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US Markets for Non-Traditional Natural Products



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iii. Executive Summary

This report serves as the second deliverable for the EthnoPharm subcontract with BAMEX. This report identifies non-traditional markets and approaches for expanding the market presence and market linkages for Malagasy products and producers. In line with BAMEX's objectives, this report aims to identify and promote creative, informed, and practical market-based approaches in order to introduce more productive business practices and techniques. As this is the second Deliverable scheduled for the EthnoPharm subcontract, this report, however, should be seen as an initial draft in building an action plan for reaching the non-traditional markets, which will be finalized for presentation to Malagasy producers by Deliverable 4, as specified by the EthnoPharm Scope of Work and Contract Modifications.

The cluster of spices that have been reviewed in this project for value-added opportunities in the non-traditional markets have their main high volume markets as bulk spices in the world's commodity markets. Those markets demand high volumes of low value, minimally processed raw materials. However, spices already are being used in the most developed world markets in a variety of processed forms that fill different high-value market channels, such as dietary supplements, functional foods, body care & cosmetics, and handicrafts. Thus, a key strategy for developing a variety of higher-value exports from Madagascar's spice industry is to focus on the core spices reviewed by this report, and then add strategic development partnerships in the key non-traditional markets, processing technologies, and direct and "fair deal" niche sustainability value additions to create higher value products as the core industry capacity develops.

In this report, we have analyzed the non-traditional markets for the cluster of Madagascar spices, cinnamon, cloves, ginger, geranium, ravintsara, and eucalyptus. Madagascar is already a producer of these spices, and poses the basic processing to feed into the world commodity spice market. With this report and after pursuing the proper strategic relationships appropriate for these spices, it may be possible to begin capturing the next value added layer of products from these core spices.

Our Market Plan

Our market plan is best summarized as a "three pronged" approach. First we will be looking for general distributors that can handle Madagascar essential oils, spices, possibly other botanicals, and handicrafts. We are specifically looking for the distributors that will make an effort or take a larger interest in Madagascar, and not just selling its products as commodity items. We may need as little as two distributors, and as many as four to cover the range of market channels we are interested in entering. The distributors that have the highest potential for covering the markets are Frontier Natural Products Co-Op, The Lebermuth Company Inc., RFI Ingredients, Pharmline, Lemur International, Tri-K Industries, Ecotrend, Trout Lake Farm, BDS Natural Products, and World of Good. These distributors are well positioned in the functional food, dietary supplement, cosmetic and skin care, as well as craft markets. Further negotiations are needed to narrow down this list or carve out areas of sales territories (or products) for effective promotion of the Malagasy products.

The "second pronged" approach is to develop direct relationships with large or established and innovative companies that might be interested in developing a "Madagascar-themed" product line. An example of this might be a line of Aveda body care and cosmetics that features Malagasy essential oils and tells the story of Madagascar and the sustainable promotion of its products. Examples of companies that fit this approach are Aveda or Estée Lauder, Access Business Group (Nutrilite and Amway), Frontier Natural Products Co-Op (through Simply Organics or Aura Cacia), Aubrey Organics, GNC, Whole Foods (introduce a branded line of functional spices and essential oils), Williams Sonoma, Exalted Extracts, and Threshold Enterprises. Negotiations with these companies are in very early stages, and will need more time to develop. However, they may need to be identified before we decide on distributors, so that we can carve these accounts out of the territory of the distributors.

The "third pronged" approach is what I have been referring to as developing "fair deal" or direct-to-community relationships. The idea is to find smaller companies or product innovators in the natural products and handicrafts industry and help them to make direct relationships with a community (or more than one) from

Madagascar that is similar to Fair-trade (provides higher prices or living wages to farmers or suppliers), and/or may provide other socioeconomic benefits to the community (such as building roads, schools, etc). This is becoming a popular marketing strategy in the U.S. that can also help to alleviate poverty and possibly create longer-term (rather than those based on price) relationships than the usual supplier relationship. An added benefit is that the larger consuming public may become educated and the awareness of Madagascar may increase, helping other sectors of business. An example of a company that has done this successfully is HonesTea, who support a South African community with their ready to drink (RTD) iced teas. Other companies that may have similar interests are Traditional Medicinals, HerbPharm, Young Living Essential Oils, and World of Good.

Product Focus Recommendations

Along with the three-pronged approach to developing relationships for the market expansion of Malagasy spices and essential oils into the US market, there may be a three-pronged approach to the types of products that are promoted that are able to bring the biggest market response over the most sustained period of time. First, the natural products market is always interested in new and innovative products, especially those that are backed by clinical research. The recent studies on cinnamon make it a good candidate for promotion for Madagascar. Other botanicals from traditional medicine in Madagascar are interesting, but they need to have benefit share relationships clearly developed as well. One strategy for promoting these types of botanicals is to develop relationships between Madagascar medicinal plant research institutions, such as the Institut Malgache de Recherches Appliquees, and companies from the natural products markets. These kinds of partnership relationships offer a tremendous amount of promise for the development of products and benefit sharing. Companies receive basic research they can further develop; they qualify and develop their suppliers; they move closer toward vertical integration; and they enjoy the marketing/promotional benefits of investing in social programs. There are many companies that have interest in these kinds of programs; one that has not been mentioned previously in this report is Pharmanex.

A 'second-pronged' approach to focusing on products for the market expansion into the non-traditional markets is to promote spices that have some perceived level of higher value. This includes organically certified spices, Fair-trade certification, and spices that are produced by communities can create "fair-deal" relationships. Examples of companies that would be interested in these types of products are Forest Trade, Essential Living Foods, Frontier Natural Products Co-Op, Trout Lake Farm, World of Good and EcoTrend.

Another general 'third-pronged' approach to focusing on products for the market expansion into the non-traditional markets is to promote essential oils with higher perceived value. Examples include organic, and "fair-deal" or community supporting relationships. Additionally, as Madagascar is known for its high quality vanilla, there seems to be a higher value perception of its essential oils. Cosmetic companies, such as Aveda, Simply Organics, and Aura Cacia, might be interested in these general types of products.

Specifically for Deliverable 2, we were asked to give our recommendations of the specific products that seem to have the highest market potential so that the supply could be organized to meet demand.

The product we identified with the highest potential for the dietary supplement/functional food industries is a cinnamon extract or cinnamon powder that is specifically manufactured for its potential blood sugar normalization, anti-inflammatory, and cholesterol reducing benefits. Cinnamon powder may not provide value-addition benefits unless it is organic or some other kind of perceived higher value (like coming from a community-supporting situation). However, recent research has identified polyphenol polymers in Cinnamon that may provide value-added benefits, as well as catering to customers that want a more processed product.

Similarly, Vanilla, Ginger and Cloves have tremendous potential for development as nutraceutical and cosmeceutical ingredients as recent research indicates a wide range of potential uses. Though these species are not endemic to Madagascar, Madagascar is a significant producer of these spice herbs and more

importantly, seems to have specific varieties or cultivars of these species that may have specific nutritional, flavor or other characteristics not available in other regions of the world.

Since Madagascar features such a high number of endemic botanical species and a rich herbal tradition, one can easily imagine that there are many potential botanicals that can be developed for some economic and/or nutritional value. The Rosie Periwinkle is a wonderful example of such a plant. Another excellent example is *Centella asiatica*, where there is an existing body of research and existing sources of supply and manufacture in Madagascar.

The essential oil products with the highest market demand currently or potential for market development are: Ravintsara leaf, Citriodora, Calopyllum inophyllum, Wild Orange Petit Grains (*Citrus aurantifolia*); and secondarily, Cinnamomum fragrans, niaouli, Lantana camara, ylang ylang, Cinnamomum zeylanicum leaf and bark, Ginger (fresh pressed oil), Clove bud, and Katrafay (*Cedrelopsis grevei*). The table below summarizes these recommendations and includes prices.

In conducting this research, we found quality concerns for a few of these products. One significant quality issue is adulteration. Ravintsara, for example, is said to be routinely adulterated or "cut" (mixed) due to its high price and low availability. Therefore, quality measures to make sure the Ravintsara and other essential oils are pure are needed. Additionally, Madagascar Ravintsara oil has an advantage over the Ravintsara produced by other countries like China because that which is produced in the highlands of Madagascar has been found to be free of camphor (a controlled substance). Therefore, the Ravintsara from the highlands should not be confused with or mixed with that coming from the lowland coastal areas. The "Tamanu" oil (*Calopyllum inophyllum*) produced from Madagascar has an advantage over that produced in Fiji or Vanuatu. However, cleaning of the fruits was found to be a common malpractice, and a cleaner product would result in better oil for export. It would be wise to consider development of producer/grower associations or collectives that are aimed at developing quality, manufacturing and marketing practices. One important criterion for any potential supply partnership will be the development of quality practices, as Madagascar has the reputation of having wonderful raw materials but underdeveloped manufacturing and quality practices.

The packaging for the wholesale of essential oil products that seems optimal is to be shipped in 25 or 30-liter (25 kilogram) polypropylene drums, inserted into a cardboard box (for durability during shipping). Upon interview of a local manufacturer, these drums have been found to be able to be stacked 2 high on a pallet and shrink-wrapped. Botanicals extracts are typically packed in double poly bags, in fiber drums, that range in size from 25 to 50 kg. Extracts may also be packed in thicker, food grade boxes, if fiber drums are unavailable. Bulk botanicals can be packed in sacks, but special attention should be placed on packaging materials and practices to prevent potential adulteration of the product with foreign objects (packaging materials, metals, etc), insects or animals, waste products or other impurities. Recently, new regulations are being introduced that limit the trade of consumable products packed in wooden crates, boxes or frames. This is due to the possible risk of contamination brought on by untreated or exposed wood coming from unknown places.

Report Organization Annotation

The report is divided into 6 main sections as follows:

Section 1.0 Markets Size and Characteristics

The report begins by dividing, detailing and explaining the differences between the various key non-traditional markets within the U.S. Natural Product industry. For the purpose of this report, these have been identified as the dietary supplement market, the functional foods market, the body care & cosmetics market, the sustainability markets, and handicrafts.

Section 2.0 Non-Traditional Markets Supply Chain

In order to understand strategies in developing successful value-added products, there needs to be a thorough understanding of the various steps in the supply chain. This section outlines the supply chain and manufacturing processes in order to clearly illustrate these value addition processes.

Section 3.0 Market Opportunity Assessments by Spice/EO

In order to clearly understand the challenges and opportunities for Malagasy products in the non-traditional markets, strength, weakness, opportunity and threat (SWOT) assessments were made for each of the Malagasy products in the priority cluster of essential oils and spices by industry.

Section 4.0 Public Relations for the Natural Product & Non-Traditional Markets

The rational, approach and initial successes to public relations has been presented for taking advantage of the recent *Madagascar* movie release, as well as creating a “media buzz” for the uniqueness and potential environmental and social benefits of Malagasy spices and essential oils.

Section 5.0 Initial Contacts with Manufacturers/Distributors

A serious effort has been launched in introducing Malagasy products and beginning discussions with manufacturers and distributors in the non-traditional natural product markets for assessment of their interest. A chart detailing many of the interactions has been included in this section, and it is expected to serve as a tracking device for us as we progress throughout this project. A more detailed and updated chart will be turned in at every deliverable date.

Section 6.0 Appendices

There will be many documents and resources that we want to share with Malagasy producers, many of which will be included in the Appendix. These will include examples of typical supplier qualification forms that companies in the non-traditional markets require, as well as specification and certificate of analysis forms.

1.0 Markets Size and Characteristics

1.0.1 Division of Natural Product Markets for Understanding of Size & Characteristics

In order to gain a better understanding of the opportunity for value-added product development of the cluster of spices and essential oils from Madagascar for the U.S. market, the distinct market channels and their characteristics and requirements are reviewed by this report. Therefore the natural product markets have been divided into the Dietary Supplement market (see Section 1.1), the Functional Food market (see Section 1.2), the Body Care & Cosmetic market (see Section 1.3), the Sustainability markets (see Section 1.4), and the Handicrafts market (see section 1.5).

1.0.2 Regulations, Standards & Certifications

While each industry has different standards and certification requirements, certain standards, regulations and certifications are similar for all the markets covered in this report. Therefore, the Standards & Certification sections for each market is prefaced with this more general discussion on the requirements for companies and organizations trading to the United States.

Most of the products covered in this report (except for the crafts products) are covered by a group of laws known as the Food, Drug and Cosmetics Act, DSHEA - Dietary Supplement Health and Education Act of 1994, and the Bio Terrorism Act of 2002. The agency charged with enforcement of this group of legislation is the FDA (Food and Drug Administration). The group of laws under the purview of the FDA is known as CFR (Code of Federal Regulations) Title 21. The product presentations that are specific to the dietary supplement or herbal medicines market in the US fit exclusively under this regulation. However, as many of the spices and essential oils (as flavors) are in fact foods, when they are presented in functional food or food ingredient products, they will be covered exclusively by the food laws.

Similarly, the USDA (US Department of Agriculture) is responsible for oversight of farm products, agricultural commodities, and basic food products. Along with the USDA, the Justice Department through the ATF (Bureau of Alcohol, Tobacco, Firearms and Explosives) and the Treasury Department, through the ITDS (International Trade Data System) have important trade functions.

These agencies establish the standards for federal oversight of regulations and laws as well as determine federal guidelines for standards and certifications. Please visit **Appendix A** for a resource list of Internet Links for governmental agencies, associations, and organizations promoting standards and certifications. The list of links are intended to help serve Malagasy suppliers and manufacturers as a means of traveling through the complex web of regulations, standards and certifications associated with trade to the United States.

All products being exported to the United States must conform to the standards set by the regulatory agencies listed herein. In addition, all manufacturers and exporters must be registered with the FDA under the Bio Terrorism Act. The FDA must be notified of all shipments, including their content, prior to entering onto American soil.

Raw materials coming from agricultural production, wild-harvesting or from other minimally processed sources (see **Section 2.0** Supply Chain), must meet certain minimum standards, such as for botanical identity, cleanliness, and purity. Every attempt should be made to ship products that are clean, free of impurities (i.e. bugs, debris, dirt, metal, animal waste), properly handled, packaged and stored in such a manner that product quality and safety are maintained. These standards should be met from time of growth or harvest through shipment. Certain standards are required by regulations, and others are “industry standards,” as they are common practice and now required for conducting business with U.S. companies due to usual business practices. **Appendix B** provides a sample Raw Materials Questionnaire and **Appendix C** contains a sample raw material specification sheet. Many of the techniques and infrastructure employed for ensuring these standards can be installed easily, with little investment of time or resource and with relatively little training of personnel.

Products that are processed, such as extracts, require additional quality control, standards and certifications. **Appendix C** contains a sample powdered extract specification sheet in order to aid in the comparison of minimally processed raw materials to more processed forms, such as extracts. In order to aid the understanding of the different steps of manufacturing and levels of processing, **Section 2.0** contains a sample Process Flow Chart for manufacture of botanical extracts.

Below is a list of criteria often required in Specification Sheets and other quality control documentation:

1. Botanical Identity
2. Physical Characteristics
3. Chemical Characteristics
4. Identification of Marker Compounds
5. Microbiology
6. Heavy Metals Screening
7. Pesticide and Adulterant Screening
8. Traceability of Process and quality control

These are among the various requirements many U.S. companies require of their suppliers. Above and beyond the specification sheet, it is common for companies trading in natural products to require their suppliers to provide detailed information regarding their cultivation or harvesting, quality control, handling, regulatory compliance and other practices. Below is a list of documents commonly required by US companies:

1. Specification Sheet
2. Questionnaire
3. Lot specific Certificate of Analysis that matches Specification Sheet
4. MSDS (Material Safety Data Sheet)
5. Form A – Country of Origin
6. Certifications
 - a. Phytosanitary Certificate
 - b. Organic
 - c. Kosher
 - d. ISO 9000 series
 - e. ISO 14000 series
 - f. Sustainability (i.e. Fair Trade, PETA – no animal testing)

There are many documents exporters need to provide to satisfy regulatory and customer requirements. Shipments to the U.S. should come with a range of documents to satisfy regulatory scrutiny. These documents may include Form A and Phytosanitary Certificate. The Form A (Country of Origin) is a statement of where the products are made or originate from. Please see a sample of a Form A (Certificate of Origin) at: <http://www.export911.com/e911/export/docFormA.htm#docFormA>.

