

# Spices Industry

Competitiveness  
Strategy

Developed by The Spices Industry Cluster



Supported and funded by The Competitiveness Initiative, a joint project of the United States Agency for International Development (USAID), Nathan Associates Inc., and J.E. Austin Associates.

**A Competitiveness Strategy  
for Sri Lanka's  
Spices  
Industry**

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This report outlines a strategy for Sri Lanka's competitive success in the processing and export of spices. It distills assessments of Sri Lanka's opportunities for and constraints on achieving competitiveness. The recommendations herein chart a path for growth that can resolve near-term constraints and set the stage for medium- and long-term progress in Sri Lanka's spice industry.



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# Executive Summary

**T**he competitiveness of Sri Lanka's spice industry is hindered by marketing and procurement problems. For instance, in 2001, most Sri Lankan spices were sold to importers and brokers rather than to their true customers—food manufacturers, food service providers, blenders of dry seasoning mixes, and pharmaceutical or cosmetics manufacturers. In addition, the industry's quality-neutral "commodity trading" approach, which aims to find a market or a source for the greatest possible volume of spices, has led to a number of procurement and production problems.

To orient Sri Lanka's spice industry to its customers, all members of the trade—growers, handlers, brokers, processors, and exporters—need to understand how customers judge quality and how processing technology can affect purchasing decisions. To become more competitive, the industry needs timely information about customer requirements and a coordinated approach to selling spices and derivatives that meet those requirements.

The goal of the strategy described in this report is to create value for local and global customers of Sri Lankan spices and prosperity for industry participants by (1) positioning the industry in niche markets and having it recognized for distinctive offerings and (2) linking the industry more closely with customers, such as blenders of dry seasoning mixes and food manufacturers, based on an understanding of how the attributes of Sri Lankan spices can fit the taste preferences of the ultimate consumers of spiced foods. The strategy will be focused through three initiatives:

- **Market distinctive, natural spices.** This initiative aims to help Sri Lankan marketers of whole spices compete in attractive markets, serving customers that cater to consumers who appreciate the distinctive taste, aroma, or color of whole spices.
- **Market spice derivatives.** This initiative aims to help Sri Lankan marketers of essential oils, oleoresins, isolates, and nutraceuticals compete in attractive markets serving

customers that cater to consumers who appreciate the distinctive taste, aroma, color, or other more flexible uses and product application possibilities of Sri Lankan spice derivatives.

- **Improve the quality, quantity, and consistency of the spice supply.** This initiative will seek to strengthen linkages between exporters and processors and organized smallholders, stimulate plantation interest in spices, and improve agronomic services to growers.

These initiatives take into account two trends. First, manufacturers of food products for the mass market are relying more and more on spice derivatives, while whole and ground spices are increasingly used for premium products and food services, especially where the consumer can readily detect the presence of spices or demands an unprocessed ingredient. Second, food manufacturers and food service providers are relying more and more on spice blenders, who develop blends to meet product profiles such as “Mexican,” “Cajun,” “Thai,” and the like.

Accordingly, the first two initiatives call for the spice industry to coordinate marketing in each of its markets (beginning with North America for spice derivatives). Under these initiatives, Sri Lankan marketers will offer local customers the widest possible range of Sri Lankan spices and spice derivatives, collect and analyze information on customers and markets, and prepare products to meet customers' needs. The cost of data collection will be defrayed by many companies. Specifically, marketers will coordinate the marketing, sale, and delivery of whole and ground spices, oleoresins, (later isolates and nutraceuticals) and essential oils, customized for each market. These marketing initiatives will combine local knowledge of food tastes and the preferences of food manufacturers with the distinctive taste profile or chemical composition of Sri Lankan spices.

The third initiative will address problems of agricultural production, handling, and primary processing. It is proposed that the industry work to increase integration and strategic sourcing to achieve a more consistent and higher quality supply base that better meets customer needs and fits seamlessly into the processes of spice companies further up the value chain. Sri Lankan processors should maximize the “further processing” of low-quality material—much of it now exported to India—and thereby steadily upgrade the standards of the whole spices that are exported. The goal would be to raise the average quality of whole spices by maximizing the amount of off- and low-grade materials that are transformed into derivatives.

In the first stage, processors and exporters of whole spices would work with organized smallholders and reinvigorated plantations on strategic sourcing in order to calibrate the output and consistency of existing supply to better meet industry and market needs. In the second stage, plantations and selected smallholders will together develop spices, including non-traditional spices, that more closely respond to changes in consumer taste.

