminum*
grandiflorum • flowers • Egypt
floral note 'white flowers', heady, animal • heart note

LAVENDER true • *Lavandula angustifolia* • flowers •
Provence / France
note rustic, fresh, floral, aromatic • top note / heart

LAVANDIN • *Lavandula hybrida Grosso* • Flowers •
France
note rustic, fresh, herbaceous, aromatic - top note /
heart

LIME • *Citrus aurantifolia* • zest • Mexico
citrus notes, green, evoking the delicious cola • top
note

MINT curly • *Mentha spicata* • stems and leaves •
China
fresh and sweet aromatic notes, referring to the
chewing gum • top note

PEPPERMINT • *Mentha piperita* • stems and leaves •
U.S.A.
aromatic note to the icy coolness • top note

MYRRH • *Commiphora myrrha* • resin • Somalia
note woody, balsamic, resinous, reminiscent humus •
background note

SPIKENARD/JATAMANSI • *Nardostachys jatamansi*
• rhizomes • India
note woody, fruity, hot and animal • background
note

NUTMEG • *Myristica fragrans* • fruits • Indonesia
note spicy, sweet and peppery • heart note

OPOPONAX / Opobalsam • *Commiphora glabrescens*
• resin • Somalia balsamic
notes, warm, amber, leathery • background note

ORANGE Sweet • *Citrus sinensis* • zest • Brazil
fresh and sweet citrus note • top note

GRAPEFRUIT • *Citrus paradisi* • fruits • Florida
note slightly bitter citrus fresh • top note

PATCHOULI • *Pogostemon cablin* • dry leaves • Indonesia
note wooded rich, deep, earthy • background note

BITTER ORANGE • *Citrus aurantium var. aurantium*
• leaves • Paraguay
fresh note, green, fruity, woody • top note

BALSAM FIR • *Abies balsamea* • needles and branches • Canada
woody, fresh, resin-coated and balsamic • background note

CLARY SAGE • *Salvia sclarea* • ground parts • France
Note rustic, aromatic, musky, amber • heart note / background

VANILLA absolute • *Vanilla planifolia* • pods • Madagascar
note sweet, vanilla, tasty and hot • background note

EXOTIC VERBENA • *Litsea cubeba* • fruits • China
Note tangy, fresh, citrée, fruity • top note / heart

VETIVER • *Vetiveria zizanoides* • roots • Haiti
note wooded rich, deep, earthy, fumed, sweet, lemony • heart note / background

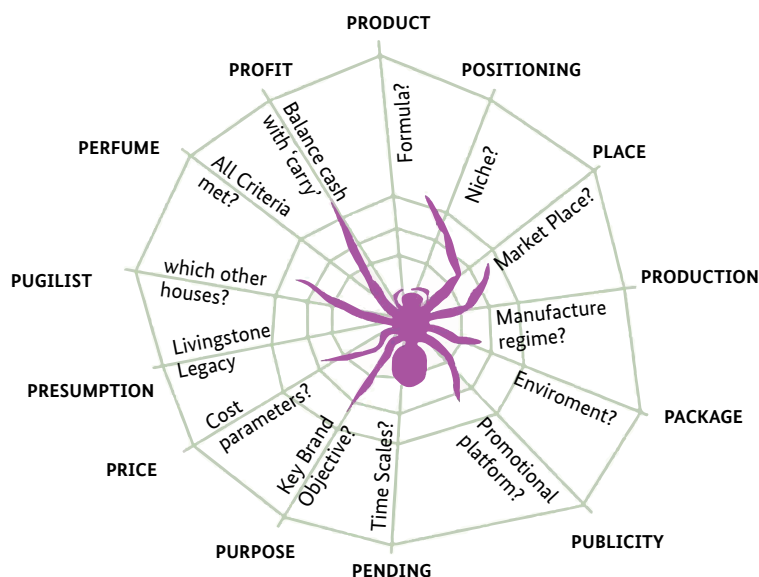
YLANG YLANG • *Cananga odorata* / complete distillation • flowers • Madagascar
floral note 'white flowers' sweet, voluptuous and animal • heart note



ANNEX 5 THE PERFUME

**ANNEX 5
THE PERFUME
BRIEF - THE 13 P's**

THE 13 'P' S THAT CONSTITUTE THE BUILDING BRICKS OF A SUBSTANTIAL FRAGRANCE BRIEF, WITH A GENERAL OUTLINE OF THE KEY THOUGHTS LINKED TO THEM.



PRODUCT	<p>What is the product formula?</p> <p>What chemical environment will the perfume face?</p> <p>Does the product have colour or any other physical characteristics such as base odour?</p> <p>Any special ingredients?</p>
POSITIONING	<p>What is the intended market position of the product?</p>
PLACE	<p>Is the product intended for the national, regional or global marketplace?</p>
PRODUCTION	<p>What production process will the product undergo, at what time and how will it be dosed?</p>
PACKAGE	<p>Can the packaging (e.g. aerosol can lining, soap wrapper) be affected by the nature of the fragrance?</p> <p>What colour will it be?</p> <p>Is there a design for the packaging?</p>
PUBLICITY	<p>Will other sensory cues be reinforced by the perfume?</p> <p>On what platform is the product to be promoted?</p> <p>Are there key words, such as smooth, gentle, caring, hardworking, that the perfume will need to evoke?</p>
PENDING	<p>What timescale does the brief have?</p> <p>If very short, perhaps a shelf product will suffice, if long term and a significant brief, market research may be feasible and a prerequisite.</p>
PURPOSE	<p>Is the product new or a range extension?</p> <p>What competition, if any, is it going up against?</p> <p>What is the key objective for the product?</p>
PRICE	<p>Cost per tonne finished product is a better focus than cost per kilo of product, as it gives flexibility on dosage. Keep within the parameters set (relevant to fragrances for functional products).</p>