Likewise the Phytosanitary Certificate is a document from a foreign Health Department (in this case from Madagascar) stating the product being exported is clean and free from major contaminants, adulterants and impurities. The USDA does not require a Phytosanitary Certificate in most cases, but certain states within the United States do have this requirement. Please see the site of the Animal and Plant Health Inspection Service (APHIS), a division of the USDA at: <http://www.aphis.usda.gov/lpa/about/welcome.html> for more information on the requirements from a federal and state level.

The other certifications are not typically federal or state requirements in the US. Organic certification is regulated by the US government (NOP - National Organic Program), and the government accredits the individual certifiers. Kosher certification is not regulated or defined by the US government, rather the standards are established by the different certifying and accrediting bodies. No website links for Kosher

certification are included as there are many certifiers and inclusion of one or the other might seem an endorsement.

ISO (International Organization for Standards - <http://www.iso.org/iso/en/ISOOnline.frontpage>) is the largest organization for development of standards in the world. It is comprised of national standards from 151 countries and establishes standards and certification programs for a variety of different purposes. Certification by ISO 9000 series standards (GMPs) or ISO 14000 series standards (Environmental) is considered a highly difficult undertaking but one that is often rewarded with considerable credibility. There are also no federal or state requirements regarding sustainability, though many non-governmental and non-profit organizations do offer certification programs.

The issue of Product Liability Insurance and whether exporting firms must carry such insurance in the US is often discussed. Most US insurance companies will not insure a producer supplier in another country. The issue of liability is mostly dealt with in Supply Agreements. There is no current regulation or required practice for foreign companies to have such insurance in the US. It makes good business sense for a supplier to comply with their own federal and local laws, and to have sufficient insurance as to cover any potential liability.

1.0.3 Sales Cycles

Just as it takes time to grow and prepare natural products, it also takes time to develop a solid sales infrastructure. Sales are dependent on many different factors. One important factor is regarding quality of product and the associated manufacturing and handling standards employed. Other factors include price, availability, contract, and customer relationships. An often times overseen factor, especially when the products traded become like commodities, is how products can be differentiated and therefore have value-added. The non-traditional markets (Dietary Supplement, Functional Food, Body Care & Cosmetic, Sustainability and Handicrafts) have the potential for creating greater aggregated value for products especially if the products can be differentiated from competitor products. The means for differentiation are through some quality standard, botanical or raw material quality, analytical capacity, marketing or PR (Public Relations) capacity, certification or accreditation of the product, development of a good story (environmental, social or anthropologic) and/or intellectual property.

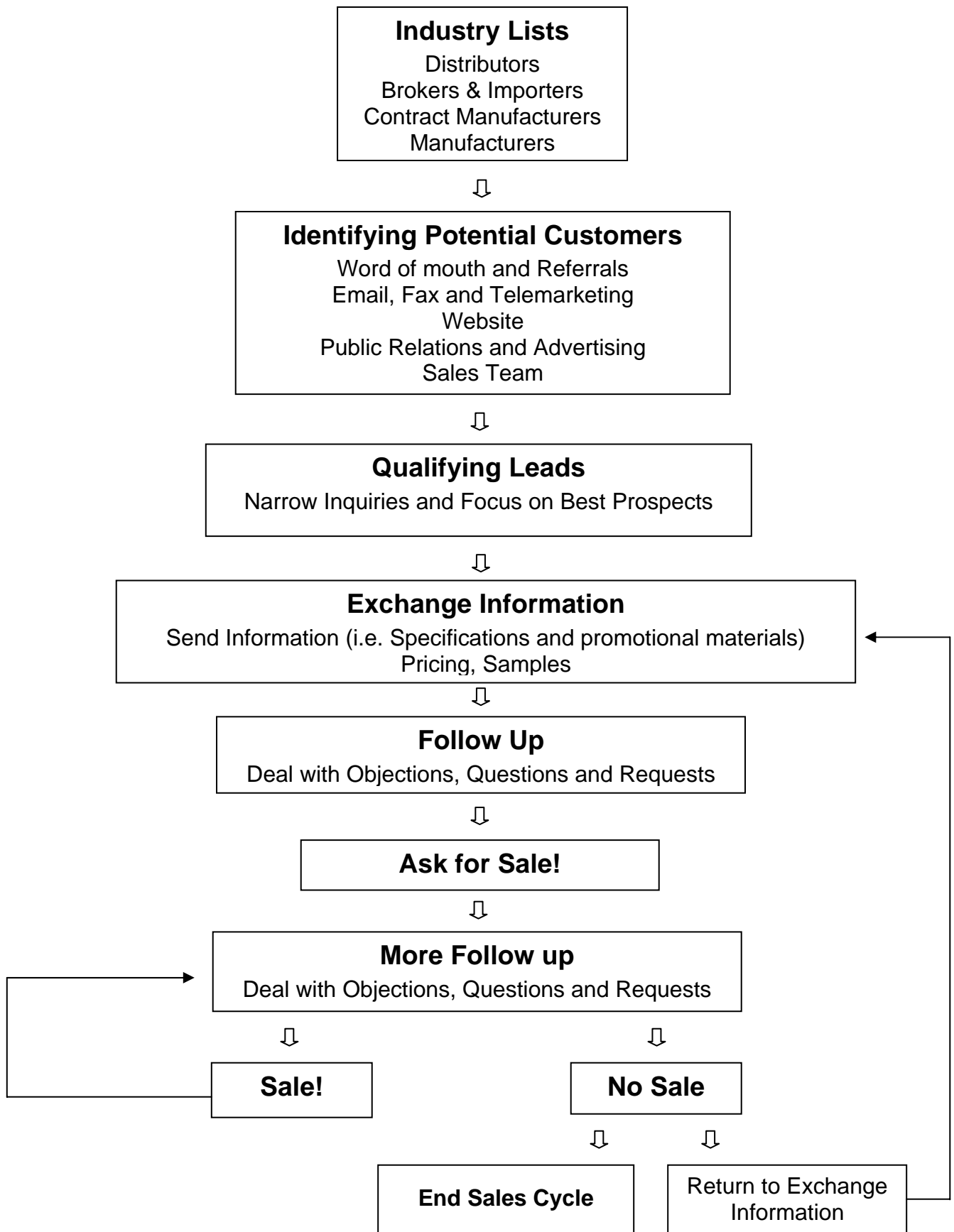
The customers for these types of products are often similar across the different markets. Customers typically are Importers, Distributors, Brokers, Contract Manufacturers and Manufacturers. Since most of these products are used as ingredients in other consumer products that cross into the various non-traditional natural product markets, the customer base is expected to be ingredient sales organizations and manufacturers. Some of the essential oils, vanilla products and handicrafts can be packaged and prepared for direct consumer sales; however, this report will focus on sales of intermediate products.

An example of the typical Sales Flow Chart for products sold as ingredients is given in **Chart 1**. One of the primary purposes of the BAMEX project is to shorten the number of contacts between producer and customer (manufacturer), thereby creating more direct relationships. By reducing the supply chain (see **Section 2.0**) or number of middlemen in the supply chain, producers will gain value, relationships (with customers) and greater control over the marketing and sales of their products. In other words, creating direct relationships is one simple step in creating the potential for capturing higher value for products.

Sales cycles vary considerably from product-to-product, company-to-company and industry-to-industry. New ingredients typically take the longest before they reach market. A new ingredient that has not been in use in commerce previously in the U.S. can take a minimum of 6 months and up to many years prior to commercial scale-up. This is especially true for new botanicals that have no prior sales or use history in the U.S. Fruits, vegetables, spices and essential oils that have been in use and sold in the U.S. for a long period of time, have

no issue with timing. The issue surrounding these products is in reference to market share, conditions, price, availability, quality and so on.

Chart 1. Typical Sales Flow Chart



1.1 Dietary Supplement Market

1.1.1 Size & Characteristics

US- In the United States, dietary supplements or “herbs” are governed and defined by the Dietary Supplement Health and Education Act of 1994 (DSHEA).

Natural product sales in the year 2002 have topped \$34 Billion. In the 1990’s in the U.S. many segments of the natural products industry were growing at double-digit figures, sometimes as much as 30%. The market in the U.S. has matured, and many companies have been feeling the crunch, but the retail market still remains a solid growth market at 8.3% for 2001. This is excellent when compared to the performance of the top 10 supermarket chains in the second half of 2001, as it was almost flat in growth at only 0.1%. The growth of natural and organic product sales in the food/drug/mass merchandisers increased 5.5%, and for all the natural and organic product sales in retail and non-retail outlets increased 6.7%

Supplement Sales (top growth areas for 2001)

Sports Supplements- 13.7%

Specialty Supplements (include. Ayurvedic, hormones, essential fatty acids) – 12.5%

1.1.2 Regulations, Standards & Certifications

The Dietary Supplements industry employs a variety of standards, ranging from those required by food companies to those required of pharmaceutical companies. These standards are often times described as cGMP (Current Good Manufacturing Practices). Most manufacturers within the industry either already have these standards in place or are adapting to put them into place.

The FDA (Food and Drug Administration; <http://www.fda.gov/>) is broadly responsible for ensuring compliance with the law, including the law known as DSHEA (Dietary Supplement Health and Education Act of 1994; <http://www.fda.gov/opacom/laws/dshea.html>). This law governs, among many other things, permissible claims for dietary supplements. The FTC (Federal Trade Commission; <http://www.ftc.gov/>) also regulates dietary supplements from a consumer protection point of view. Therefore, when companies make outrageous claims on how their herbal or dietary supplements can cure disease, it is not only the FDA that can prosecute, but also the FTC that may prosecute companies. Often times, the heaviest punishments that are given to manufacturers regarding false claims come from the FTC.

The many industry associations within the dietary supplements industry also provide guidelines and standards for manufacturers. These guidelines and standards are usually compliant with governmental regulations and often times above and beyond those governmental regulations.

Beyond regulatory and manufacturing standards and certifications, there are a variety of different processed raw materials produced and offered into the market, some of which have become a “standard” for trade. Processed plant materials are often times referred to as extracts. Plant extracts can come in many different forms from like liquids, solids, oils, paste, powders, whole concentrates and standardized extracts. The definition of these extracts differs from country to country and product to product. Generally speaking extracts are concentrates or a break down of a plant raw material into a new product. A ratio based extract is one that concentrates a raw material to some ratio of beginning to ending material. Meanwhile, a “standardized extract” manufacturer uses a marker compound (or group of them) within the raw material then aims to extract the plant to ensure that there is some minimum (and maximum) amount of that compound in the product.

The standards for determining the quality and acceptability of these extracts also depend on industry and product. There are many standards for defining the quality of extract, some of the more important ones are listed below:

a. German Commission E

- b. USP (United States Pharmacopoeia)
- c. US Herbal Pharmacopoeia

There is much discussion on the benefits and problems of ratio based compared to standardized extracts. Many U.S. manufacturers are now moving toward extract standardization as a result of some of these programs. Standardization is not necessarily better, though it often serves as a certification that the product is assured at a higher quality than a ratio based extract (representing a more “pharmaceutical approach” to herbalism). Each company will exhibit different preferences for standardized vs. non-standardized extracts, and also to which standards the extracts should be calibrated.

1.1.3 Sales Cycles

The dietary supplement industry has generally short product development and sales cycles, especially when compared to the pharmaceutical industry. It is possible for a new product to be developed and reach market within months, especially if the ingredients used in the consumer product are considered to be safe and consumable. Dietary supplement manufacturers have an average product development cycle of 6 to 12 months. This is considered relatively fast by other industry standards. However, as evidence-based dietary supplements (i.e. those with clinical studies to prove their efficacy) are becoming more of the norm in the dietary supplement industry, product development cycles of 2-3 years are becoming more common, as manufacturers might undergo clinical testing on their products before releasing them to the market.

One of the biggest challenges with the Dietary Supplement industry is that many products are considered “fad” products and as a result, have fairly short sales cycles. It may take a product 2 or 3 years prior to the product reaching maturity, due to lack of education and lack of interest by consumers. Sometimes it is difficult to ascertain what is a “fad” product, and which products have a long-term appeal. Certainly, those with high sales associated with infomercials or other celebrity endorsements are good examples of products that can be expected to be “fad” products in nature and have high sales and growth for short periods of time.

Certain categories in the dietary supplement industry are perennial successes. A good example of a continuously strong category is the diet category. Americans are fascinated with weight loss, a fact that keeps diet supplements a growing business, even with all the products and the ensuing competition it brings. Product cycles are considerably longer for the core supplement categories, where product cycles can last 10 to 15 years or more.

1.2 Functional Food Market

1.2.1 Size & Characteristics

US- In the U.S. “Functional Foods” do not fit into a legally defined separate area, and are therefore regulated as foods. This means they must be GRAS (Generally Regarded as Safe), or have a very strong traditional food/beverage use.

Although there is no legal definition of what exactly is a “nutraceutical” or “functional food,” this new market category in the U.S. has become one of the fastest growing in both the food and dietary supplement markets. When “functional foods” first began to be recognized on the market approximately 3 years ago, the fastest area to expand were the functional beverages. It began with “natural beverages” that contained functional herbs, such as a sports drink with ginseng and green tea. It has now expanded into a wide variety of functional beverages with their own sub-categories, such as the Red Bull-type energy drinks, the vitamin waters, etc. Originally, standardized herbal extracts were added to these beverages, but they were much less concentrated than the pharmacopoeial standards; this is still the case for botanicals. For example, St. John’s wort is used in dietary supplements as an extract standardized to .3% Hypericin, but in these drinks, often food companies would add St. John’s wort that was .03% Hypericin, and the consumer didn’t understand the difference. In many such cases, one can easily argue that these drinks are not “functional” at all. However, although

functional beverage companies still often add botanicals in concentrations and extracts that are just enough to make a label claim, many of the drinks are becoming more potent on the market.

At our recent visit to the Northern California Institute for Food Technologists (NC-IFT) trade show, it was clear that functional foods/nutraceuticals have become part of the mainstream trend in foods. Many new product introductions have been made with added fiber (both soluble and insoluble), pro and prebiotics, and antioxidants. Although it is as yet unclear where the long term opportunities will be in the functional food market, there may be an opportunity for higher value processed spices to enter the functional food market as both additives to foods, as well as beverages (and dietary supplements). For example, Sabinsa's black pepper nutraceutical is an excellent example of a spice that has been made into a high value functional food additive.

Although the development of a functional food, such as Sabinsa's Black Pepper ingredient, requires significant investment into research and technology, partnerships may be made with the appropriate industry players in order to reduce required capital in such development. Madagascar possesses a high value image already for its vanilla and other spices, and this image can be taken advantage of in the development of specialty food ingredients, such as functional foods.

Organic Foods (top growth areas for 2001)

- Food service- 37%
- Nutrition Bars- 35%
- Snack Foods- 29%
- Nondairy Beverages- 26%
- Packaged Grocery- 23%

1.2.1.1 Food Market Data for Cloves

Most of the available market volume information focuses on clove commodities, rather than the different processed forms of cloves or differentiating between whole fruit, cloves and stems. A more detailed market review will be needed to ascertain volumes of the different value-added clove products on the market.

U.S. Market:

The imports of cloves to the U.S. was fairly stable, as reported by the import statistics for 1979-1987, with the volume starting at 2,911,000 lbs. in 1979 and ending only slightly lower at 2,238,000 lbs. in 1987:

http://asta.neology.com/members/marketing/stat_table2.htm

In a report of U.S. market imports of cloves by country, Madagascar was the top exporter into the US by a large amount (see table below).