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# The Competitive Environment of the Spice Industry

**T**he growing and processing of spices provides cash income to a wide range of rural Sri Lankans, particularly smallholders. About 80 exporters, mostly near Colombo, sell cinnamon, pepper, cloves, nutmeg and mace, cardamom, and other spices throughout the world. In 2001, the value of Sri Lankan spice exports was Rs. 6,098 million, equivalent to 1.4 percent of total exports, 7.3 percent of agricultural exports, and more than half of the value of agricultural exports other than tea, coconuts, and rubber.<sup>1</sup>

At the same time, the competitiveness of Sri Lanka's spice industry is hindered by marketing and procurement problems. In 2001, most Sri Lankan spices were sold to importers and brokers rather than "true" customers—food manufacturers, food service providers, blenders of dry seasoning mixes, and pharmaceutical or cosmetics manufacturers. In addition, the industry's "commodity trading" approach, which aims to dispose of the greatest possible volume of spices has led to procurement and production problems. The quality of spices available to exporters and processors is unreliable. Price volatility has dissuaded plantations from growing spices, thereby turning spices into a smallholder crop. And smallholders view spices as the equivalent of money, hoarding them when prices are low and making it difficult for an exporter or processor to enter into long-term supply commitments.

To orient Sri Lanka's spice industry to its customers, all members of the trade—growers, handlers, brokers, processors, and exporter—need to understand how their true customers judge quality and how processing technology can affect purchasing decisions. To become more competitive, the industry needs timely information about customer requirements and a coordinated, strategic approach to selling spices and derivatives that meet those requirements. The high cost of good market information and the substantial investment

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<sup>1</sup>Annual report of the Central Bank of Sri Lanka and Sri Lankan Customs (2001).

required for focused sales initiatives are operational issues that will drive continued activities of Sri Lanka's Spice Industry Cluster.

## INDUSTRY CONSTRAINTS AND OPPORTUNITIES

According to the American Spice Trade Association, a spice is “any dried plant product used primarily for seasoning purposes.” Spices include “tropical aromatics,” leafy herbs from the temperate zone, spice seeds, and dehydrated vegetables that may be used to add flavor or aroma to foodstuffs, beverages, pharmaceuticals, cosmetics, and household and personal care items. They are occasionally used as the functional agent (e.g., air fresheners). All spices exported from Sri Lanka are tropical aromatics.

- Spices come in three forms:
- Whole,
- Ground (powdered or fragmented form of the whole spice), and
- Derivative, including essential oils, oleoresins, isolates, and nutraceuticals.<sup>2</sup>

The essential oils and derived forms concentrate one element of the original spice but, except for oleoresins, lose complexity. For tropical aromatics, whole spices are normally the dried version of the fruit, flower, or bark of the tree. Some—cinnamon quills, cloves, cardamom—may be used whole in the preparation of foods or beverages. All are also ground into a powder and frequently mixed with other spices before use in a recipe. Essential oils and oleoresins are normally extracted from lower quality whole spices or, in the case of cinnamon, from the leaves of the cinnamon tree, through simple steam distillation or more sophisticated processes. The quality of these raw materials is often inadequate to meet the minimal requirements of an essential oil, thus distillers also buy better quality spices to upgrade the finished product. Distillers therefore compete with traders for whole spices.

Whole spices, essential oils, and oleoresins are partially interchangeable. Some products, especially essential oils, have unique applications. According to McCormick, a leading spice marketer, essential oils consist of “volatile, aromatic ‘top notes’ of a spice or herb.” Oleoresins, combining essential oils with non-volatile elements of the spice, “provide flavor profiles characteristic of the ground spice or herb with a more rapid flavor release<sup>3</sup> in a concentrated, oil-soluble, liquid form.”<sup>3</sup>

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<sup>2</sup>A nutraceuticals, also known as a phytochemical, is a natural, bioactive chemical compound thought to promote health, prevent disease, or act as a medicine. Foods containing nutraceuticals are often referred to as “functional foods.”

<sup>3</sup>See [www.mccormickflavor.com/subcategory.cfm?subcategory=25](http://www.mccormickflavor.com/subcategory.cfm?subcategory=25).

## Global Market

The spice market has two main segments—whole or ground and derivatives. The market can also be segmented by spice—black pepper, cinnamon, cloves, cardamom, and many others.

- **Pepper.** In 1999, 262,000 metric tons (MT) of pepper worth US\$1.2 billion was traded.<sup>4</sup> The principal primary exporters were India, Indonesia, Vietnam, Malaysia, and Brazil. Sri Lanka's exports amounted to only 1.4 percent of world exports.
- **Cinnamon.** More than 90,000 MT of cinnamon worth nearly US\$120 million were traded. China and Indonesia supplied the most volume in the form of *Cinnamomum cassia* (cassia) but Sri Lanka's exports of *Cinnamomum verum* (a similar, but sweeter spice the industry calls "true cinnamon") represented more than 40 percent of the total value.
- **Cloves.** Nearly 31,000 MT of cloves with a value of more than US\$53 million were traded. The principal primary exporters were the Madagascar Republic, Sri Lanka, Tanzania, Indonesia, Brazil, and the Comoros. Sri Lanka exported 11 percent of the volume, which is equivalent to less than 9 percent of total value.
- **Cardamom, nutmeg, mace.** Nearly 49,000 MT of these spices, with a value of \$230 million were traded. The principal primary exporters were Guatemala, Indonesia, Grenada, and countries in South Asia. Sri Lanka exported more than 2 percent of the volume and less than 2 percent of total value.