PRESUMPTION	<p>Ensure you understand the nuances of the country. What does 'green' or 'fresh' mean in the context of the customer's requirements?</p> <p>Never presume anything about anything.</p>
PUGILIST	<p>Who are the competitive fragrance houses in the brief?</p> <p>What are their known strengths and weaknesses?</p>
PERFUME	<p>Does your final submission meet all the criteria above?</p> <p>If the customer mentions a fine fragrance by name does he or she really mean that particular brand or fragrance direction?</p> <p>Probe. How much fragrance is required for the brief testing?</p> <p>What regulations must the fragrance meet?</p>
PROFIT	<p>On submission, what margin (profit) suffices so that the winning of the business is worthwhile?</p>



ANNEX 6 CHEMISTRY AND RECOMMENDED ANNEX 6 CHEMISTRY AND RECOMMENDED QUALITY CONTROL

	CHEMISTRY	QUALITY CONTROL
TIMUR Zanthoxylum armatum	Linalool (up to 72%) Methyl cinnamate (10-19%) Limonene (6%) beta-Phellandrene	
MENTHA Mentha arvensis	Main components: (-)- Menthol (70-80%). Once distilled it should be a solid mass at room temperature, because of the high menthol content. To make it liquid it is necessary to dementholize it, reducing the amount of menthol to under 50% (usually 35-40%) Menthone Isomenthone Other important components (in Chinese cornmint) 3-Octanol Isopulegol Neoisopulegol cis-3-hexenyl isovalerate	
CINNAMON Cinnamomum tamala	Important to clarify what chemotypes are being produced. There are at least 2: cinnamaldehyde and eugenol.	
SPIKENARD Nardostachys jatamansi	Valerenal (1,2%)	Important to guarantee that the roots are not adulterated with roots of Cymbopogon schoenanthus and Selenium vaginatum
CHAMOMILE Matricaria chamomilla	Important compounds for the olfactory profile: Ethyl 2-methylbutyrate; methyl salicylate; 2-methoxy-4-methyl-phenol; indole	It would be paramount to specify which chemotype is being distilled: there are at least six: CT A: bisabolol oxide A 38-60% ■ CT B: bisabolol oxide B > 45% ■ CT C: a-bisabolol 45-60 % > a-bisabolol oxide B > a-bisabolol oxide A ■ CT D: a-bisabolol ≈ a-bisabolol oxide B ≈ a-bisabolol oxide A ■ CT E: a-bisabolone oxide A ■ CT F: very low in matricin Fundamental that the oil is protected from oxidation and direct light. Important to guarantee that it is not adulterated with oil from Artemisia
WINTERGREEN Gaultheria fragrantissima	95-98% methyl salicylate	Fundamental to ensure the oil is genuine and not synthetic methyl salicylate

Continued

	CHEMISTRY	QUALITY CONTROL
RODONDENDRON Rhododendron anthopogon	Important compounds for the olfactive profile: benzyl salicylate; benzyl benzoate; ethyl salicylate; geraniol; bet-phenylethyl alcohol	
GINGER Zingiber officinalis	Very important is the sesquiterpene fraction (20-30%; 50-70% in India). EO of indian origin is dominated by α - and β -zingiberene (50% up to 70%, but other oils might have 20 - 35%), and secondarily by ar-curcumen (5-7%, but can vary widely between 0.1% and 33%), beta-sesquiphellandrene (0-11%) and β -bisabolene (6-9%)	Important that it is distilled long enough to get the sesquiterpene fraction
CARDAMOM Amomum subulatum		
CITRONELLA Cymbopogon winterianus	Alcohol > 40% geraniol, citronellol (>15%), citronellal (35-55%)	
PALMAROSA Cymbopogon martinii	Alcohols (> 90%): linalool, geraniol (80-90%) nerol (25%), citronellol (tr.), p-mentha-1,8 (10)-dien-9-ol, farnesol (tr.) Other compounds: Geranyl and neryl formates, geranyl acetate, p-mentha-1,8 (10)-dien-9-yl acetate, geranyl butyrate and isobutyrate, geranyl and prenyl isovalerate, amyl, prenyl and geranyl hexanoate, prenyl e geranyl octanoate	Gingergrass (C. martini var. sofia) is a very common adulterant Others: turpentine, citronella and synthetic geraniol.
LEMONGRASS Cymbopogon flexuosus	Triciclene 0,16% α -pinene 0,21% Camphene 1,21% Methyl heptenone 2,14% Myrcene 0,08% N-octanal 0,15% Limonene 0,32% (Z)- β -ocimene 1,32%	Extremely cheap, not adulterated
VALERIAN Valeriana officinalis	Main component: (-)-bornyl acetate, plus other bornyl esters The main compound for aroma is: free isovaleric acid	

source: Marco Valussi (2016)

ANNEX 7 STANDARD FORMAT FOR BATCH

**ANNEX 7
STANDARD FORMAT FOR
BATCH CERTIFICATE
(EUROPAM)**

Proposed content of a batch certificate for medicinal and aromatic plants.**1. General information**