TABLE 1- U.S. Import Statistics 1994-1997 for Cloves (Whole Fruit, Cloves and Stems) (Kg)

	1994	1995	1996	1997
Madagascar	1,120,449	1,345,622	736,795	986,306
Singapore	19,912	19,776	29,647	99,148
France	20,000	10,000	6,600	91,986
Sri Lanka	36,523	26,902	41,527	68,958
Indonesia	40,020	58,000	81,910	50,000
Tanzania	0	0	0	40,135
Moldova	0	0	0	20,000
Malaysia	24,560	11,176	31,724	12,192
Comoros	0	0	0	10,566
India	0	0	0	10,027
China	1,886	398	712	8,877
Other	55,169	22,113	29,566	32,600
Total	1,318,519	1,493,987	958,481	1,430,795

European Market:

The European imports of cloves for the year of 1995 was 2,180 metric tons, which was lower than the previous year (2,474 metric tons), and was consistent with a downward trend from the several years prior (2,740 metric tons in 1988). The value of the imports of cloves mirrored an even more significant decline, starting at US\$7,452 in 1988 and ending at US\$1,863 in 1995.

For more data relating to the European Imports of Spices (include Cloves) see:

<http://www.fintrac.com/gain/tradestats/eu/archives/spice3.htm>

<http://www.fintrac.com/gain/tradestats/eu/archives/spice2.htm>

Cloves are among the top three most antimicrobial spices (along with cinnamon and allspice), and also exhibit antifungal activity. The main antimicrobial component in its essential oil is eugenol, with an approximate 16-18% content of the spice. When added to bakery items, the presence of these compounds adds flavor and aroma, as well as functioning to inhibit molds and mycotoxin production. Although this research is promising for cloves, the strong flavor that would be imparted by an extract processed for this use would be detrimental to most food applications (Shelef, 1983; Sofos et al., 1998).

Cloves are also a primary spice in the blend of spices that are used to make chai. Chai products will be discussed more in **Section 3.0**.

1.2.1.2 Food Market Data for Cinnamon

Cinnamon is widely used in foods, flavorings, and in pickling, preserves, pudding, flavorings, and stewed fruit. In ground form, the largest end use is in baking followed by confectionery and beverages. Cinnamon leaf oil (primarily eugenol - inexpensive) and cinnamon bark oil (rich in cinnamic aldehyde - expensive) are also traded in the market. Some market statistics were gathered below to get a basis of volume and price, however, most of the available information focuses on cinnamon commodities, rather than the different processed forms of cinnamon. A more detailed market review could be used to ascertain volumes of the different value-added cinnamon products on the market.

Table 2. US Import Statistics 1994-1997 -Cinnamon & Cinnamon-Tree Flowers (Kg)

	1994	1995	1996	1997
Indonesia	14,415,510	13,984,871	15,176,627	15,814,968
China	437,497	317,967	542,245	427,160
Germany	30,304	32,457	50,642	55,467
Sri Lanka	674,027	708,355	707,320	708,708
Hong Kong	48,129	9,204	22,084	23,671
Canada	1,638	3,690	2,085	21,937
Netherlands	17,662	20,638	3,747	3,494
India	123,111	167,714	204,727	30,800
Italy	15,000	0	0	1,215
South Korea	268	420	2,410	21,361
Singapore	15,000	4,956	8,000	30,000
Taiwan	5,050	1,045	2,038	0
Thailand	3,773	12,789	31,649	1,671
Vietnam	76,702	302,687	341,920	354,034
Other	66,618	39,817	2,998	293
Total	15,930,289	15,606,610	17,098,492	17,494,779

Source: <http://www.marketag.com>

Vietnam serves as an example how a newer country can penetrate, expand and become a major producer. This is in part due to their low collecting costs, the very high quality of cinnamon produced in this country (due to the very rich content of cinnamic aldehyde) penetrated into this market, and the focus of developmental efforts in expanding this product for export. It may be possible for Madagascar to focus developmental efforts on the production of cinnamon and become a major world producer, if not a smaller, but higher value producer. According to Kay Wright, the head buyer at Celestial Seasonings, she buys cassia from Vietnam because it has the high quality sweetness and hotness that they like in small quills, and it is cheap.

Note that many non-producing countries such as Germany, Hong Kong, Netherlands, Italy, South Korea, Singapore, and others buy from producing nations, then further process the product and later export into the US. These countries appear as country of origin of the product, rather than country of origin of shipment into the USA.

Interviews conducted with functional food and dietary supplement producers who use cinnamon, such as Celestial Seasonings and Third Street Chai indicate that whole cinnamon is still their most sought after import rather than pre-processed cinnamon, as they are leery of reduced aroma and flavor that could occur after shipping already-ground or otherwise processed cinnamon. Therefore, they prefer to import their cinnamon according to in-house quality standards, and then either grind them in-house or send them to a contract processor. When asked what processing steps could be taken on the producer end to attract their business several companies noted better physical cleaning and quality control. When we proposed the idea of buying a pre-processed cinnamon (ground) that was somehow stored in flavor and aroma-protective packaging, they indicated this would be of interest as long as it was price competitive.

One hot new food and beverage trend in the U.S. is chai. Although traditionally a beverage, chai as a spice blend is so hot that there are applications for it in prepared foods and even cosmetics (eg. Chai skin lotion). As cinnamon is a standard ingredient of chai, as well as other herbs (cloves and ginger) that Madagascar is a major producer, it makes sense that these applications could have great value-added potential for Madagascar.

As coffee and tea houses have become a part of American life, with the success of Starbucks and niche coffee houses, opportunities have opened up that go beyond just coffee and tea. The market for teas and juices in the U.S. is exploding, and includes many forms such as hot filter bag tea to cold, ready to drink and fresh juices. According to a market information company called SPINS in San Francisco, CA, all segments of the tea market is experiencing double-digit growth. Not only are black and green tea markets experiencing quick growth, but chai is becoming a more mainstream product in the U.S., along with other specialty beverages, such as iced-teas and frappachino-like products. The chai segment of the U.S. market is so large that many companies have made chai product introductions. Cinnamon and the other sweet spices produced by Madagascar may have an opportunity as specialty beverage products. One example of this is mulling spices. When Aspen Mulling Spices, from Aspen, CO, was interviewed, they said they used three different types of cinnamon in their mulling spice blend. Another example is instant chai and instant cinnamon coffee produced by Quickfoods, Inc.

Source: <http://www.nutraceuticalsworld.com/julaug992.htm>

Another niche market occupied by spices are retail spices that claim to have organic and non-irradiated sources, or are otherwise cleaner than the standard spices found in the grocery store. Morton & Basset is one such niche retail spice company that carries fully organic spices and demands a higher price in retail outlets. See more on organics in **Section 1.4** below.

High end spice blends that include cinnamon, or seasonal spice products that feature cinnamon with fancy packaging may receive some of the highest values for cinnamon products, and are typically found in gourmet food stores, such as the India Tree Gourmet Spices & Specialties. Madagascar may be able to fill a niche with similar products that capture the exotic nature and quality of their cinnamon products.

Cinnamon is among the top three most antimicrobial spices (along with cloves and allspice), and also exhibits antifungal activity. The main antimicrobial components in its essential oil are cinnamaldehyde and eugenol, with an approximate overall essential oil content of 0.5-2.0%. When added to bakery items, the presence of these compounds adds flavor and aroma, as well as functioning to inhibit molds and mycotoxin production. Although this research is promising for cinnamon, the strong flavor that would be imparted by an extract processed specifically for this use would be detrimental to many functional food applications (Shelef, 1983; Sofos et al., 1998).

One application of cinnamon that is getting a lot of attention is the use of cinnamon as an anti-diabetic and anti-inflammatory nutraceutical. Nearly 6% of the U.S. population has diabetes, and one-third of these people don't even know it yet. Diabetes is a growing health concern, and with the popularity of nutraceuticals, and the nutritional nature of diabetes, people are looking for natural alternatives to treat or reduce the risk to this illness. Cinnamon has shown good potential as a blood-sugar regulator. Dr. Anderson of the USDA recommended that type II diabetics take a quarter to one full teaspoon a day of cinnamon to help control diabetes. In these reports, a substance in cinnamon called methylhydroxy chalcone polymer (MHCP) is thought to be due to the anti-diabetic activity of cinnamon. As an alternative, since MHCP is found in the water-soluble extract of cinnamon and not in the oil extracts, supplementation with the water-soluble portion for diabetes control may be less likely to be toxic (Anderson et al., 2000).

1.2.1.3 Food Market Data for Ginger

Worldwide, ginger is among the most important and valued spices. Today, the plant grows in tropical regions all over the world and plays a part in the local cuisines. Ginger is sold as dry roots (whole or powder) and fresh ginger (also called green ginger) that is now easily available in Western countries. Ginger oil is also sold in the markets, as is the oleoresin of ginger. When the US importation of ginger is reviewed (see **Table 3** below), you'll note that neither Ecuador and Nicaragua had exports to the US prior to 1992, yet since 1993, both countries became new sources of ginger production.

Table 3- US Imports of Ginger 1992-1996

US Imports of Ginger, Volume (Kg)					
Kilograms	1992	1993	1994	1995	1996
Costa Rica	670,332	1,058,245	1,045,248	2,290,927	4,916,982
Brazil	1,160,499	1,799,414	2,660,067	2,833,032	2,387,944
China	587,954	446,542	4,966,657	6,345,053	1,885,017
Nicaragua	0	45,904	9,568	272,968	1,104,460
India	1,648,884	1,145,350	927,265	158,234	564,573
Ecuador	0	57,878	290,457	335,149	537,184
Fiji	1,486,873	730,798	533,636	596,713	536,334
Thailand	502,708	265,293	927,077	924,667	507,969
Guatemala	131,776	104,418	66,477	186,688	503,725
Honduras	69,535	37,523	150,250	76,595	429,718
Nigeria	446,191	425,913	260,675	129,986	203,534
Singapore	56,880	38,064	4,429	26,598	54,242
Hong Kong	1,565	7,255	130,813	20,244	42,569
Indonesia	1,293,260	1,797,782	2,439,420	920,021	37,240
Dominican Republic	17,000	5,219	5,874	0	18,813

RSA	0	0	3,290	41,670	15,400
Vietnam	0	0	0	0	12,445
Jamaica	49,883	19,919	15,444	10,780	9,003
China (Taiwan)	30,549	52,372	34,817	26,609	2,674

Source: <http://www.fintrac.com/gain/tradestats/usa/archives/ginvol.htm>

Table 4. US Import Statistics 1997 - Ginger (Kg)

Supplier	1997
Costa Rica	3,604,818
Brazil	2,827,602
India	1,792,698
Nicaragua	1,187,751
Honduras	1,169,801
Thailand	803,514
Guatemala	695,543
Fiji	503,336
China	289,137
Indonesia	37,240
Hong Kong	28,495
South Korea	20,000
Japan	18,681
Taiwan	7,026
Singapore	3,900
Malaysia	2,561
Philippines	223
Vietnam	0
Other	851,976
Total	13,844,302

Source: <http://www.marketag.com>

Table 5. European Imports of Ginger, 1991-1995, Volume (Metric Tons)

Supplier	1991	1992	1993	1994	1995
China	1,415	1,176	1,273	2,594	3,335
Brazil	2,395	2,408	3,516	2,961	2,666
Thailand	596	2,355	880	1,037	1,745
Costa Rica	1,464	816	852	889	1,307
Nigeria	1,361	2,212	1,675	1,474	973
South Africa	499	542	363	283	703
Other	2,857	2,279	2,327	2,271	2,067
Total	10,587	11,788	10,886	11,509	12,796

Source: Eurostat

From these data tables we can learn that possibilities are available for new suppliers to compete with traditional ones. For example Nicaragua sold no ginger to the USA in 1992 started to export small amounts in 1993 and by 1996 became a major ginger supplier to the USA.

1.2.1.4 Food and EO Market Data for Geranium

The USDA Foreign Agricultural Statistics (FAS) report states that in 2001 the US imported 40.7 MT of geranium oil totaling 1.78 million dollars. Prices for geranium oil have remained consistent over the past 5 years with an average of \$45/ kg. The major producers and suppliers of geranium oil are France, Egypt and China with average annual export quantities (to US) of 19.7 MT, 16 MT and 8 MT respectively. Oil prices are roughly the same irrespective of the country where it is produced. Africa is already a producer of geranium oil- Egypt, Reunion, Madagascar, and other minor players.

Opportunities exist for certified organic geranium oil. Current wholesale prices for geranium oil range from \$5.50/oz (China) to \$8.12/oz (Bulgaria) for commercial grade oils, whereas organic geranium oil from Madagascar is priced at \$18.70/oz, more than twice as much as the non-organic oils. (Essential Oils University wholesale price list, www.essentialoils.org). Based on the US market, there is a steady demand for geranium oil, the prices are moderate and stable Statistics for world markets were unavailable.

Additionally, there are relatively few producers of the oil, and quality of the oil is variable. Africa sometimes has had a reputation of growing a high quality product, such as an organic geranium oil currently being produced in Madagascar. In general, however, quality of African geranium oil has not been of high quality reflecting the Bourbon geranium oil of commerce. Inconsistent product, variable aroma and essential oil profiles and small-scale producers using a myriad of distillation techniques from a wide variety of geranium fields, then blended together has led to a variable product from many African producers.

1.2.2 Regulations, Standards & Certifications

Similarly, functional foods employ a variety of standards. These standards are often times described as CGMP (Current Good Manufacturing Practices), or they may only be regulated under food good manufacturing processes (http://www.access.gpo.gov/nara/cfr/waisidx_99/21cfrv2_99.html). At the very minimum, manufacturers should meet the food level GMPs, but as functional foods are a grey area that tends to include both foods and supplements, many manufacturers will produce these products to meet higher levels of GMPs, such as those currently being adapted specifically for dietary supplements, or those that are already in place for pharmaceuticals (see <http://www.fda.gov/cder/dmpq/cgmprgs.htm>). According to a strict interpretation of the law, functional foods are foods, and therefore required to be regulated as such.

The FDA (Food and Drug Administration) is broadly responsible for ensuring compliance with the law. Foods and drugs are covered under CFR (Code of Federal Regulations) Title 21. Most functional food and traditional food manufacturers only use ingredients that are considered GRAS (Generally Regarded As Safe) or are on an “Approved Food Additives” list.

The FTC (Federal Trade Commission) also regulates functional foods from a consumer protection point of view.

The many industry associations within the functional food industry also provide guidelines and standards for manufacturers. These guidelines and standards are compliant with governmental regulations but may be more stringent than those governmental regulations.

1.2.3 Sales Cycles

The functional food category has somewhat longer development and sales cycles than the dietary supplement category. Food and functional food manufacturers are generally larger companies with higher regulatory risk and visibility, who are more cautious in their product development cycles and therefore products may take a minimum of 1 to 2 years to develop and reach market.

One characteristic of product development for functional food and food companies is that their products will often be tested in the market prior to mass distribution so they may understand what to expect from consumer demand and how to market a product most efficiently and with the greatest impact. Products that survive a test-marketing period typically stay on the market for many years. Functional food companies are also leading the way for introduction of new food categories like the nutritional bar category. The functional food market is an area of high growth for food companies, and has changed the way they develop new products. Functional foods represent one of the most creative areas of food development. Whereas foods have traditionally been slow to be accepted by the American public, in the functional food area new products are now accepted and sought after by consumers because they are seen as being good for the health and safe and natural (even when they are not). Once a niche market, this category has taken off and is now a multi-billion dollar per year. Much of the enthusiasm and high growth that was seen in the mid-nineties for the dietary supplement industry has now transferred to functional foods. This is partly because consumers have been scared by negative media reports of dietary and herbal supplement safety. However, these same consumers are still looking for products with health benefits, and so they are now buying in the food category as these are seen as foods and therefore safe.

1.3 Body Care & Cosmetics

1.3.1 Size & Characteristics

The definition of cosmetic under the law varies slightly between countries, but in general terms “cosmetic” means any article intended to be used by means of rubbing, sprinkling or by similar application to the human body for cleaning, beautifying, and for maintaining health of the skin and hair, provided that the action of the article on the human body is mild. The regulatory agency for cosmetics in the US is the Food and Drug Administration (FDA). The FDA does not require pre-market approval for cosmetics. The cosmetic product name and details of its ingredients are voluntarily reported to the FDA within 60 days of marketing. With the exception of color ingredients that require authorization for use, the FDA does not approve the use of any cosmetic ingredient, unless a safety problem arises after it has been put on the market, in which case the FDA can take action. The FDA’s budget for cosmetic safety surveillance is less than 1%.

Essential oils (EOs) are the volatile, odorous oils that occur in certain plants. EOs are widely known for their scents and flavors, making the food flavor and fragrance (F&F), aromatherapy (including body care and cosmetics) industries among the largest users.

According to the IPC, India has now become the major supplier of oils and oleoresins in the world, accounting for about 70% of the world production. The IPC also cautioned that the excess capacity in India is much higher than the current production, and therefore anyone wanting to begin oleoresin production should proceed with caution and have a strong marketing component, as competition with India will be tough.

Source: <http://www.ipcnet.org/industry.htm>

According to Mike Tyrrell, technical director of Lionel Hitchen LTD, UK, one of the reasons companies like to use oleoresins for product development and seasoning blends is because they are perceived of as cleaner than minimally processed spices.

Natural Personal Care (top growth areas)

Personal Care (include aromatherapy)- 22%

Organic Personal Care- 42%

Housewares-22%

Organic Housewares-66%

1.3.2 Regulations, Standards & Certifications

In addition to the federal regulations set by the FDA and FTC (see <http://www.cfsan.fda.gov/~dms/cos-206.html>; and <http://www.cfsan.fda.gov/~dms/cos-hdb1.html>), the body care and cosmetics manufacturers also work with industry associations to provide additional guidelines and standards. The CTFA (Cosmetic, Toiletry and Fragrance Association) for example, works with manufacturers on developing safety and quality control standards that exceed those of the federal government. Industry associations like these have independent researching, testing and reporting capacity. Industry members are likely to abide by and uphold these standards, as they are the commonly accepted way to do business.

Cosmetic ingredients are often standardized, at least in nomenclature under INCI (The International Nomenclature of Cosmetic Ingredients). Though this is a European standard, it is observed and used by U.S. cosmetic and body care manufacturers.

1.3.3 Sales Cycles

Similar to the functional food category, body care and cosmetics manufacturers are often slower to develop and bring products to market. Manufacturers tend to have longer, more rigorous testing standards to their product development and sales efforts. Products can take 1 to 2 years to develop and reach market.

Once products have survived their development and test-marketing periods, they too enjoy relatively long sales cycles, lasting many years.

1.4 Sustainability Markets

1.4.1 Size & Characteristics

Although consumers often think of organics as a measure of quality, they are in fact only a guarantee of process.

According to a report by the American Spice Trade Association (ASTA) in 2000, organic spices have had a compounded annual growth rate of 24% a year worldwide over the previous six years, and the U.S. was the leading supplier. Mary Mulry of FoodWise, Inc. told members of an ASTA convention that year that organic spices had a very bright future, and that sourcing problems was one of the biggest hurdles to the market then. See: <http://www.astaspice.org/>

According to Organic Planet, San Francisco, CA, a trader of organic natural products, such as dried fruits, nuts and spices, they carry organic cinnamon and sold (two years ago) for approximately \$1.28/lb (FOB in California).

As with organics, fair trade certification of products is usually seen by consumers as better products in quality. Fair trade is not as 'process oriented' as organics when it comes to production, but in some cases it assures that there are certain processes guaranteed with the certification of the product, such as developmental processes to ensure better working conditions for workers. Currently, only a few crops are offered as fair trade products. However, due to spice producers' presence in many developing countries and the commodity nature of the spice market, certain spices may be excellent candidates as fair trade certified products. A more detailed marketing analysis may be produced to learn the benefits of certification of products to producers.

To learn more about Fair Trade: <http://www.fairtrade.org.uk/fortnight2003/>

1.4.2 Regulations, Standards & Certifications

Other than Organic certification, there are no federal regulations or standards guiding the industry for sustainable or “green marketed” products. The USDA, however, has developed an initial set of standards for accrediting Organic certifiers under the NOP (National Organic Program). This program establishes the criteria for accrediting independent certifying groups, regulates the use of the ‘organic’ seal and educates consumers on organic programs.

Other industry standards pertaining to sustainability are not yet under federal regulation or scrutiny. Most sustainability seals are therefore unregulated in the sense that there is no federal standard or criteria to guide possible regulations. Sustainability seals and certifiers work with different industry groups to develop rational programs that promote social, environmental and economic principals.

One such certification seal is Fair Trade certification, and another lesser-known certification is the Biodynamic certification. The most well known of these "sustainability certifiers" is Fair Trade (<http://www.transfairusa.org/>). This organization is devoted to support fair deal initiatives with producers in developing countries and as a result of this program provide greater benefit to the local producer. The program has as its principal criteria:

- Fair prices for farmers and decent working and living conditions for workers
- Direct trade with farmers, bypassing middlemen
- Free association of workers and co-ops, with structures for democratic decision-making
- Access to capital
- Sustainable agricultural practices including restricted use of agrochemicals

Currently, the program is available for certain important commodities like coffee, cocoa, tea, sugar and fresh fruit. At some point it would be of potential value and interest to adopt either a Fair Trade certification program with Malagasy producers/exporters, or develop some more individualized "fair deal" kind of program. The program initiated in 2003, called NATIORA, had similar intentions (<http://marketstandards.chemonics.net/resources/Stories%20from%20the%20Field/LDI.asp>).

Adopting a more flexible “fair deal” program would include creating our own standards of sustainability and linking directly with communities. Offering this as a service to directly create partnerships between manufacturers/distributors and communities can bring a valuable service to industry, while at the same time creating a great marketing angle for Malagasy products and delivering real and sustainable benefits to communities. Offering this service to manufacturers/distributors was discussed in our initial contacts with industry, and met with great enthusiasm (see **Section 5.0**).

Organic certification is another way to establish value, product differentiation and to demonstrate sustainability. One of the basic principals of organic certification is the principal of sustainability. Many certifying agencies become deeply involved with issues beyond those related directly to farming. These certifiers investigate social, environmental and economic practices as well. These kinds of programs fit perfectly with those of many of the sustainability certifiers.

Another set of standards that should be looked at are related to the agricultural practices. GAP (Good Agricultural Practices) are similar to GMPs (Good Manufacturing Practices), but set guidelines for agricultural and cultivation practices. Guidelines have been established by the FAO (Food and Agriculture Organization - http://www.fao.org/prods/GAP/gapindex_en.htm) and the USDA (US Department of Agriculture - <http://www.foodsafety.gov/~dms/prodguid.html>). As many countries and some companies are able to establish their own GAPs, there is an opportunity to include measures of sustainability of both an environmental and socioeconomic nature to these GAPs.

Consumers are becoming more aware of and more interested in certified organic and sustainable products. The issue is often one of supply, meaning there is not enough certified organic or certified sustainable raw materials to fully serve the growing market in the U.S., and as a result, many manufacturers are relatively slow to get into this part of the business. Certified organic and sustainable products do generally earn a higher price than conventionally grown products and in some cases can be grown and cultivated at similar or lower costs than the conventional. In addition to this, the organic and sustainable consumers tend to have a much greater knowledge and expectation regarding environment and sustainability. Their perception and purchasing decisions are highly influenced by sustainable social, environmental and economic practices. As these consumers are the main natural product consumers, it would be wise to target an approach to the non-traditional markets that is in line with their values.

1.4.3 Sales Cycles

Sustainability markets are often a sub-set of the other markets, but by creating new standards and certifications, new markets are open for the products mentioned herein. Sustainability products do usually require some additional steps in development and in certification or accreditation. This adds time to the development process.

Similarly, consumers often need to be made aware of the issues around sustainability and consumption of products. This can take time and cost a significant amount of money. Once it is done and consumers do perceive some value to these kinds of products, growth is sustained, consumers demonstrate loyalty and as a result, product life cycles can be quite long. Sustainability markets are just beginning to offer significant choices to consumers and consumers are still not quite sure how to understand with the many different certifications and accreditations, but the trends are strong and clear.

Many food manufacturers, for example, are interested in developing certified organic products, but are not convinced the supply of ingredients is of sufficient quantity, quality or price to make their products viable. Despite their emerging nature, organic sections have now been added to many mainstream grocery stores, such as Raley's Markets.

1.5 Handicrafts

1.5.1 Size & Characteristics

Due to the diverse nature of the handicraft markets, compiling data for this area is difficult. However, according to the U.S. Commerce Department, the United States market for handcrafted articles is \$10 billion yearly.

According to Molly Williamson of the US Commerce Department, "There is a strong desire to find the unique, the interesting, the product with a story." She delivered this message to an audience of African artisans, US importers, and US and African government officials at the Smithsonian Institution's Ripley Center during the Third AGOA Forum in Washington in December of 2003. She added, "This consumer market, large and growing, is something that opens a very special (market) for Africa products through AGOA (the African Growth and Opportunity Act). You will find throughout the United States specialty shops (and) big chains...looking for the products that come from, among other places, Africa." (see: <http://usinfo.state.gov/af/Archive/2004/Sep/21-349159.html>)

1.5.2 Regulations, Standards & Certifications

Handicrafts have few federal regulations as well. Standards and criteria for handicrafts may arise as a result of an interest in trading under sustainable practices and the desire to carry a seal or certification of some kind. As in the case of the Sustainability Markets, certifiers establish standards based on social, environmental and economic principals and benefits.

One area for attention regarding crafts and arts is that any product that may be used or seen as a child's toy, must conform to regulations set up by the FTC (Federal Trade Commission) and the CPSC (Consumer Product Safety Commission). Mostly, these agencies are concerned with protecting children from toys and crafts that may cause safety problems. Some toys require age appropriate labels for example, to inform adults of the possible risk of exposing toys to younger children these toys need to be labeled with recommended minimum ages and safety information. It is important for exporters to work with their American clients to ensure the products comply with these important safety measures.

Links for toys - FTC <http://www.ftc.gov/bcp/online/pubs/buspubs/thread.htm>
Child Safety Protection Act of 1994 - <http://www.cpsc.gov/businfo/frnotices/fr94/94-56387.html>
<http://www.cpsc.gov/cpscpub/pubs/282.html>

1.5.3 Sales Cycles

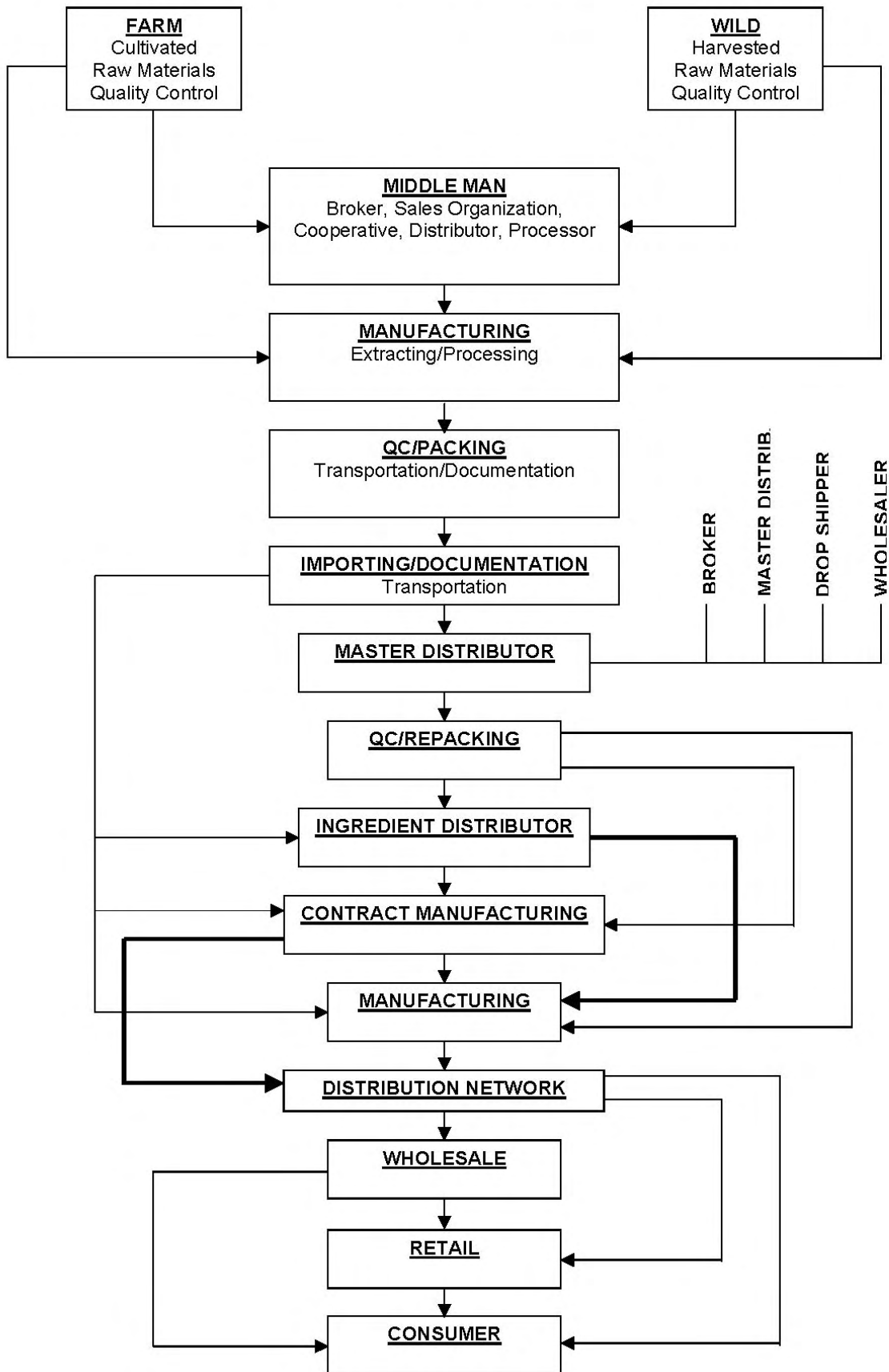
Handicraft sales cycles are subject to several factors, including seasonality issues and fads. Certification programs, like those in the Sustainability Markets, are helpful for the differentiation and valuation of the products. Markets tend to be tremendously niche in nature and marketing to those kinds of customers is more difficult. The Handicrafts market is better served by distributing products as close to directly as possible. That is, producers of craft products should package and prepare their products for sales to consumers and are best served by dealing directly, or close to directly with the retail distribution channels.

Distributors and producers need to work together closely so that producers can adapt quickly to market demands. Sales cycles are fairly long for categories of products, yet they could be short for individual products, as a result of fads and changing consumer interests. Sales cycles are also likely to be affected by seasonality, as consumers tend to buy certain craft products more during certain times of the year.