- 1.01. Product (commercial name)
- 1.02. Species (scientific name)
- 1.03. Plant part
- 1.04. Supplier
- 1.05. Batch number
- 1.06. Quantity
- 1.07. Cultivation or wild collection (if wild collection: permit required?)
- 1.08. Conventional or organic production
- 1.09. Origin (country and district)
- 1.10. Harvest year and harvest period

2. Cultivation

- 2.01. Irrigation (yes/no)
- 2.02. Fertilization (none/mineral/organic)
- 2.03. Plant protection products used (trade name/active substance)

3. Post-harvest processing

- 3.01. Washing (yes/no)

- 3.02. Freezing (yes/no)
- 3.03. Cutting (yes/no)
- 3.04. Distillation (yes/no)
- 3.05. Steam treatment (yes/no)
- 3.06. Irradiation (yes/no)
- 3.07. Drying (natural/artificial), if artificial name of combustible (direct heating only)
- 3.08. Fumigation (yes/no), if yes fumigant used
- 3.09. Separation procedures
- 3.10. Other post-harvest procedures
- 3.11. Packaging material
- 3.12. Storage conditions

4. Other comments**5. Compliance**

- 5.1. Production in compliance with GACP according to EMEA/HMPC/246816/2005? (yes/no/not applicable)
- 5.2. Name and position/title of person authorizing the batch release
- 5.3. Signature of person authorizing the batch release
- 5.4. Date of signature





COCO
EAU
DE PARFUM
CHANEL
PARIS

ANNEX 8 MAPs

International Market Study validation workshop

ANNEX 8

**MAPs International Market
Study validation workshop
(22nd of August 2016)**

WORKSHOP

After a presentation of the findings of the market study, questions & answers, a workshop was held with the participants from MAPs companies and from the Government Institutions and Associations.

The majority of the attendants were exporting companies of MAPs, Essential oils and some other natural food or cosmetic products.

The objective of the workshop was to develop a cluster or country-wise market entry strategy by the participating companies. The participants were divided by preferred export market 'clusters' i.e.

Cluster 1 for the USA

Cluster 2 for France & Germany

Cluster 3 for India & China.

Each group had to work out a very **basic export marketing strategy** by looking at the information given on panels

- Trends in the key market segments
- Opportunities for MAPs/Essential oils in each segment
- Market access requirements

Afterwards discuss within each cluster to answer eight questions. The participants received a synopsis of the market study prior to the workshop meeting.

Cluster 4 for Government Institutions, NGOs and Associations

The information and questions were related to export destination, quality improvement and infrastructure, encourage collaboration on all levels, increase the motivation, improve the assistance to companies and the future plans.

CLUSTER 4 - GOVERNMENT INSTITUTIONS NGOS AND ASSOCIATIONS



CLUSTER 1 - USA



CLUSTER 2 - FRANCE & GERMANY



CLUSTER 3 - CHINA & INDIA



THE THREE COMPANY CLUSTERS WERE DISCUSSING THE QUESTIONS BELOW FOR EACH MARKET:

QUESTIONS	USA CLUSTER 1	FRANCE & GERMANY CLUSTER 2	INDIA CLUSTER 3	CHINA CLUSTER 3
Why?	<ul style="list-style-type: none"> ■ Bigger & Attractive market ■ Easy communication & Dealing ■ USA prefer Nepali products ■ Customs facilities 	<ul style="list-style-type: none"> ■ Market promotion ■ Big perfumery producer ■ Introducing native products 	<ul style="list-style-type: none"> ■ Growing demand & quantity ■ Easy to communicate ■ Transport, Payment, Documentation ■ Quality issue is easy to handle 	<ul style="list-style-type: none"> ■ High demand & quantity ■ High prices for the procedures
Segments	<ul style="list-style-type: none"> ■ Flavour ■ Fragrance ■ Medicine 	<ul style="list-style-type: none"> ■ Flavour ■ Perfumery (fragr.) ■ Medicine 	<ul style="list-style-type: none"> ■ Medicine (herbal & traditional) ■ Flavour & Fragrance 	<ul style="list-style-type: none"> ■ Medicine (herbal & traditional)
MAPs (3)	<ul style="list-style-type: none"> ■ Yarshagumba (new) ■ Chiraito (new) 	<ul style="list-style-type: none"> ■ Ginger (new) ■ Phuhlvara butter/ Chiuri ■ Soap nut (new) 	<ul style="list-style-type: none"> ■ Timur ■ Chutro ■ Majito 	<ul style="list-style-type: none"> ■ Yarshagumba ■ Friilariae thunbergii ■ Satuwa
Ess. Oils (3)	<ul style="list-style-type: none"> ■ Lemongrass ■ Wintergreen ■ Jatamansi (new) ■ Ginger (new) ■ Timur (new) 	<ul style="list-style-type: none"> ■ Timur ■ Rhododendron anthopogon ■ Juniper 	<ul style="list-style-type: none"> ■ Jatamansi ■ Valerian ■ Sughanda kokila (Cinnamomum glaucescens) 	<ul style="list-style-type: none"> ■ Jatamansi ■ Wintergreen ■ Rhododendron anthopogon
Products Existing? New?	<ul style="list-style-type: none"> ■ See above 	<ul style="list-style-type: none"> ■ See above 	<ul style="list-style-type: none"> ■ Dietary supplement ■ Aromatherapy product ■ Import not allowed 	<ul style="list-style-type: none"> ■ Herbal drinks ■ Herbal soap (high quality) ■ Herbal cosmetics (such as Face packs)
USP Unique Selling Proposition	<ul style="list-style-type: none"> ■ Organic/Natural ■ Wild crafted ■ Competitive price 	<ul style="list-style-type: none"> ■ Small community based products ■ LAPA – Local Adaptation Plan of Action (added value) 	<ul style="list-style-type: none"> ■ Product from Himalaya ■ High quality & purity 	<ul style="list-style-type: none"> ■ Product from Himalaya ■ High quality & purity
Requirements (challenge)	<ul style="list-style-type: none"> ■ Meeting Buyers requirements ■ US Import regulations ■ Authentic certification (Certificate of origin) 	<ul style="list-style-type: none"> ■ Shipping ■ Laboratories ■ Unclear rules / regulations ■ Political instability 	<ul style="list-style-type: none"> ■ Transit permit ■ India Quarantine list of Nepal MAPs ■ Phyto-sanitary certificate refused by Indian government ■ Quarantine certificate rejected 	<ul style="list-style-type: none"> ■ Import permit needed by Chinese Govt. each product ■ High local development tax ■ Certificate for food supplements & Cosmetics
Other Challenges	<ul style="list-style-type: none"> ■ Quantity ■ Finding buyer (particip. Trade shows/Expo) ■ Cargo ■ Access to finance (payment, pre-financing) 	<ul style="list-style-type: none"> ■ Limited production ■ Documentation ■ Marketing or Promotion ■ Traceability ■ Harvesting (risks) 	<ul style="list-style-type: none"> ■ Lack of quantity due to wild harvest ■ Difficulty to reach right buyers 	<ul style="list-style-type: none"> ■ Lack of quantity due to wild harvest ■ Difficulty to reach right buyers