2.0 Natural Product Markets SupplyChain

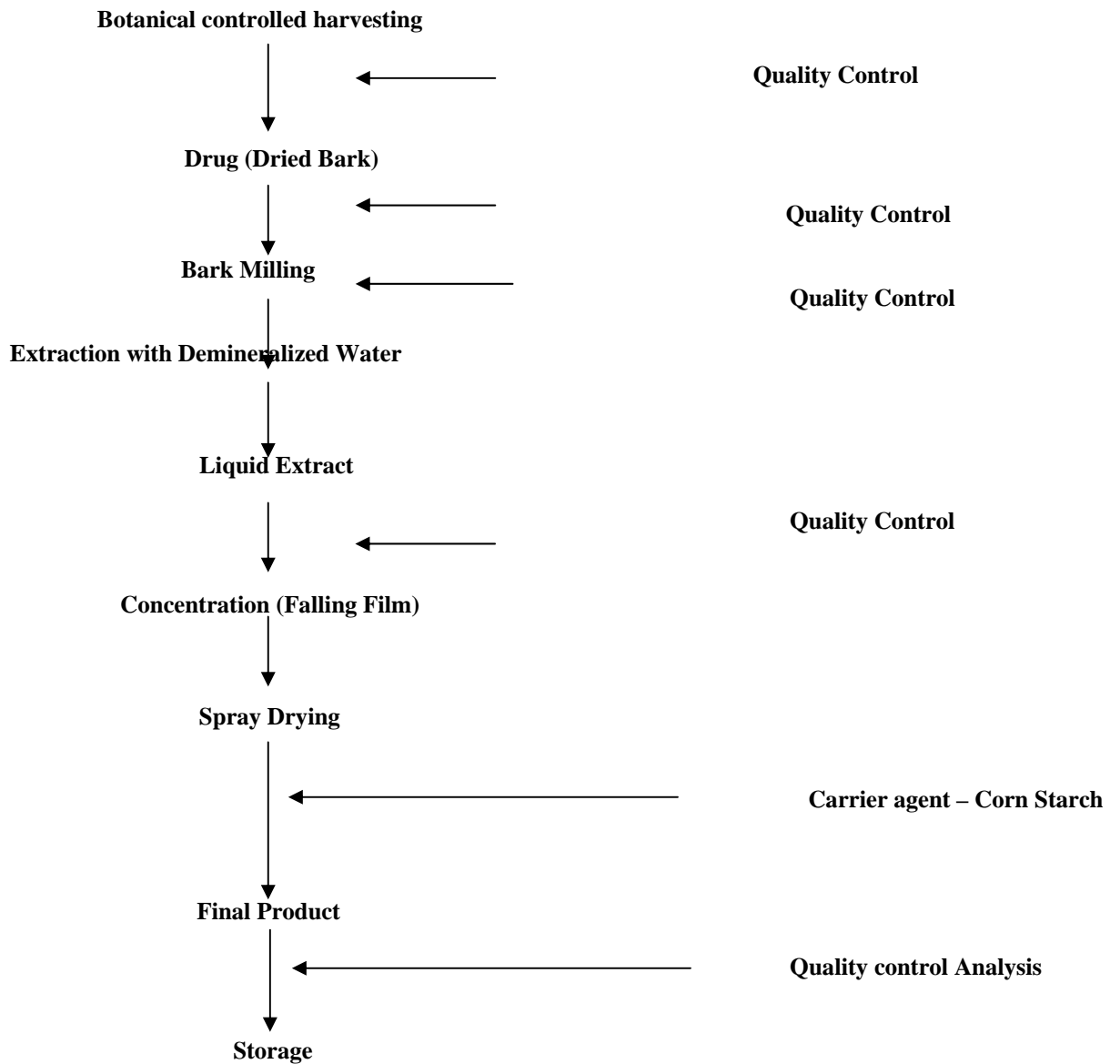
The chart below shows a sample Supply Chain Flow Chart. This flow chart provides a possible flow of products throughout the supply chain and to the consumer. The supply chain varies from industry to industry, product to product and channel of distribution.

Chart 2. Supply Chain for Natural Product—Botanical Extract



In order to aid in the understanding of the different levels of processing in the supply chain, a flow chart for the production of an extract is provided below.

Chart 3. EXTRACT MANUFACTURING FLOW CHART



3.0 Market Opportunity Assessment by Spice/EO

A common tool for providing a clearer understanding of the risks and benefits for product development and marketing is to perform SWOT (Strength, Weakness, Opportunity and Threat) assessments on the desired products or actions. Below SWOT assessments have been performed for each of the spices and essential oils in the Madagascar cluster of priority, and one has been done for each spice/essential oil by market channel.

These SWOT Assessments are meant to be works in progress that will change as more understanding is gained on the real opportunities for each market, when a literature review is performed for each product, and as new application data is reviewed.

According to current understanding, the products from the cluster that were reviewed with the highest potential include ginger essential oil (from fresh ginger), cinnamon, clove and geranium. The market demand currently for clove and geranium is strong, and for geranium there seems to be a scarcity of supply. Ginger also offers a potential to the aromatherapy market, even though competition from other countries is strong. This is because the Malagasy ginger oil is of unique flavor and aroma profile. Cinnamon may be a star product for Madagascar, especially if the perception of higher quality from Madagascar is developed.

3.1 Clove

3.1.1 Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Well known by the American public. • Because they are thought of as a food, they are thought to be safe. • Warm, sweet, taste • Excellent source of manganese • A very good source of omega 3 fatty acids, vitamin C and dietary fiber • A good source of calcium and magnesium • Contains the component eugenol which has been well studied. • Source of anti-inflammatory flavonoids, such as kaempferol and rhamnetin. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Could use more clinical studies on anti-inflammatory or anti-cancer benefits. • Numbing quality and taste may have to be hidden in capsule presentation • Could use more application data for understanding the potential dietary supplement applications for providing its health benefits. • Need better understanding of how a company might have a proprietary standing
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • (eugenol) Potentially useful for prevention of toxicity from environmental pollutants • (eugenol) Potentially useful for digestive tract cancers • (eugenol) Potentially useful for joint inflammation. • Great oral use application for numbing effect, as well as antibacterial effect. • Great source of many nutrients such as calcium and omega-3 fatty acids—popular categories for supplements • Good potential for sore throat sprays and mouth washes 	<p>THREATS</p> <ul style="list-style-type: none"> • Since it is already a food, perhaps people will think of it more as food and not as beneficial for health • Maybe too strong of taste for certain product presentations? • Perhaps too numbing in nature to take significant amounts for eugenol content or nutrients? • May be difficult to patent any new uses or processes, as it is fairly well known

3.1.2 Functional Food SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Well known by the American public. • Because they are thought of as a food, they are thought to be safe. • They are already GRAS • Warm, sweet, taste • Excellent source of manganese • A very good source of omega 3 fatty acids, vitamin C and dietary fiber • A good source of calcium and magnesium • Contains the component eugenol which has been well studied. • Source of anti-inflammatory flavonoids, such as kaempferol and rhamnetin. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Could use more clinical studies on anti-inflammatory or anti-cancer benefits. • Numbing quality and taste have to be complimentary to the desired application • Could use more application data for understanding the potential functional food applications for providing its health benefits. • Need better understanding of how a company might have a proprietary standing
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • (eugenol) Potentially useful for prevention of toxicity from environmental pollutants • (eugenol) Potentially useful for digestive tract cancers • (eugenol) Potentially useful for joint inflammation. • Great oral use application for numbing effect, as well as antibacterial effect. • Great source of many nutrients such as calcium and omega-3 fatty acids—popular categories for supplements • Good potential for sore throat sprays and mouth washes • Unique formulations/recipes could be developed that take advantage of its taste and provide functionality • Development of Chai spice blends and extractives to enter non-traditional markets 	<p>THREATS</p> <ul style="list-style-type: none"> • Since it is already a food, perhaps people will think of it more as food and not as beneficial for health • Maybe too strong of taste for certain product presentations? • Perhaps too numbing in nature to take significant amounts for eugenol content or nutrients? • May be difficult to patent any new uses or processes, as it is fairly well known

3.1.3 Body Care & Cosmetics SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Well known by the American public. • Because they are thought of as a food, they are thought to be safe. • They are already used in some body care formulations • Warm, sweet, taste • A very good source of omega 3 fatty 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Could use more clinical studies on anti-inflammatory benefits. • Will numbing quality interfere with certain applications? • Could use more application data for understanding the potential cosmetic applications for providing its health
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<p>acids and vitamin C –both important to skin health</p> <ul style="list-style-type: none"> • A good source of calcium and magnesium • Contains the component eugenol which has been well studied. • Source of anti-inflammatory flavonoids, such as kaempferol and rhamnetin. 	<p>benefits.</p> <ul style="list-style-type: none"> • Need better understanding of how a company might have a proprietary standing • How do you get away from the commodity trading of the oil and add value?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • (eugenol) Potentially useful for prevention of toxicity from environmental pollutants—will this work topically? • (eugenol) Potential antioxidant for the skin • (eugenol) Potentially useful for joint inflammation—will this work topically? • Great oral use application for numbing effect, as well as antibacterial effect—need to research if these are also good topically • Great source of nutrients that are important to skin health • Unique formulations could be developed that take advantage of its sweet aroma and provide functionality 	<p>THREATS</p> <ul style="list-style-type: none"> • Since it is already a food, perhaps people will think of it more as food and not as beneficial for health or skin • Maybe too strong numbing for certain product presentations? • May be difficult to patent any new uses or processes, as it is fairly well known

3.2 Geranium

3.2.1. Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Indigenous to Africa/Madagascar • Used in fragrances, aromatherapy, cosmetics as well as for flavor industry—wide industry applications • Essential oil commands high price and the price is consistent. • Steady demand for oil • Has potential to produce the Bourbon and other geranium oil qualities • Essential oil may be able to keep blood pressure steady • Recent study showing topical geranium oil can reduce post-shingles pain 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Reputation for producing a variable product • Production volume too small to achieve better Price negotiations • Not much known science for dietary supplement applications
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Certified organic essential oil for use in aromatherapy and cosmetics 	<p>THREATS</p> <ul style="list-style-type: none"> • Competition with other producers, France, China and Egypt.

<ul style="list-style-type: none"> • Relatively limited producers of geranium 	
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3.2.2 Functional Food SWOT Analysis:

STRENGTHS <ul style="list-style-type: none"> • Indigenous to Africa/Madagascar • Used in fragrances, aromatherapy, cosmetics as well as for flavor industry—wide industry applications • Essential oil commands high price and the price is consistent. • Steady demand for oil • Has potential to produce the Bourbon and other geranium oil qualities • Essential oil may be able to keep blood pressure steady • Already used as a flavor in foods, so it is GRAS • For aromatherapy it is considered beneficial for a number of applications, including for PMS and related symptoms, congestion and acne. 	WEAKNESSES <ul style="list-style-type: none"> • Reputation for producing a variable product • Production volume too small to achieve better Price negotiations • Not much known science for functional food applications • How to get proprietary positions? • Are all extracts considered GRAS?
OPPORTUNITIES <ul style="list-style-type: none"> • Certified organic essential oil for use in aromatherapy and cosmetics • Relatively limited producers of geranium • Strong scent so small quantities are needed only, good for cosmetics/ body care 	THREATS <ul style="list-style-type: none"> • Competition with other producers, France, China and Egypt.

3.2.3 Body Care & Cosmetics SWOT Analysis:

STRENGTHS <ul style="list-style-type: none"> • Indigenous to Africa/Madagascar • Used in fragrances, aromatherapy, cosmetics as well as for flavor industry—wide industry applications • Essential oil commands high price and the price is consistent. • Steady demand for oil • Has potential to produce the Bourbon and other geranium oil qualities • Essential oil may be able to keep blood pressure steady • Recent study showing topical geranium oil can reduce post-shingles pain • Always of high demand 	WEAKNESSES <ul style="list-style-type: none"> • Reputation for producing a variable product • Production volume too small to achieve better Price negotiations • Not much known science for dietary supplement applications
OPPORTUNITIES	THREATS

<ul style="list-style-type: none"> • Certified organic essential oil for use in aromatherapy and cosmetics • Relatively limited producers of geranium 	<ul style="list-style-type: none"> • Competition with other producers, France, China and Egypt.
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3.3 Ginger

3.3.1 Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Much good research and some public awareness that ginger has health benefits • Clinical studies on anti-nausea and gastrointestinal distress symptoms • Good for soothing and warming body during a cold/flu • Clinically proven to induce sweating, also able to boost immune action. • Proof that it is a good antioxidant and anti-inflammatory • Clinically proven to help in cases of osteoarthritis and rheumatoid arthritis. • Clinically shown to reduce the risk of colorectal cancer • Overall perception that ginger is safe and even o.k. for pregnant women to consume • Market is highly developed 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Market is highly developed, not many opportunities for exciting new products • How do companies get a proprietary position?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Development of Chai spice blends and extractives to enter non-traditional markets • Good opportunities for “fair-deal” type products, especially as this is one of the only ways to differentiate products or make them proprietary • Low chances for new qualities • Development of anti-nausea preparations, especially for pregnant women • Cold/Flu formulations • Arthritis formulations 	<p>THREATS</p> <ul style="list-style-type: none"> • Strong traditional growers around the world with high quality—how to differentiate Madagascar? • A number of ginger products already exist on the market, so how do we compete?

3.3.2 Functional Food SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Much good research and some public awareness that ginger has health benefits 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Market is highly developed, not many opportunities for exciting new products • How do companies get a proprietary
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<ul style="list-style-type: none"> • Clinical studies on anti-nausea and gastrointestinal distress symptoms • Good for soothing and warming body during a cold/flu • Clinically proven to induce sweating, also able to boost immune action. • Proof that it is a good antioxidant and anti-inflammatory • Clinically proven to help in cases of osteoarthritis and rheumatoid arthritis. • Clinically shown to reduce the risk of colorectal cancer • Overall perception that ginger is safe and even o.k. for pregnant women to consume • Market is highly developed • Ginger is GRAS so it is O.K. in foods 	<p>position?</p> <ul style="list-style-type: none"> • Maybe people already see it as food too much, and not strong enough for producing medicinal effect?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Development of Chai spice blends and extractives to enter non-traditional markets • Good opportunities for “fair-deal” type products, especially as this is one of the only ways to differentiate products or make them proprietary • Low chances for new qualities • Development of anti-nausea preparations, especially for pregnant women • Cold/Flu formulations • Arthritis formulations • According to manufacturers, ginger oil (fresh) from Madagascar is unique and offers a different (and good) flavor and fragrance profile than other sources. 	<p>THREATS</p> <ul style="list-style-type: none"> • Strong traditional growers around the world with high quality—how to differentiate Madagascar? • A number of ginger products already exist on the market, so how do we compete? • Are new extracts of ginger considered GRAS?

3.3.3 Body Care & Cosmetics SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Much good research and some public awareness that ginger has health benefits • Clinical studies on anti-nausea and gastrointestinal distress symptoms • Good for soothing and warming body during a cold/flu • Clinically proven to induce sweating, also able to boost immune action. • Proof that it is a good antioxidant and anti-inflammatory 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Does it work the same when given in topical applications? • Does the essential oil have similar benefits? • What body care and cosmetic applications could provide functionality? • Application research needed. • How do companies get a proprietary position?
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<ul style="list-style-type: none"> • Clinically proven to help in cases of osteoarthritis and rheumatoid arthritis. • Clinically shown to reduce the risk of colorectal cancer • Overall perception that ginger is safe and even o.k. for pregnant women to consume 	
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Good opportunities for “fair-deal” type products, especially as this is one of the only ways to differentiate products or make them proprietary • Low chances for new qualities • Development of anti-nausea preparations, especially for pregnant women • Cold/Flu formulations • Arthritis formulations • According to manufacturers, ginger oil (fresh) from Madagascar is unique and offers a different (and good) flavor and fragrance profile than other sources. 	<p>THREATS</p> <ul style="list-style-type: none"> • Strong traditional growers around the world with high quality—how to differentiate Madagascar? •

3.4 Ravintsara

3.4.1 Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Good sustainable African/Madagascar product story • Strong traditional use • Not well known to market, so we could generate excitement around it being “new” • Used as an anti-viral and nerve tonic, but also useful for respiratory and immune-system aid. • Leaves have traditional use for rheumatism. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Confusion with Ravensara which has reputation as over-harvested • Needs lots of consumer/industry education because it is virtually unknown • What kind of applications would it work in? • What are its active components
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • possibility of development for many market channels • grassroots “Madagascar-unique” products. • A type of Cinnamomum—maybe we can link it to cinnamon products? 	<p>THREATS</p> <ul style="list-style-type: none"> • Confusion with Ravinsera • Not much of any science • Probably not listed in Herbs of Commerce—do we need New Dietary Ingredient application? • Would other African countries then compete with cheaper product if we developed the market?

3.4.2 Functional Food SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Good sustainable African/Madagascar product story • Strong traditional use • Not well known to market, so we could generate excitement around it being “new” • Used as an anti-viral and nerve tonic, but also useful for respiratory and immune-system aid. • Leaves have traditional use for rheumatism. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Confusion with Ravensara which has reputation as over-harvested • Needs lots of consumer/industry education because it is virtually unknown • What kind of applications would it work in? • What are its active components
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • possibility of development for many market channels • grassroots “Madagascar-unique” products. • Possibly O.K. for U.S. market because of strong traditional food use? • A type of Cinnamomum—maybe we can link it to cinnamon products? 	<p>THREATS</p> <ul style="list-style-type: none"> • Confusion with Ravinsera • Not much of any science • Not listed as GRAS—how much food use does this have, and do we need to do a GRAS notification? • Would other African countries then compete with cheaper product if we developed the market?