Continued

Continued

QUESTIONS	USA CLUSTER 1	FRANCE & GERMANY CLUSTER 2	INDIA CLUSTER 3	CHINA CLUSTER 3
Distribution Channels	<ul style="list-style-type: none"> ■ Buyer with smaller demand ■ Focus on special product ■ Company to Company 	<ul style="list-style-type: none"> ■ Indirect 	<ul style="list-style-type: none"> ■ Nepal trader → Indian product manufacturer ■ Indian Wholesaler/ Trader 	<ul style="list-style-type: none"> ■ Nepal Trader → Chinese Trader

THE PARTICIPANTS IN CLUSTER 4 WERE DISCUSSING THE QUESTIONS BELOW

QUESTIONS	GOVERNEMENT INSTITUTIONS / NGOS / ASSOCIATIONS CLUSTER 4
Country?	<ol style="list-style-type: none"> 1. China 2. USA 3. France 4. Germany 5. India
Segments	<ol style="list-style-type: none"> 1. Medicine 2. Flavour 3. Fragrance
Production	<ul style="list-style-type: none"> ■ Commercial cultivation ■ Input support / training ■ Sustainable forest management
Quality Infrastructure	<ul style="list-style-type: none"> ■ Follow GAP / GCP in the field ■ Quarantine certificate (HS Code) ■ Accreditation of Laboratory is in process (SPS / Toxicity)
Value Chain collaboration	<ul style="list-style-type: none"> ■ Capacity development / Training / Awareness ■ Producers / Collectors / FECOFUN / Cooperatives ■ Trader → Backward & Forward linkages (Price / Market / Buyer identify / Distribution channel / TREND)
Requirements	<ul style="list-style-type: none"> ■ GCP / GAP ■ Organic certification ■ MRLs ■ MSDs ■ Collective brands ■ Make awareness fund to get these certifications from GIZ (?)
Institutional capacity	<ul style="list-style-type: none"> ■ Train / Capacity stakeholders ■ Insurance ■ Assurance of the market ■ GAP / GCP - training ■ Royalty to be reviewed ■ Trade facilitation ■ Remove hurdles in policy
Motivation (smooth procedures)	<ul style="list-style-type: none"> ■ HRD not untraded ■ No support in capacity

Continued

Continued

QUESTIONS	GOVERNEMENT INSTITUTIONS / NGOS / ASSOCIATIONS CLUSTER 4
	<ul style="list-style-type: none"> ■ Lack of coordination by stakeholders and Agency ■ Lack of involvement in policy making with CFUG / CSU ■ Inconsistent policy
Future Plan	<ul style="list-style-type: none"> ■ Link the programs by linking: <ul style="list-style-type: none"> - Market - Producer / Farmers - Sustainable MAPs management - Policy / Strategy

MAIN OBSERVATIONS COMPANIES

GENERAL

- Number of people participating was high and there was much enthusiasm and lively discussions.
- Each cluster picked up very well on the suggestion to introduce typical MAPs / Essential Oils from Nepal in order to be distinctive from India.
- There was no mood of competition between participants within each cluster.

ANSWERS TO THE QUESTIONS

- Structured approach and questions were well understood. However, especially Cluster 1 and 2, who were mainly young entrepreneurs, did not use the suggestions on the three opportunity sheets very well. They answered the questions based on their own situation – but did not add extra ideas that could be derived from the sheets. During the 10 minute presentations of the answers, group leaders did not precisely explained in which application the MAPs/Essential oils could be used and in which key segment. The product/market combinations should have been indicated more precisely. Now, they were too broad.

MARKETING IMPROVEMENT AND BUYER IDENTIFICATION

- The understanding of 'Marketing' was still not clear by all companies (Marketing is NOT Promotion).
- Market size and growth were main criteria to choose a country rather than specific market

segment or market niche.