3.4.3 Body Care & Cosmetics SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Good sustainable African/Madagascar product story • Strong traditional use • Not well known to market, so we could generate excitement around it being “new” • Used as an anti-viral and nerve tonic, but also useful for respiratory and immune-system aid. • Leaves have traditional use for rheumatism. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Confusion with Ravensara which has reputation as over-harvested • Needs lots of consumer/industry education because it is virtually unknown • What kind of applications would it work in? • Does it have the same benefits for topical use or for use of essential oil? • What are its active components?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • possibility of development for many market channels • grassroots “Madagascar-unique” products. • A type of Cinnamomum—maybe we can link it to cinnamon products? 	<p>THREATS</p> <ul style="list-style-type: none"> • Confusion with Ravinsera • Not much of any science • Do cosmetic companies need more safety and toxicology data? • Would other African countries then compete with cheaper product if we developed the market?

3.5 Eucalyptus

3.5.1 Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> Well known by American public as the tree and also the scent and some possible applications Known to be useful for lessening coughs, bronchitis and rheumatism. Already in over-the-counter products for aches and pains Good temporary relief for colds and flus Listed in the German Commission E for catarrhs of the respiratory tract 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> not really exclusive in any way to Madagascar doesn't really promote sustainability of Madagascar Eucalyptus supplementation is not seen as advisable for children, adolescents, chronically ill people or those who are pregnant. May effect the metabolism of drugs such as phenobarbital, aminopyrine and amphetamine by the liver Not very strong science to prove applications How do companies get a proprietary position?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> May be opportunities in cough and cold/flu medications May be opportunities in pain formulations 	<p>THREATS</p> <ul style="list-style-type: none"> seen by some peoples as a scourage on native plants and ecosystems—may impart this to product image.

3.5.2 Functional Food SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> Well known by American public as the tree and also the scent and some possible applications Known to be useful for lessening coughs, bronchitis and rheumatism. Already in over-the-counter products for aches and pains Good temporary relief for colds and flus 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> not really exclusive in any way to Madagascar doesn't really promote sustainability of Madagascar Eucalyptus supplementation is not seen as advisable for children, adolescents, chronically ill people or those who are pregnant. May effect the metabolism of drugs such as phenobarbital, aminopyrine and amphetamine by the liver Not very strong science to prove applications How do companies get a proprietary position? Are all extracts considered GRAS?
<p>OPPORTUNITIES</p>	<p>THREATS</p>

<ul style="list-style-type: none"> • May be opportunities in cough and cold/flu medications • May be opportunities in pain formulations 	<ul style="list-style-type: none"> • seen by some peoples as a scourge on native plants and ecosystems—may impart this to product image. • Are any extracts considered GRAS? • Flavor and aroma may be too strong for food formulations
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3.5.3 Body Care & Cosmetics SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Well known by American public as the tree and also the scent and some possible applications • Known to be useful for lessening coughs, bronchitis and rheumatism. • Already in over-the-counter products for aches and pains • Good temporary relief for colds and flus • Generally known for its insect repellent properties 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • not really exclusive in any way to Madagascar • doesn't really promote sustainability of Madagascar • Eucalyptus supplementation is not seen as advisable for children, adolescents, chronically ill people or those who are pregnant. • May effect the metabolism of drugs such as phenobarbital, aminopyrine and amphetamine by the liver • Not very strong science to prove applications • How do companies get a proprietary position?
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • May be opportunities in cough and cold/flu topical medications • May be opportunities in topical sports formulations • May be opportunities in topical pain formulations • May be opportunities for use as topical insect repellent 	<p>THREATS</p> <ul style="list-style-type: none"> • seen by some peoples as a scourge on native plants and ecosystems—may impart this to product image. • May be too irritating for many people to use

3.6 Cinnamon

3.6.1 Dietary Supplement SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • New technologies and applications are being developed in several trade channels. • New research showing it is a good anti-diabetic as well as anti-inflammatory • An excellent source of manganese, and a very good source of dietary fiber, 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Can takes four to five years till first harvest, though some groups are able to harvest bark much sooner. Fewer years may led to lowered cinnamicaldehyde contents. • Some seasonality to demand of products because cinnamon's warming winter nature.
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<p>iron, and calcium.</p> <ul style="list-style-type: none"> • Due to nutritional qualities (calcium and fiber) it is good for prevention of colon cancer. • Clinically proven anti-clotting action. • The essential oils of cinnamon are anti-microbial in nature • Cinnamon’s aroma has been proven to boost brain activity and help with brain function/ cognitive performance • One of the oldest spices known and has great story. 	<ul style="list-style-type: none"> • Would be hard to find a proprietary position.
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Development of Chai spice blends and extractives to enter non-traditional markets • Development of products high in cinnaldehyde for anti-clotting action and cardiovascular products? • Development of antidiabetic product formulations! • Very sought after right now in dietary supplement/functional food industries for blood sugar activity • May be able to develop extracts or products high in the various active components and/or nutritional components. • May be able to differentiate cinnamon from Madagascar that is “fair deal” • Good story to promote products 	<p>THREATS</p> <ul style="list-style-type: none"> • Perception of pre-processed cinnamon as loosing its quality faster. • Have to compete with other countries who produce high quality cinnamon, especially Sri Lanka and Chinese.

3.6.2 Functional Food SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • New technologies and applications are being developed in several trade channels. • New research showing it is a good anti-diabetic as well as anti-inflammatory • An excellent source of manganese, and a very good source of dietary fiber, iron, and calcium. • Due to nutritional qualities (calcium and fiber) it is good for prevention of colon cancer. • Clinically proven anti-clotting action. • The essential oils of cinnamon are anti-microbial in nature • Cinnamon’s aroma has been proven to 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Can takes four to five years till first harvest, though some groups are able to harvest bark much sooner. Fewer years may led to lowered cinnamicaledehyde contents. • Some seasonality to demand of products because cinnamon’s warming winter nature. • Would be hard to find a proprietary position.
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<p>boost brain activity and help with brain function/ cognitive performance</p> <ul style="list-style-type: none"> • One of the oldest spices known and has great story. 	
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Development of natural preservatives? • Development of Chai spice blends and extractives to enter non-traditional markets • Development of products high in cinnaldehyde for anti-clotting action and cardiovascular products? • Development of antidiabetic product formulations! • Very sought after right now in dietary supplement/functional food industries for blood sugar activity • May be able to develop extracts or products high in the various active components and/or nutritional components. • May be able to differentiate cinnamon from Madagascar that is “fair deal” • Good story to promote products 	<p>THREATS</p> <ul style="list-style-type: none"> • Perception of pre-processed cinnamon as loosing its quality faster. • Have to compete with other countries who produce high quality cinnamon, especially Sri Lanka and Chinese. • Flavor may be too strong for natural preservatives • Flavor may be too strong for creating truly functional products. • Would all extracts of cinnamon be considered GRAS?

3.6.3 Body Care & Cosmetics SWOT Analysis:

<p>STRENGTHS</p> <ul style="list-style-type: none"> • New technologies and applications are being developed in several trade channels. • New research showing it is a good anti-diabetic as well as anti-inflammatory, may work for topical applications? • Clinically proven anti-clotting action. • The essential oils of cinnamon are anti-microbial in nature • Cinnamon’s aroma has been proven to boost brain activity and help with brain function/ cognitive performance • One of the oldest spices known and has great story. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Will it work for topical applications? • Does it provide functionality when used as essential oil or in topical formulations? • Can takes four to five years till first harvest, though some groups are able to harvest bark much sooner. Fewer years may led to lowered cinnamaledhyde contents. • Some seasonality to demand of products because cinnamon’s warming aroma and association with winter. • Would be hard to find a proprietary position.
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Development of natural preservatives for natural cosmetics? • Development of Chai spice blends and extractives to enter non-traditional markets—also popular in body care market 	<p>THREATS</p> <ul style="list-style-type: none"> • Perception of pre-processed cinnamon as loosing its quality faster. • Have to compete with other countries who produce high quality cinnamon, especially Sri Lanka and Chinese. • Aroma may be too strong for natural

<ul style="list-style-type: none">• May be able to develop extracts or products high in the various active components and/or nutritional components.• May be able to differentiate cinnamon from Madagascar that is “fair deal”• Good story to promote products	<p>preservatives?</p> <ul style="list-style-type: none">• Would cosmetic companies need to do more toxicology and safety studies?
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4.0 Public Relations for the Natural Product & Non-Traditional Markets

4.1 The Importance of Public Relations for Madagascar

Public Relations will be an important component in helping to create our success because it will serve as a key that opens many doors to the designated target markets hearts and minds. It can generate financial gain and build long-term benefits in terms of creating a buzz about Madagascar and its spices and essential oils. Skilled use of public relations can provide an opportunity to market to scores of people at one time. Newspapers, magazines, radio, TV and the Internet all provide access to the buying public. A well-placed article or cable newscast interview can provide instant recognition and credibility. In addition, from time to time there is misinformation in the mainstream media about Natural products from other countries. Public Relations will develop, control and protect all messages about the products and suppliers involved.

Our media outreach strategy is a two-prong approach in that it targets both trade (wholesalers) and the consumer media (buying public). Justification for including the indirect buying public market is to utilize the powerful tools of buzz and tipping points. The marketing of the film, Madagascar realizes the importance of buzz and we are piggybacking off of that marketing. Buzz has recently been studied in a very detailed and pragmatic manner. A systematic review by Renee Dye (in the Harvard Business Review) guides us to identify the potential paths for buzz. Once these paths are known, Dye suggests using simulations that show the flow of information from one group to another. Our media strategy is doing precisely as Dye directs.

In addition, according to *Effective Public Relations*, (Prentice Hall – 6th Edition) Effective communication must be designed for the situation, time, place and audience. Repetition of a consistent message in simple form, and targeting a variety of media that converge on the audience from several avenues is essential. Tipping points and buzz meld into a powerful strategy to drive the key messages.

After performing an initial media audit, it has been determined that the BAMEX project is very newsworthy and has multiple stories for a continuum of media (general interest, general business, lifestyle, food and travel). The BAMEX project for non-traditional markets has the potential to get substantial coverage in a range of media outlets that reach our target audiences. It also has the potential to be sustainable for many months.

4.2 PR Strategy for Reaching the Non-Traditional Markets

Working with the news media, we will take advantage of the build up in media during the successful launch of the film *Madagascar*. We will create opportunities for publicity to assist in building identity and brand recognition. We will convey our news to all media contacts which include more than 10,000 individual editors and producers. We will create a buzz about the country of Madagascar and its unique spices and essential oils.

Action Plan:

- Develop story lines and key messages
- Create favorable media placements in the US market
- Strengthen national brand identity by generating positive media to extend the reach of other outreach efforts such as advertising
- Develop angles, backgrounders and stories
- Prepare publicity materials
- Set schedule for outreach
- Prepare exclusive media list
- Pitch media – nonstop effort
- Prepare spokesperson for interviews
- Conduct debriefing session with spokesperson

- Demonstrate through the media that Madagascar is a country that has been part of our lives for a long time. i.e. cinnamon usage
- Get across that it's spices and essential oils are the finest in the world
- Convey the richness of the island and it's unique flora and fauna
- Create a buzz about the culture, the country and Madagascar as an important emerging market
- Follow up

4.3 Initial Results of our First PR Efforts

In the very initial phase of this project (before our first news release) we have created interest with a popular health journalist, Dr. Meg Jordan who is also known as The Global Medicine Hunter. She is embarking on a PBS television series entitled *The Global Medicine Hunter* and her production company has given her permission to do her first program on Madagascar. She will focus on the healing properties of cinnamon and it's anti-inflammatory effects. She may also include other spices and their medicinal qualities.

This will reach millions of viewers on public television in the United States. Dr. Jordan would like to travel to Madagascar to record her program.

Dr. Jordan plans to also interview one of our spokespeople (discussing Madagascar spices and essential oils) on her syndicated radio show which airs on the following stations or locations:

- Colorado - KWYD-AM 1580
- Monterey, Salinas, Santa Cruz, CA KOMY -AM 1340
- Boston WBNW-AM 1120
- Chicago area WKKD-AM 1580 and WMCW-AM 1600
- Richmond, VA - WTOX-AM 1480
- Central Florida:
 - WKFL-AM 1179 (Bushnell/Casselberry)
 - WWFL-AM 1340 (Orlando DMA)
 - WREY-AM 780 (Tampa DMA)
 - WIPC -AM 1280 (Tampa DMA)
 - WAVP-AM 1390 (Okeechobee)
- Syracuse, NY
- Winston-Salem, NC
- Las Vegas, NV

In addition, we have secured a five minute interview of a San Francisco Bay Area Malagasy-American businessman, Roger Rakotomalala. Mr. Rakotomalala was interviewed by San Francisco journalist Jack Hansen for a CNN Headline News Comcast Local Edition that will be aired about 13 times during the month of July. The interview focused on Madagascar and its role in our lives with its spices and essential oils.

We have also just completed the first news release and it went out on June 27th. . Our story line dovetails on the popularity of the film, reflecting the BAMEX program and the essential oils and spices of Madagascar. The release was out sent through Market Wire (an electronic media service) to over 10,000 media outlets. A search of the title of the release at www.yahoo.com demonstrates that the release has penetrated deeply into our designated markets. From mainstream media such as www.msnbc.msn.com and Yahoo to websites listed under cosmetics, linens, aroma therapy, essential oils, cinnamon, medical aromatherapy, candle therapy, skin care and beauty, massage oils, fleur aroma therapy, aroma therapy products, aroma therapy suppliers, essential oils suppliers and the people & history of Madagascar, our release has been posted.

The concomitant press release, along with the launch of our website (www.madagascarnatural.com) is helping to drive interested companies to us, as well as generate more consumer articles and programs that may be

planned by the media at large. We expect these efforts together will have a synergistic effect in helping us to expand the presence of Malagasy products in the U.S. non-traditional markets.

5.0 Initial Contacts with Manufacturers/Distributors

5.1 Selection Criteria for Companies Contacted

The companies contacted are representative of the broad nature of the natural products markets, consisting of dietary supplement, functional food, and body care & cosmetic companies. Although there are few contacts yet made in the handicrafts area, this is largely due to the fact that we have no samples yet with which to make potential linkages.

5.2 Prices & Terms of Sale

Typical prices and terms of sale have been discussed for the commodity spices and essential oils, however, this report is focusing on capturing value. Therefore, there are no typical product prices, rather the commodity product price can act as a starting place for the lowest a product can be procured. Once steps of processing or “fair deal” aspects are added to a product, we expect these will add price accordingly.

There is no set formula for how much additional value organically certified or "fair deal" certified products can fetch and where in the supply chain this additional value is placed. However, since these kinds of programs have to involve—by necessity—the growers, harvesters and producers directly, the benefits are most often directed, at least in part to them. Growers, harvesters and producers (processors) are the ones adopting the standards required for organic and sustainable certification, and as a result are paid a higher price for their products. Another benefit of this kind of certification is that some middlemen can be removed from the value chain as the producers will deal more closely with the customers for these products. In many cases the grower/producer also becomes the exporter, dealing directly with the customers and in some cases even establishes partnership programs with the customers. Partnership programs are exciting in that they provide greater involvement and loyalty of the customer, direct relationship, including financial relationship, and possibly direct investment into the program being jointly developed.

Once the relationship between the producer/exporter and the importer/buyer is established, commercial terms are negotiated. Typically speaking, these terms include the conditions and requirements of sale, terms for payment, form of payment and so on. The conditions and requirements have been discussed previously under the Standards section (See **Section 1.0**). Once there is an agreement to sell, a series of terms and conditions are set forth and agreed upon. These include:

- Clear description of goods or services to be delivered
- Quantity to be shipped
- Price - The price agreed to sell the product at, per unit and as a total
- Cost of Shipping - Can be an estimate
- Point of Custody - Who pays for shipping and at what place or point the product shifts hands or custody? This is often expressed as FOB (Free on Board) point or if the product is to be delivered to the customer can be expressed as CIF (Cost, Insurance and Freight) or C&F (Cost & Freight)
- Term of Payment - How much time prior to, or after shipment payment should be made
- Form of Payment - Will payment be made by Letter of Credit (LOC), Wire Transfer, check, money order and so on
- Shipping Point - Where the product is shipping from
- Delivery or Ship Date - When the product is expected to ship or be delivered
- Discounts and Credits if any - Discounts can be offered for early payments or return of goods

These terms and conditions are set in a contract or in an invoice.

5.3 List of Contacts and Status of Follow Up—Market Linkages and Partnerships

Company	Products they Buy or Specialize in?	Interest/ Comments	Follow Up?
Ray Cooper, Ph.D. VP of Botanical Research Herbalife rcoperphd@aol.com (650) 248-6127	This is an MLM (multi-level marketing) company—they have an extensive line covering all aspects of health. Botanicals-oriented.	Doesn't see any immediate interest by Herbalife.	Only if there are new innovative or strong products.
Larry Brucia Focus Sales & Marketing San Anselmo, CA Consultant to Whole Foods , and many companies. Creator of many products including Trail Mix Cel- (415) 269-2548	Larry is an innovator in the industry, and helps with product launches and innovations.	Got intrigued by Madagascar Eos a while ago, and hasn't done anything since. Has a company he is working with he thinks would be perfect, but they are at very nacent stages right now.	Let's keep in touch as the company matures. May be a great fit.
Diana Fort Head Buyer NuSkin/Pharmanex South San Francisco dfort@pharmanex.com	This is a very large MLM company with extensive line of products, covering all aspects of health.	She has forwarded email to the R&D team and they are looking it over.	She said she would get back to me if interest.
Nitesh Khakhar President of Health Aid, USA Foster City, CA niteshkhakhar@yahoo.com	A line of singe herbal extracts—mostly European and standardized. They have largest selling Eleuthro on market	He sent email to R&D group in UK (Health Aid UK is parent company) to see if they are interested.	He said he would let me know if they are interested.
Nan Fuchs, Ph.D Editor, Women's Health Letter PO Box 1365 Sebastopol, CA 95473 http://www.womenshealthletter.com	This newsletter goes out to a targeted group of baby-boomer aged women. She features new innovative products and companies for this category.	Said she would be interested if we had something that was well-researched (had clinical studies) and is fairly new/innovative.	Once products have more technical story, can follow up.
Dr. Zakir Ramazanov Pharmline (845) 469-6143 medicine@frontiernet.net	Distributor and Manufacturer of botanicals. Does research on cutting edge botanicals. Created Rhodiola for this market.	He was very enthusiastic. Says they have extraction facilities on coast of Africa and Canary Islands...so Madagascar would be	Yes!! Wants more extensive list of products and scientific/ application

		convenient. Interested in doing R&D long-term project and wants to do HPLC/ Fingerprinting of products (technique for quality control). Maybe could also help train universities (see www.polinat.com)	review
Tony Evans & Steve Hill US-Nutra/ Valensa Florida	Manufacturer. Biggest CO2 extraction facility in US. Interested in new product development	Already buys Tagetes oil and sliced organic ginger root-- may want to switch supply to Madagascar. Interested in doing some R&D on spices.	Follow up with R&D ideas. Also prices on cassia?
Dr. Isaac Eliaz President IELIAZ@prodigy.net (also Emma Mann, Marketing Director, and John Guardino, R&D Director) EcoNugenics & Better Health Publishing Santa Rosa, CA www.econugenics.com www.dreliaz.com	Line of herbal products and proprietary formulas. Does much of own clinical research.	Loves the idea of the Madagascar project!!! Says this is the type of product he wants to take on (the community supported aspect).	Wants to work with this project on long term. Follow up. Wants to develop the community supported aspect of products.
John Harrison EcoTrend San Rafael, CA also B.C., Canada 604-876-9876 ext 201.	Distributor of many herbal products. Mainly in Canada, but increasing in U.S.	Very interested in this opportunity for new products. He has just developed a new branding model for his company, and they are going to exclusively work on products that have community sustaining angle and environmental responsibility. He thinks this project fits perfectly and wants to work with us.	He is sending his branding model in a couple weeks and wants to share it with us. He would like to be in touch with us along the development of products.
Barb Apps President Diamond Lotus EO Mount Shasta, CA appsbarb@usa.net	A line of very high quality EOs grown in CA. Targeted at high-end Spas	Maybe interested in these EOs	Call later in the Summer once she can get into more product development.

<p>Joseph Brinkman jbrinckmann@tradmed.com VP of R&D Traditional Medicinals Sebastopol, CA (707) 824-6759</p>	<p>High quality medicinal tea company. They are very particular on quality and don't just shop on price alone.</p>	<p>According to Joseph: in most cases we have long-established sources that meet our quality standards; for example organic cinnamon (from Vietnam), organic clove flower buds and organic black pepper fruit (from Indonesia via ForesTrade), and organic ginger rhizome (through a community project they support at Ambootia Estate in India). The wild collected gotu kola herb that we use is from Madagascar. It is the only material that we have found that conforms to the standards specified in the European Pharmacopoeia Centella monograph. All Chinese and Indian samples we have assayed have failed the monograph requirement for total triterpenoid derivatives (not less than 6.0%). We use very little Centella however. In any case, we would be interested in Centella that has some fair deal type certification, as long as the material conforms to the monograph quality standards. We obtain our Centella via Martin Bauer GmbH in Germany and they arrange the wild collection in</p>	<p>Yes</p>
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		Madagascar. So, if I had samples and documentation about the program, I can pitch it to them to consider as an alternate source for our supply.	
Steven King, Ph.D. VP of Ethnobotany and Product Development Napo Pharmaceuticals sking@pspharma.com	They are now a pharmaceutical company focused on developing pharmaceutical drugs from natural sources. They also have one dietary supplement product.	They do not use any of these products, and does not see it as a fit for their current direction. Although he loves the community supporting angle.	No.
Michael Tempesta, Ph.D. Phenolics, Inc. South San Francisco, CA natprod@aol.com	Line of high quality, high phenolic extracts—mostly fruits	Very interested in any high phenolic potential EO or spices. Esp. interested to look at cinnamon because he is already doing a 30% total phenolics cinnamon product.	Wants me to call later in month.
Roy Upton Herbalist & Formulator Planetary Formulations/Threshold Ent. American Herbal Pharmacopoeia (AHP) Scotts Valley, CA herbal@got.net	Large line of botanicals and formulas	Is not interested in EOs or any products listed. Does very little with Centella.	No
Thierry Jones Pres. US Division Diana Vegetal USA (parent company is French) New York tjones@dianavegetalusa.com	Large supplier of specialty fruit and vegetable extracts. Some colors. Mostly for food industry	Forwarded email to French R&D team to see if there is interest.	Yes.
Barbara Bruckner Mattison Foster City, CA barbara@foodcom.com	Well known marketing and product development consulting house.	Will talk to me soon—interested.	Yes
Tom Bohager (President of both	Lines of high quality enzymes.	Does not see immediate fit.	Yes.

companies) Kalyna Hanover (Director of Marketing) Enzymedica & Theramedix tombohager@usa.net	Enzymedica is a retail line and Theramedix is only a professional line. They use some herbs in formulations.		
Rosa P. Ubillas, Ph.D. Group Manager - Analytical Research Shaklee Corporation 1992 Alpine Way, Hayward CA 94545 phone: 510-780-5898 fax: 510-887-8583 rubillas@shaklee.com	An MLM company with long history and wide variety of products.	Has forwarded email to research group. Under consideration.	Yes.
Brian Keating Sage Group Seattle, WA Sagebk@aol.com	Herbal tea retail and formulations. Also publishes the annual tea report.	Is very interested and wants to call me later.	Yes.
Dennis McKenna, PhD Product Development Consultant St. Croix, MN djmckenna@earthlink.net	Product developer and consultant. Professor at U of Minnesota	Formulating children's line—no immediate need.	Yes
Lin Visser Simply H Los Angeles, CA Also, Arruba Lin@Simplyh.com	Children and Infant formulas	No immediate interest.	Yes.
Alex Moffett Renaissance Herbs Carlsbad, CA renherbs@adsl.loxinfo.com	Full line of Ayurvedic herbs and some Asian herbs	Yes, wants to talk to me further. He is located in Bangkok, so will call me.	Yes
Martin Almao VP of Marketing Seattle's Best Coffee martin.almao@cox.net	High quality coffee and some supplements	Thinking about it.	Yes
Qun Yi President and CEO Pureworld Botanicals (201) 440-7411 fax (201) 342-8000	Full line of botanicals and extracts—large raw material supplier of industry.	He is interested in any new discoveries and things from Madagascar.	Yes, I told him I would give him more complete chart later this month or next.
Chris Daugherty Essential Living Foods Miami, Florida (805) 528-4176	Line of botanicals, fruits and spices. Esp. interested in organics and sustainability.	Organics—potentially direct sustainable relationships. Interested in all Spices, vanilla and nuts	Yes
Greg Pennyroyal Consultant to the Industry and Product Developer	Is involved with developing countries and bringing new	Very interested in Madagascar and wants to talk to me about his ideas	Yes, we are scheduling a call.

Temecula, CA	products to market. Has been good at getting grants to develop traditional medicines		
Keith Nakakura Product Development Manager – Jamba Juice – San Francisco, CA	Fruit Juice Smoothies in own stores	Interested in possible supply links, must develop HAACP	Scheduling call
Amy D. Mitchell – VP Marketing – The Chemins Company – Colorado	Dietary Supplements Contract Manufacturer	Interested, please keep informed	Yes
Ben Cohen – VP – Sweet Productions – Amityville, NY	Manufacturer of Nutritional Bars	Interested, please keep informed	Scheduling call
Bob Schorr	Consultant, Flavorist	Yes, how can he help?	Yes
David C Lytle – QC Manager – HerbPharm – Oregon	Manufacturers of Tinctures and Herbal Extracts	Interested in new products and organics	Yes
David Solomon – President – BDS Naturals – Long Beach	Importer and distributor of botanicals, miller, blender and repackaging	Very interested, especially in organics, please call	Scheduling call
Nutrilitte Ingredients – Division of Access Business Group – Buena Park, CA	Manufacturer of Nutritional and Dietary Supplement for the Amway/Quixtar brands	Interested, please keep informed of developments	Scheduling call
Eileen Mangano – Purchasing Manager – Garden State Nutrition – New Jersey	Contract Manufacturer of Dietary Supplements	No current needs but interested	Yes
Grant Washington- Smith – Senior Manager Product and Concept Development- Alticor – Ada, MI	Corporation behind Amway and Quixtar	Very interested in spices, essential oils, spa products, organic products and so on	Scheduled additional calls
Jean Quon – Director of Purchasing – Leiner Health Products	Contract Manufacturer and Private Label Manufacturer	No response yet	
Jeff Wuagneux – President – RFI Ingredients – Blauvelt, NY	Developer, Manufacturer and Distributor of specialty supplement and food products	Very interested, will follow up further	Scheduled additional calls

Jeffrey F Lehman – President – Shanks – Pennsylvania	Manufacturer of Vanilla extracts	No response yet	
Lloyd Scott – COO – Trout Lake Farm – Washington State	Grower and distributor of organic botanicals	No response yet	
Mark Blumenthal - President of American Botanical Council and Publisher of Herbal Gram	Publisher of HerbalGram and non-profit botanical organization	Very interested in supporting the developments, including publishing articles and so on.	Yes
Nick Bain – VP Sales – BI Nutraceuticals – Long Beach	Importer, Manufacturer and Distributor of Botanical ingredients	No response yet	
Paul M Flowerman – President – PL Thomas – New Jersey	Importer, Manufacturer and Distributor of Nutritional and Supplement Ingredients	No response yet	
Preman Brady – President – Exalted Extracts	Manufacturer of Specialty extracts, essential oils and emulsions,	No response yet	
Rebecca Wright – Editor – Nutraceuticals World Magazine	Publisher of trade magazine	No response yet	
Stephen Sturm – VP New Product Development – Threshold Enterprizes – Santa Cruz, CA	Manufacturer and Distributor of a broad range of supplements under various brands	Very interested would like to present concept to entire company and take advantage of timing	Scheduling a call
Steven Dentali – VP Scientific Affairs – AHPA (American Herbal Products Association) – Washington DC	Trade Organization	Happy to lend his support	Yes
Jim Roufs – Senior Product development Manager – Nutrilite Division – Access Business Group	Manufacturer of Dietary and Food Supplements under Amway’s brand	Interested in discussing opportunities from Madagascar	Scheduling a call
Susan Ramus - Infusion Biotechnologies, LLC – Palm Beach Florida	Manufacturer of Skin care and cosmetic products	Interested in learning more about the products we offer.	Yes
Ten Thousand Villages 704 Main Street P.O. Box 500	Handicraft distributor focusing on community		Scheduling a call

<p>Akron, PA 17501-0500 Tel: (717) 859-8100 Fax: (717) 859-2622 Email: inquiry.us@tenthousandvillages.com Website: www.tenthousandvillages.com <http://www.tenthousandvillages.com></p>	<p>supporting and fairtrade</p>		
<p>Frontier Natural Products Co-Op (including brands Aura Cacia and Simply Organic) P.O. Box 299 3021 78th Street Norway, IA 52318 Tel: 800 669-3275 or 303 774-9200 Fax: 800 717-4372 Email: Website: www.frontiercoop.com <http://www.frontiercoop.com></p>	<p>Large distributor of botanical raw materials</p>		<p>Scheduling a call</p>
<p>The Lebermuth Company, Inc. Rob Brown - VP Essential Oil Division or Larry S. Brown - President Tel: 800 648-1123 or: 574 259-7000 Fax: 574 258-7450 or: 800 852-4722 Email: info@lebermuth.com Website: www.lebermuth.com <http://www.lebermuth.com></p>	<p>Essential oil distributor</p>		<p>Scheduling a call</p>
<p>Young Living Essential Oils Thanksgiving Point Business Park 3125 Executive Parkway Lehi, UT 84043</p>	<p>Essential oil multi-level company</p>		<p>Scheduling a call</p>

<p>Tel: 800 3712928 Fax: 801 418-8800 Email: custserv@youngliving.com Website: www.youngliving.com <http://www.youngliving.com> or www.youngliving.us <http://www.youngliving.us></p>			
<p>Aubrey Organics Aubrey Organics 4419 N. Manhattan Avenue Tampa, FL 33614 Tel: 800 282-7394 Fax: 813 876-8166 Website: www.aubrey-organics.com</p>	<p>Cosmetic company that uses natural botanicals</p>		<p>Scheduling a call</p>
<p>Tri-K Industries Reno Del Dotto - President 151 Veterans Drive P.O. Box 128 Northvale, NJ 07647-0128 Tel: 201 750-1055 or: 800 526-0372 Fax: 201 750-9785 Email: Website: www.tri-k.com <http://www.tri-k.com></p>	<p>Large distributor of botanical raw materials</p>		<p>Scheduling a call</p>
<p>Jagadha Sivan – Product Design & Sourcing – World of Good – Berkeley, CA Jagadha Sivan 1380 Tenth Street Berkeley, CA 94710 Tel: 510.528.8400 Fax: 510.528.8440 Email: jagadha@worldofgood.com Website: www.worldofgood.com</p>	<p>Seller of sustainable Craft Products through kiosks in specialty retail shops</p>	<p>Very interested in developing direct sourcing ties – will be meeting shortly</p>	<p>First meeting scheduled for week of August 1 through 5</p>

6.0 Appendicies

Appendix A- Standards, Certification and Government Agency Links

US Governmental Agencies

FDA – Food and Drug Administration (<http://www.fda.gov/>)

USDA –United States Department of Agriculture (<http://www.usda.gov/wps/portal/usdahome>)

FTC – Federal Trade Commission (<http://www.ftc.gov/>)

BATF – Bureau of Alcohol, Tobacco, Firearms and Explosives (<http://www.atf.treas.gov/>)

ITDS – International Trade Data System – Treasury Dept. (<http://www.itds.treas.gov/US.htm>)

Current Federal Regulations US

Food, Drug and Cosmetic Act – (<http://www.fda.gov/opacom/laws/fdcaact/fdctoc.htm>)