- Finding the right buyer is a problem, which illustrates a lack of a targeted marketing strategy.
- The USPs (Unique Selling Proposition) mentioned were from perspective of Nepal or from the product (e.g. high quality, pure product). The USPs were not customer oriented being the basic principle of Marketing.

EXPORT MARKETS AND PRODUCTS

- In the Western countries – the flavour segment was mentioned first, followed by fragrance and afterwards pharmaceutical (Traditional/ Natural medicine including Aromatherapy). Timur, Rhododendron, Jatamansi, Ginger and Wintergreen were the main essential oils mentioned. While Ginger (whole), Chiuri and Soapnut were the main commodities mentioned for France and Germany.
- In India/China the Medicine segment was mentioned with Timur, Chutro (*Berberis aristata*) and Majito (*Rubia manjith*) as the best three MAPs for India, and Yarshagumba, *Fritilariae thunbergii* and Satuwa (*Paris polyphylla*) as best three MAPs for China. Jatamansi was mentioned as best essential oil to export to both India and China.
- Production capacity is still a problem, especially when targeting the Chinese market.



The USPs were not customer oriented being the basic principle of Marketing.

MARKET ACCESS REQUIREMENTS

- For exports to India, permit issues (transit), phytosanitary certificate and quarantine certificate are important constraints for Nepali companies.
- For China, import permits, certificates food supplements & cosmetics, high duties and taxes were main problems. Especially the necessity of high sales taxes (up to 40%) must be verified. This can be attributed to high corruptive practices in certain ports of entry.

From the resources used for the Chinese part of the market study such high tax rates were not mentioned. Besides Nepal is a Favoured Nation for the Chinese government. It depends on the port of entry and the degree of corruptive practices there.

- The difficulty to have good insight in Access requirements for the USA and especially for Europe is not surprising. The explanation of these requirement in the Market Study will give more insight in their necessity, relevance and how to deal with them. It will help companies to have a basic understanding for discussions with their trade partner.

DISTRIBUTION

- The preferred distribution channels were mostly Indirect – i.e. via agents, traders, whereas Cluster 1 (USA) was dealing direct with small companies. However, the tendency in export markets is to source direct from companies or cooperatives in developing countries. Therefore, Nepali companies should see this as an opportunity even if it required more effort to establish a business relation with e.g. a distiller or importer. Direct supply to the industries is difficult because larger quantities of a consistent quality are often required.

GOVERNMENT INSTITUTIONS/ NGOs / ASSOCIATIONS

EXPORT MARKETS

- The markets mentioned were: China, USA and afterwards France, Germany, India. But has Nepal the capacity to export to these big markets (China) considering all areas of improvement that are still needed?

GOOD INTENTIONS

- There are many ideas and good intentions mentioned especially:
- Follow GAP/GAC in the field as an important guideline towards cleaner cultivation, hygiene and quality control.
- Accreditation of the laboratory. Not all companies were aware of its existence.
- Stimulate collaboration among different actors in the value chain as well as between NGOs – including smaller NGOs having a close contact with cooperatives and CFUGs.
- Support for organic certification (grower group).
- Encourage commercial cultivation among famers combined with sustainable forest management. An idea could be to offer famers to lease land.
- To make all actors more aware about the most relevant market access requirements and doing trainings how to comply with them and how to organise their activity accordingly.

RECOMMENDATIONS AND NEXT STEPS

SECTOR DEVELOPMENT

- Further develop the processing of MAPs into essential oils to make the MAPs sector in Nepal more competitive by capitalizing on the opportunities in the five selected markets, especially in the USA and Chinese markets. Nepali companies could take the strict market access requirements in Germany and France as a challenge upgrade their export business. They should be able to demonstrate a mission statement that clearly contributes to job creation in Nepal, to an improvement in good agricultural and collection practices (GAP, GCP) and to more sustainability in the MAPs value chain. Besides, Nepali companies are advised to take a more customer-oriented approach by knowing the market and by anticipation, rather than being a supplier that sells on a customer request basis.
- Improvement of the quality of essential oils. Buyers in Western markets tend to stick to their current suppliers to minimize the variety in quality. The laboratory in Nepal will help companies to set standard methodologies to convince buyers that more is done on the quality control of essential oils. Nepali companies should

THE STUDY PROVIDES RECOMMENDATIONS TO COMPLY WITH THE STRICT MARKET ACCESS REQUIREMENTS, DEVELOP OPTIONS TO ACCESS THE FIVE SELECTED MARKETS, AND GIVES RECOMMENDATIONS FOR AN OVERALL GLOBAL MARKET ACCESS STRATEGY.

use the laboratory and this should be made more known to them, as currently some companies are not aware of its existence. By testing their essential oils, they can recognise the required chemistry (Annex 6), adulteration, mix of different essential oils, use of MAPs from different harvests, discrepancies with samples etc...Customers in Western markets will find out such practices as they test the essential oils regularly by an accredited laboratory in their own country. If Nepali companies cannot guarantee a consistency in quality, this means a competitive disadvantage, limited applications, limited shelf life and an inability to establish long-term relations with customers.

COMPANIES

■ Increase production capacity by collaboration.

This could be between Nepali companies - or between companies and (MAPs) cooperatives able to produce essential oils of export quality. Similarly in export markets processors/importers work together e.g. on a contract basis. Along with the trend of mergers and acquisitions, smaller processors choose to join forces to deal with larger orders to compete with large companies - or to deal with cartelling practices.