DSHEA – Dietary Supplement Health and Education Act of 1994

(<http://www.fda.gov/opacom/laws/dshea.html>)

(<http://www.cfsan.fda.gov/~dms/dietsupp.html>)

Bio Terrorism Act of 2002 – (<http://www.fda.gov/oc/bioterrorism/bioact.html>)

Bio Terrorism Laws – Registration of facilities

(<http://www.cfsan.fda.gov/~furls/ovffreg.html>)

Cosmetics Regulations – <http://www.cfsan.fda.gov/~dms/cos-206.html>

<http://www.cfsan.fda.gov/~dms/cos-hdb1.html>

State Laws - Example

California Proposition 65 (<http://www.oehha.ca.gov/prop65.html>)

Industry Standards

cGMPs

Food GMPs (http://www.access.gpo.gov/nara/cfr/waisidx_99/21cfrv2_99.html)

Pharmaceutical GMPs (<http://www.fda.gov/cder/dmpq/cgmpregs.htm>)

GRAS List and “Approved Food Additives List” (<http://vm.cfsan.fda.gov/%7Edms/eafus.html>)

Organic

USDA Organic – NOP (National Organic Program)

(<http://www.ams.usda.gov/nop/indexIE.htm>)

OTA (<http://www.ota.com/index.html>)

NATIORA

(<http://marketstandards.chemonics.net/resources/Stories%20from%20the%20Field/LDI.asp>)

ISO 9000 series (<http://www.iso.org/iso/en/ISOOnline.frontpage>)

ISO 14000 series (<http://www.iso14000.com/>)

INCI – International Nomenclature of Cosmetic Ingredients

(<http://pharmacos.eudra.org/F3/inci/index.htm>)

Kosher

Dietary Supplements

NNFA – National Nutritional Foods Association (<http://www.nnfa.org/>)

USP – United States Pharmacopoeia (<http://www.usp.org/>)

NSF (http://www.nsf.org/business/certification_programs/)

ABC – American Botanical Council (<http://www.herbalgram.org/>)

CRN – Council for Responsible Nutrition (<http://www.crnusa.org/>)

HRF – Herb Research Foundation (<http://www.herbs.org/>)

AHP – American Herbal Pharmacopoeia (<http://www.herbal-ahp.org/>)

Spice Trade and Essential Oils

NAHA – National Association for Holistic Aromatherapy (<http://www.naha.org/Shop.htm>)

ASTA – American Spice Trade Association (<http://www.astaspice.org/index.cfm>)

AACC – American Association of Cereal Chemists (<http://www.aaccnet.org/>)

Cosmetics & Skin Care

CTFA – Cosmetic, Toiletry and Fragrance Association (<http://www.ctfa.org/>)

Regulatory information regarding Cosmetics and Skin Care -

<http://www.cfsan.fda.gov/~dms/cos-hdb1.html>

Sustainability

Rainforest Alliance (<http://www.rainforest-alliance.org/index.cfm>)

Fair Trade (<http://www.transfairusa.org/>)

SAI – Social Accountability International

(<http://www.cepa.org/Accreditation/CertificationBodies.htm>)

Crafts

CHA – Craft & Hobby Association (<http://www.hobby.org/>)

Links for toys - FTC <http://www.ftc.gov/bcp/online/pubs/buspubs/thread.htm>

Child Safety Protection Act of 1994 - <http://www.cpsc.gov/businfo/frnotices/fr94/94-56387.html>; <http://www.cpsc.gov/cpscpub/pubs/282.html>

**** NOTE** – This list of links is intended as a resource but should not be construed as the sum of all pertinent links to the topics above. Please use this list as a guide, but do not rely on it exclusively for a list of laws, regulations, associations or other resources.

5.2 Appendix B- Sample Raw Materials Questionnaires or Qualifications

RAW MATERIAL VENDOR QUESTIONNAIRE

Product Description: _____

Product Code: _____

Vendor Raw Material Name:

Vendor Raw Material Identification Number:

Raw Material Manufacturer(s) and site(s) of manufacture:_____

Authorized technical contact for obtaining material information:

This form is used as part of our vendor approval process. The material referenced above is either being considered for purchase or is currently purchased for use in our products. Please provide complete answers for all questions and return promptly. If any questions do not apply to the above stated material, please write "NA". The responses will be evaluated by the Quality Assurance Department.

GENERAL INFORMATION:

1. Check all appropriate classifications that apply to this raw material.

	FDA
	U.S. Pharmacopeia
	National Formulary
	FCC
	U.S. DIETARY INGREDIENT (marketed prior Oct. 15, 1994)
	U.S. NEW DIETARY INGREDIENT (marketed after Oct. 15, 1994)
	GRAS
	FOOD
	DRUG
	NON-GMO
	ORGANIC
	OTHER (specify below)

Other:

2. What is the country of origin of this raw material or the material it is derived from?

- If animal origin, attach your BSE statement.

3. If not provided in your raw material specification sheet, describe the physical factors of the raw material including general appearance, color, odor, form, and taste.

FOR VITAMINS, MINERALS, NUTRITIONALS, EXCIPIENTS, FLAVORS, AND COLORS, PLEASE ANSWER THE FOLLOWING QUESTIONS:

4. State the Chemical Name and CAS registry number. _____

- What is the empirical and structural formula? _____

- What is the molecular weight? _____
- 5. State the water of hydration on a molecular weight basis. _____
- 6. Is this raw material a blend or a pure substance? _____
- 7. Is this raw material sold as it exists in nature? If not, what is it derived from?

FOR BOTANICALS, PLEASE ANSWER THE FOLLOWING QUESTIONS:

- 8. State the Latin Binomial.
- 9. State the plant part used.
- 10. State the Drug:Native extract ratio (before excipients/carriers are added) and/or _____

Drug:Extract ratio (after excipients/carriers are added).

- 11. What is the country of origin of this raw material?
- 12. If not provided in your raw material specification sheet, describe the physical factors of the raw material including general appearance, color, odor, form, and taste.

FOR ENZYMES AND GLANDULARS, PLEASE ANSWER THE FOLLOWING QUESTIONS:

- 13. Is this raw material sold as it exists in nature? If not, what is it derived from?

- If animal origin, state animal type and organ/tissue it is derived from.

MANUFACTURING/PROCESSING:

- 1. Check all that apply to the manufacturing process of this raw material. If other, provide a brief one line description of the method used to manufacture this raw material.

	CHEMICALLY SYNTHESIZED
	EXTRACTION/PURIFICATIO

	N
	BLEND
	OTHER (specify below)

Other: _____

- List any reagents and solvents used.
- Do you test for consumer unfriendly residuals used in your manufacturing process (e.g. solvents)? If yes, what do you test for and what is the maximum level allowed?

2. Check all that apply to the following statement. This material is produced under:

	Drug cGMP's
	Food cGMP's
	HACCP
	ISO
	OTHER (specify below)

Other: _____

LABELING:

1. Are there any un-expired patents issued or patents pending on this material? If issued, state the patent number.

2. Check any additional added ingredients that apply to this material that would require our labeling them in accordance with U.S. regulatory law. If any of the below are checked, list the specific ingredient present and the amount added.

	Component	Ingredient present	Amount added
	Added sugars (e.g., fructose, sucrose, lactose, etc.)		
	Added NaCl (Sodium chloride)		
	Added antioxidants, preservatives		
	Added sulfites or sulfur		
	Added carriers		
	Added excipients		
	Added flavors (specify whether natural or artificial)		
	Added colors (specify whether natural or artificial)		
	Other (Specify)		

2. Attach nutritional information including, but not limited to total calories, calories from fat, total fat, saturated fat, cholesterol, sodium, total carbohydrate, dietary fiber, sugars, protein.

**ALLERGEN CHECKLIST FOR NUTRITIONAL SUPPLEMENT RAW MATERIAL
SUPPLIERS / MANUFACTURERS**

Please fill in the following chart for each material. The first column indicates the allergens that may be found in the material either by addition or by cross contamination. The second column indicates the allergens that are present in

other materials that are run on the same equipment but at a different time in your plant. The third column indicates whether any of those ingredients are present in your plant.

1. Please fill each square with YES or NO and when applicable, the name of the ingredient. Do not leave empty spaces.

COMPONENT	PRESENT IN THE MATERIAL	PRESENT IN OTHER MATERIALS MANUFACTURED ON THE SAME LINE	PRESENT IN THE SAME MANUFACTURING PLANT	NAME OF INGREDIENT WHEN APPLICABLE
PEANUTS (including peanut oil)				
TREE NUTS				
MILK AND DERIVATIVES (e.g., whey, milk, caseinate, etc.)				
EGGS				
FISH				
SHELLFISH				
SOYBEANS (except refined soy oil)				
CEREAL PROTEINS (e.g., Wheat, Barley, Rye, and Oats)				
GLUTEN				
YEAST				
CORN OR DERIVATIVES (contains protein identifiable as corn)				

2. Do you have effective procedures to avoid cross contamination of the material with the allergens not present in the material but noted in columns II and III?

3. If any part of the process is altered that would change the allergen status, you will be responsible for notifying Company of these changes.

TESTING AND ASSAYS:

1. Please attach the specification for the raw material and a typical Certificate of Analysis that will arrive with every lot received.

2. Check the objective tests that are conducted on the raw material. Include information on the tests and specifically mention the following if not addressed in the specification provided:

Frequency	Raw Material	Test Method(s)*	Specification
	Raw Material Identification		
	Key Component(s) **		
	Moisture		
	Particle Size		
	Microbial		

* Provide reference(s) and note whether the method is available to us.

** Note if result(s) are shown “as is” or “dried basis”

3. Does this material comply with the California Proposition 65, Safe Drinking Water and Toxic Enforcement Act of 1986? Include the typical daily dosage this is based on.

4. Check all that are tested on this material. If tested, list the typical range found and the frequency of testing.

	Typical Range	Frequency	Method
Lead			
Arsenic			
Cadmium			
Mercury			

5. Is the material treated/sterilized in any way (e.g., ethylene oxide, irradiation)? If yes, provide type of treatment and circumstances for treatment.

- Do you test for residual levels of chemical sterilizers, if used?
 - If yes, what is your maximum allowable level for each of these compounds present?
-

6. Do you test for pesticide, herbicide, fungicide, fertilizer, or any other agrochemical residuals that may be present in this material?

- If yes, what is your maximum allowable level for each of these compounds present?

SHELF LIFE AND STABILITY

1. State the shelf life of this raw material including the recommended storage conditions that apply.

- What percent degradation of the key component(s) is seen, held at your recommended storage conditions and as you package it, over the stated shelf life? Attach any supportive stability data if available.
- If data is not available, would you describe the material as (under recommended storage conditions):

	Very Stable
	Moderately Stable
	Moderately Unstable
	Very Unstable

- This raw material may be used in multivitamin/mineral/herbal formulations in the form of compressed tablets, capsules, and soft gelatin capsules. What is a typical range of overage you would recommend for this material?

PACKAGING

1. Company prefers materials to be packaged inside a primary shipping container. The material should be double bagged and sealed with a non-metal closure. Metal twist ties or staples are not acceptable. Bags shall be of either polyethylene (minimum of 2 mil) or foil material. Desiccants, if used, must not come in contact with the material. Styrofoam and packaging peanuts are not acceptable in the packaging of raw materials.

2. Complete the table below describing the packaging configuration of this raw material as purchased.

Type of container	
Package size(s) available (Kg)	
Use of desiccants	
Acceptable storage temperature range	
Special handling precautions in regards to exposure to light, moisture (%Rh), and the affect on product shelf life and/or bioactivity, if known. INCLUDE MSDS.	

3. Please provide a means of deciphering your lot code. On what basis are lot codes assigned?

Name of person completing this questionnaire:

(Print)

(Signature/Date)

Title: _____ Company Name: _____

Phone: _____ Fax: _____

Email:

Appendix C- Sample Raw Material Specification Sheets

RAW MATERIAL SPECIFICATION SHEET

Name: _____ Botanical Name: _____ Product #: _____
 Part Used: _____ Shelf Life: _____ Packaging: _____
 Revision: 1.0 _____ Revision Date: _____

Description	Claim/ Target	Limits 1		Limits 2		Units	Method
		min	max	min	max		
Botanical Identity							Visual/Microscopy
Physical Characteristics	Dry Powder						Visual
Mesh Size						%	Thru USSS 40 Mesh
Color							Visual
Odor/Taste							Organoleptic
Loss on Drying	NMT A%		A			%	AOAC 925.51A
Solubility							USP
Ash Content	NMT B%		B			%	USP
Bulk Density	NLT C%						
Aerobic Plate Count	NMT X cfu/g		X			cfu/g	AOAC 966.23
Mould & Yeast	NMT Y cfu/g		Y			cfu/g	FDA-BAM 7 th Ed.
Gram Negative	Negative		Negative			cfu/g	AOAC 966.23
Escherichia coli / Coliforms	Less Than 10 cfu/g		10			cfu/g	AOAC 966.23
Staphylococcus aureus	Less Than 10 cfu/g		10			cfu/g	AOAC 966.23
Pseudomonas aeruginosa	Less Than 10 cfu/g		10			cfu/g	AOAC 966.23
Salmonella sp	Negative		Negative			cfu/g	AOAC 966.23
Heavy Metals			10			ppm	Atomic Absorption
Chlorate Organics	NMT 0.01 ppm		0.01			ppm	Gas Chromatography
Phosphate organics	NMT 0.1 ppm		0.1			ppm	Gas Chromatography

Ingredients:
 Production Method:
 Storage Instructions:

This information is presented in the belief that it is accurate and reliable, however, no warranty, either expressed or implied and no freedom from liability from patents, trademarks, or other limitations should be inferred. Any data listed are averages only and are not to be considered as guarantees expressed or implied, or as a condition of sale.

Specifications may change without prior notice.

Address & Contact Information

POWDERED EXTRACT SPECIFICATIONS

Product Name: Botanical Name: Product Number:
 Part Used: Shelf Life: Packaging:
 Revision: Revision Date:

Description	Claim/ Target	Limits 1		Limits 2		Units	Method
		min	max	min	max		
Botanical Identity							Visual/Microscopy
Physical Characteristics							Visual
Particle Size						%	USP
Particle Size						%	USP
Color							Visual
Odor/Taste							Organoleptic
Marker Compounds							
Compound 1						%	
Compound 2						%	
Compound 3							
Moisture	NMT A %		A			%	AOAC 925.51A
Solubility							USP
Bulk Density	NLT B g/100ml		B			g/100 ml	USP
Aerobic Plate Count	NMT X cfu/g		X			cfu/g	AOAC 966.23
Mould & Yeast	NMT Y cfu/g		Y			cfu/g	FDA-BAM 7 th Ed.
Gram Negative	Negative		Negative			cfu/g	AOAC 966.23
Escherichia coli	Less than 10/g		10			cfu/g	AOAC 966.23
Staphylococcus aureus	Less than 10/g		10			cfu/g	AOAC 966.23
Salmonella sp	Negative		Negative			cfu/g	AOAC 966.23
Heavy Metals	Less than 10 ppm		10			ppm	Atomic Absorption
Chlorate Organics	NMT 0.01 ppm		0.01			ppm	Gas Chromatography
Phosphate organics	NMT 0.1 ppm		0.1			ppm	Gas Chromatography

Manufacturing Process:
 Storage Instructions:

This information is presented in the belief that it is accurate and reliable, however, no warranty, either expressed or implied and no freedom from liability from patents, trademarks, or other limitations should be inferred. Any data listed are averages only and are not to be considered as guarantees expressed or implied, or as a condition of sale. Specifications are subject to change without notice.

Address & Contact Information

Appendix D- Acronym List

BAMEX- Business and Market Expansion

CFR- Code of Federal Regulations

CPSC- Consumer Product Safety Commission

cGMP- Current Good Manufacturing Practices

FAS- The USDA Foreign Agricultural Statistics

FAO- Food and Agriculture Organization

FDA- Food and Drug Administration

FTC - Federal Trade Commission

GAP- Good Agricultural Practices

GRAS- Generally Regarded As Safe

NOP- National Organic Program

USAID- United States Agency for International Development

USDA- United States Department of Agriculture