■ The other option for Nepali companies is to sell small quantities of high quality oils for small customers on an exclusive basis. In this case, quality control is crucial for success.

■ Attract foreign buyers for sustainable sourcing who have an extensive knowledge/experience in the MAPs sector and who can provide know how (production, planning, organisation etc...) and fair prices to farmers, collectors, local processors and companies. Arrangements can be made about quantities and price level e.g. for one year. The foreign buyer is sure about a source of supply and a lower price - dealing direct with partners

in Nepal. Besides, they can control the quality or they can use different quality levels (see Case Madagascar in Chapter 3.6) and provide good packaging materials (cans/drums).

Arrangements can be made by semi-processing in Nepal and final processing by the foreign company - similar as the partnership between HTBL and Nateva (DevelopPPP of GIZ). Large US companies such as Aveda, DoTerra, Young & Living, Greenland (Denmark) and others have co-sourcing partnerships in Nepal. The 'Doing good' philosophy and win-win arrangements for sustainability are a tendency among buyers. This offers an opportunity for Nepal being in an urgent need to recover from the earthquakes, fuel crises and being affected by climate change.

→ To invest in Nepal should be more promoted e.g. at trade shows, via NGOs and via contact with cooperative/sustainable banks in export markets e.g. OikoCredit, Triodos amongst others.

■ The Nepali companies should try to take a more consumer focussed approach through better understanding of the key segments. Companies in competing countries and most Western importers are already successful in this approach. It is a challenge to understand how the trends in each key segment can be translated into opportunities.

If they succeed to do so, companies can create more customer oriented solutions.

For example, in France there is a rise in taxation (VAT) on sweetened soft drinks while French people still want soft drinks with a sweet flavour. French manufacturers have to find (unknown) alternative flavours in their soft drink that provide a good taste. In this case, ginger, lemongrass, timur or chamomile could be interesting to promote to French manufacturers, flavour houses or distillers. In the promotion, health aspects could be shown and combinations with typical elements from

Nepal can be made e.g. Timur cultivated by small Nepali communities, used in dishes (momo, thukpa or chicken chilli) as well.

- **Identify niche markets in the Western markets**
e.g. the Veterinary market (well-being of animals), oils for scent diffusers (polluted cities in China, India), natural pesticides and also Rudraksha beads for Buddhist practitioners. Other niche markets can be found in alternative natural DIY household cleaning products (e.g. soapnuts) and in the industrial uses (see overview in figure 3, Chapter 1) e.g. paper, print, textiles, rubber, plastics, paints etc. Market access requirements might be less strict in the industrial market as the MAPs/Essential oils are not for products that are direct in contact with people's skin or used as ingredient in food for humans.
- **Identify the right trade partners.** Most Nepali companies are recommended to sell via the indirect trade channel, i.e. via traders or agents. They know well the situation in export markets,

especially in China, speak the language and have contacts there. It is a challenge to find the right/trustworthy agent/trader who can advise on how to deal with the extremely high sales tax, import permits, other access requirements, copying issues and marketing issues.

In Western markets, agents make their role more pronounced by specialising in good quality extraction techniques, offer innovative product portfolios or develop unique customised concentrations and blends together with industrial segments that operate in the higher end of the market. The applies to smaller specialised distillers who are looking for direct sourcing in developing countries. In this respect, both agent and distiller are interesting partners for Nepali companies to establish a long-term relationship. Nepali companies could also do selling direct to retailers or internet sellers, but it will take much time to deal with them. Sales to online sellers must be considered carefully as they ask for exclusivity



and can suddenly re-position to e.g. discount as the competition between online sellers in western market intensifies.

- **Nepali MAPs, Essential oils and Commodities** (e.g. Chiuri as alternative for Shea butter in skin care) **should be more visible in export markets** because it is not enough recognised. A clear positioning can be inspired on the different faces of Nepal (traditional use, advantages of 100% pure oils for health, multi-functional uses). There are still many unknown facts that are related to e.g. spirituality, Buddhism that are difficult to imitate by Indian companies.
- **Join forces** of companies and other stakeholder (government and banks) and organise **joint promotion at trade fairs**. China, Thailand, India, Taiwan, Vietnam and Indonesia e.g. have been successful in this respect. Proposals for a collective logo for the whole Nepali MAPs sector (as a joint promotion tool) should be considered. For example, 'Authentic healthy oils from mountains in Nepal' will contribute to a better recognition of the sector. This logo can be used at trade fairs. On the other hand, companies can continue to sell under their own brand/logo.



GOVERNMENT INSTITUTIONS/ NGOs / ASSOCIATIONS

- **Support to Nepali companies by trainings and information.** The governmental institutions, Donor agencies, International organisations like GIZ, Trade organisations, NGOs and Associations such as FECOFUN, JABAN, NEHHPA or other NGOs could (continue to) encourage companies by:

→ Giving companies and other actors in the value chain access to the information e.g. given in this market study (in Nepali) - possibly dividing this study in parts (e.g. by country).

→ Provide specific trainings tailored to each group. The more knowledge e.g. farmers/processors have, the more potential they see if they cultivate MAPs of a good quality. If they are better informed about (fair) prices, it will reinforce the farmers' role towards traders and middlemen.

→ Advise farmers to make samples that are more according to the actual situation.

→ Inform farmers about the dangers of using low cost or obsolete chemical pesticides (e.g. DDT) and not respecting instructions on the labels. Inform the risks for their own health, for their land and their children.

Encourage the use of botanical pesticides (e.g. Neem, Artemisia, Accrus calamus or others) and by rotation of crops or permaculture. If they switch to organic farming, the risk of too high MRLs will be lower and they can participate in an organic grower group for (future) organic certification. If they do the same for some of their other crops, they can make organic food available to tourists being a good opportunity to increase their income.

→ Provide incentive packages to farmers and companies (targeted approach).

→ Stimulate private financing to invest further in cultivation, processing and exports of MAPs and essential oils. Support could be also given by loans or micro-finance.

→ Smoothing and simplifying the administrative procedures, providing release permits and reduce payment of royalties for e.g. smaller companies or co-operatives.

→ Support in case an application by an organic growers group is done for organic certification (via Ecocert or One Cert).

THE STUDY PROVIDES RECOMMENDATIONS TO COMPLY WITH THE STRICT MARKET ACCESS REQUIREMENTS, DEVELOP OPTIONS TO ACCESS THE FIVE SELECTED MARKETS, AND GIVES RECOMMENDATIONS FOR AN OVERALL GLOBAL MARKET ACCESS STRATEGY.

- Provide training in marketing (with workshops) to Nepali companies supporting and encouraging them to take a customer-oriented approach and taking risks as an entrepreneur.
- Find out from the Indian government what the reason is behind the refusal of several certificates from Nepali companies. If this is based on a few exceptional cases, negotiations could be started up with the Indian government.
- Find out with the Chinese government what the issue is regarding sales tax (40%) and if this differs per entry point. Nepal is regarded as a MFN (Most Favoured Nation) with tax levels between 6% and 20%.
- The access of new MAPs or essential oils could be negotiated with the Chinese government.

■ Special assistance tools/incentives to famers and young entrepreneurs

- It will be necessary to assist all actors in the value chain to start with the farmers and to encourage young entrepreneurs who are positive to start an exporting business in Nepal.
- A definition of companies could be e.g. young entrepreneurs (or small companies) with less than 10 employees and exporting less than e.g. 5 tonnes of essential oils/year.
- If they are discouraged by payments of royalties, administrative procedures etc., there is still a flow of young people working in the Gulf States.
- Like in Western countries, the government must assist/help/advice young entrepreneurs as an instrument to reduce unemployment, having them staying in the country.

■ Moving the MAPs forward by organisation

- To realize the Good intentions mentioned by Cluster 4, an efficient MAPs sector organisation will be necessary. Important key questions to clarify are:
- How to organise these good intentions?
- Currently there are too many governmental organisations and NGOs, and much overlapping work seems to be done. Many different Ministries are involved in the MAPs sector, but little is shared between the institutions as well as between NGOs operating on different levels. All are working from different perspectives to improve the MAPs sector in Nepal.
- Joining forces would contribute to enhance sustainability in the MAPs sector all over in Nepal (West, Central and East). Currently there are still organisations that operate on their own vests. They should try to share more experiences and information to prevent double work.
- A central organisation or federation that can overlook all activities and give them structure within a given time frame.



- The role of a sector organisation for MAPs
 - i. Similar ‘umbrella organisations’ in other Asian countries represent common interests. In most Asian countries, they are proactive and act a ‘motor’ to develop a sector. This proved to be successful in China, Taiwan, Korea, Vietnam, Myanmar and Indonesia (see Case patchouli in Chapter 2.4). It should be possible in Nepal as there is already so much knowledge available. Such organisation also acts as a main entrance for foreign buyers/investors, governments to reach co-operations, Nepali companies, local associations or Nepali experts in the field.
 - ii. Most important goals of the MAPs organisation could be:
 - Providing access or consultation of the sources for quality seeds from duty-free areas.
 - Enhancing cultivation methods of MAPs and the distillation of essential oils.
 - Making farmers and collectors more aware about use of fresh/clean plants of similar harvests, proper storage, hygiene, planning, quality consistency and good communication as tools to establish long-term relationships with customers.
 - Encourage exporting companies to invest in clean production, clean storage and work closer with famers/collectors towards a common goal/customer.
 - Suggesting technical and organisational improvements through trainings (by mentor on the spot).
 - Supervising the quality control and continued pureness of essential oils (see Annex 6 for specifications).
 - Promoting the MAPs sector of Nepal (not of individual companies), under a common brand e.g. at trade fairs (large international or small local fairs).
 - iii. This organisation could be financed by several Governmental departments (MoC, DoF or other). Current Trade Associations are export oriented and some (partly) operate for their own profit. This umbrella organisation should operate and coordinate on a higher level than NEPPHA, JABAN or FECOFUN etc... It should be action driven rather than becoming a platform organisation for ongoing discussions.





ANNEX 9

Presentation of summary of countries and products during the core group meeting (6th of November 2015)

ANNEX 9

**Presentation of summary of
countries and products during
the core group meeting (6th
of November 2015)**

5. SUMMARY – COUNTRY SELECTION

	MAIN EXPORT	DESIRED MARKETS	WORLD IMPORTER	MARKET GROWTH	OPPORTUNITY CHALLENGE
MAPs					
1. India	4	4	Medium	High	Bulk (continued)
2. Pakistan	2		Small	High	Bulk (continued)
3. China	1	1	Large	High	Limited
ESSENTIAL OILS					
1. India	4	4	Medium	High	Ph, Cos, Fo
2. Japan	1	3	Large	Low	Ph, Cos
3. China	1	2	Large	Medium	Ph, Cos, Fo
4. USA	4	4	Large	High	Ph, Cos , Fo
5. Germany	2	5	Large	Medium	Ph, Cos
6. France	4	4	Large	Low	Cos
7. Spain	2	2	Large	Low	
8. UK	1	2	Large	Medium	Cos , Fo
9. Switzerland	1	1	Medium	Low	Ph, Cos
10. Netherlands	1	1	Small	Medium	
Other Singapore, Taiwan, Korea, Thailand, Vietnam, Pakistan Belgium, Czech Rep. , Denmark, Ireland, UEA			Large > 10% Medium 5 – 10% Low < 5%	Pharmaceutical and well being Food Cosmetics	

5. SUMMARY – PRODUCT SELECTION

MAPs	MAIN SPECIES	AREA NO. OF PRODUCERS (DISADVANTAGED)	AVAILABLE/ EUROPE	PRODUCTION	VALUE (PRICE)	MAIN APPLICATION FO, COS, PH
Priority (INMAPs)						
1. Timur	6	Mid West	191 (38)	Bul, D, Gr, I ,Rom	High	Fo
2. Mentha	5	Terrai			Medium	Fo, Cos, Ph
3. Asparagus	2	Mid West	516 (241)	D, Gr, UK	Medium	Fo, Ph
4. Cinnamon	5	Mid Hills			High	Fo, Cos
5. Chiuri	4	Terrai			Medium/High	Fo, Cos
6. Jatamansi	7	Mountains			High	Ph, Cos
7. Camomille	6	Terrai	429 (357)		Medium	Fo, Ph
8. Soapnut	3	Mid West			Medium	Cos, Ph
9. Wintergreen	4	Mountains			High	Cos, Fo, Ph
10. Rhodondend.	4	Mountains			High	Cos, Ph
11. Ginger	4	Terrai			Medium	Cos, Ph, Fo
Other Yarshagumba, Citronella, Kutki, Palmarosa, Lemongrass, Valerian Curcuma, Cardamom					Pharmaceutical and well being Food Cosmetics	

ANNEX 10 REFERENCES

GENERAL

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ANNEX 11

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LIST OF ABBREVIATIONS

List of Abbreviations

AFNOR	Association Française de Normalisation
APC	Advanced Payment Certificate
BB	Beauty Balm
BDIH	Bundesverband der Industrie- und Handelsunternehmen
BIP	Border Inspection Post
BPC	Beauty and Personal Care
BSCI	Business Social Compliance Initiative
CAD	Cash Against Documents
CAGR	Compound Annual Growth Rate
CBD	Convention on Biological Diversity
CC	Colour Control (cream)
CEO	Chief Executive Officer
CFDA	China Food and Drug Administration
C&F	Cost & Freight
CIF	Cost, Insurance, Freight
CIHEF	Interprofesional Committee of Essential oils in France
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMD	Chinese Medicine Division
CofA	Certificate of Analysis
DNB	Dun & Bradstreet (checking financial status of companies)
DomTom	Overseas territories of France
DSHEA	Dietary Supplement and Health Education Act
EC	European Commission
ECHA	European Chemical Agency (for REACH registration)
EFSA	European Food Agency
EMA	European Medical Agency
FAO	Food and Agriculture Organization of the United Nations
FDA	Food and Drug Administration (United States)
FD&C Act	US Food, Drug and Cosmetic Act
FLO	Fairtrade Labelling Organizations International
FOB	Free on Board
FW	Fair Wild
GACP	Good Agriculture and Collection Practices
GLOBALG.A.P.	The Global Partnership for Good Agricultural Practice
GMPs	Good Manufacturing Practices
GSP	General System of Preferences
HACCP	Hazard Analysis Critical Control Point
HIV	Human Immunodeficiency Virus
IFF	International Flavour and Fragrances (leading Flavour and Fragrance House in the world)
IOAS	International Organic Accreditation Service
ITC	International Trade Center
KPMG	Klynveld Peat Marwick Goerdele (International Consulting and Accounting Firm)
L/C	Letter of Credit
LLC	Limited Liability Company
LVMH	Louis Vuitton Moët Hennessy (French multinational of fashion, perfumery and drinks)
MAPs	Medicinal and Aromatic Plants
MFN rate	Most Favoured Nation rate (China)

MOFCOM	Ministry of Commerce of the People's Republic of China
MRLs	Maximum Residue Levels
MSDS	Material Safety Data Sheet
NBSAPs	National Biodiversity Strategies and Action Plans
NES	Not Exactly Specified
NOP	National Organic Program
NSSI	Natural Sourcing Sustainability Index
NTFPs	Non-Timber Forest Products
OGG	Group of Organic Growers
OTC	Over The Counter (medicines)
PAN	Permanent Account Number
PPP	Public Private Partnership
PTSD	Post-Traumatic Stress Disorder
QVC	Quality, Value, Convenience (Home shopping TV Channel)
RB	Reckitt Benckiser Plc (American pharmaceutical company)
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals (EU- regulation)
SCCP	Scientific Committee on Consumer Safety
TCM	Traditional Chinese Medicine
UAE	United Arab Emirates
UNEP	United Nations Environment Programme
UK	United Kingdom
USA	United States of America
USDA	United States Department of Agriculture
USP	Unique Selling Proposition
VAT	Value Added Tax

NATEVA