Adding in more than 170,000 MT of other spices worth \$400 million, world trade in spices amounted to 600,000 MT worth slightly more than \$2 billion in 1999.

## U.S. Market

The U.S. market for spices and seasonings is the largest and most demanding in the world. U.S. consumption in 2001 is estimated to be 500,000 tons, of which 300,000 tons were imported. But aggregate data are of little value because prices for one spice versus another vary widely and the intensity of flavor and aroma bear little relation to weight or cost. Therefore, each major spice of Sri Lankan origin is addressed individually in this report.

Of total U.S. imports, 17 percent were black or white pepper; 5.5 percent cinnamon and cassia; and 0.6 percent nutmeg, followed by cloves and a collection of minor spices such as mace and cardamom. Before 2001, the market was growing at about 5 percent per annum. Domestically processed and packaged products make up 25 percent of the U.S. market;

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<sup>4</sup>These statistics include re-exports from entrepôts such as Singapore and countries that reprocess spices, such as the Netherlands.

household purchases about 30 percent by volume; and domestically produced and imported raw materials and imported processed materials another 30 percent. Exports, the category whose value has risen most rapidly, make up the balance.

Spices or seasonings used in ethnic cuisine or that fill the sensory gap left by reducing salt or fat for health reasons are increasingly popular. The fastest growing spice products in the United States are onion powder, pepper and salt mixtures, jalapenos, Anaheim and ancho peppers, fennel, marjoram, savory, tarragon, paprika, paprika oleoresin, cumin seeds, dried garlic, mint leaves, candied gingerroot, and cardamom. Of these, pepper and cardamom are the only ones produced in commercial quantities in Sri Lanka. But growth in the spice market as a whole is less important than growth in market segments seeking the highest quality products. Sri Lanka's exports represent only a small portion of the market in all spices, except cinnamon; therefore, a strategy targeting upper niches is appropriate.

A preliminary analysis of the U.S. market shows a growing preference for stronger flavors, including those derived from black pepper, garlic, and chilies. This trend is driven by immigration from countries where spices are part of the traditional diet and the average consumer's growing tolerance for stronger tastes.

Opinion on the attractiveness of whole spices versus spice derivatives is inconclusive. In the mid-1990s, industry observers extolled spice oleoresins, but statistical evidence of their having replaced whole spices on a grand scale is lacking. Recent interviews suggest that whole spices are now favored, but this balance should be closely watched because technological advances, new products, and changes in customer preferences can have a sudden impact.

The market share of spices used in food processing and institutional settings versus spices used in households is growing substantially. This is because Americans are spending more money at restaurants. In the early 1970s they spent one-third of their food expenditures away from home; today they spend one-half. Much of the food for fast food outlets and institutions, such as hotels and schools, is now prepared in large volumes in an industrial setting far from the point of consumption.

Over the last decade, blended spices, especially dry seasoning mix, have grown in sales volume and value. The number of companies in this field has more than doubled since 1980 and the average price of a kilogram of mix also rose nearly 9 percent annually in the 1990s. The number of new product offerings peaked in 1997 at 170 and declined thereafter. About 400 new "stock-keeping units" come on the market every year.

## European Union Market

The European Union (EU) is the second largest importer of herbs, spices, and essential oils. Its market for seasonings, spices, and herbs, which is approximately 200,000 tons per year, is expected to grow at an annual rate of 4 percent, with Germany being the largest single market.

While generalizing market information and applying it to all EU member countries is difficult, it is clear that the EU is experiencing the same trends as the United States. The use of spices and essential oils in the food processing industry is growing, and consumers are spending a larger share of their food budgets on prepared and processed foods and sauces. Highly flavored ethnic foods, especially Asian foods in the United Kingdom and Italy, are more popular, increasing demand for essential and aromatic oils and dried and fresh herbs and spices. Consumer demand for natural, plant-based products in foods, fragrance, and personal care products is growing as is demand for organically grown foods. Especially in Germany and Austria, organic foods and ingredients command premium prices.

Essential oils are used primarily in the fragrance, household product, and food processing industries. Industrial aromatics are increasingly necessary for food processing in both the United States and the EU. Overall, the use of synthetics is declining and natural products is increasing. Natural products now dominate the European perfume market in terms of value and volume. Europe represents 40 percent of the market and its 350 million consumers use twice as much per capita as those in the United States, but most use locally produced herbal oils. France is the top producer and exporter of essential oils in Europe, providing 90 percent of the world's lavender oil, as well as jasmine, rose, and centifolia.

Given the difficulty of generalizing for EU countries and that trends in spice usage in the food industry there seem to be set first in the United States, understanding the U.S. market may help Sri Lanka's industry anticipate emerging trends in Europe.

## Indian Market

India has emerged as a major trading partner of Sri Lanka for cloves because of the Indo-Sri Lanka Free Trade Agreement (ISFTA) and the South Asian Preferential Trade Agreement (SAPTA). Although considered a low-value market, India is the main buyer of Sri Lankan pepper, cloves, nutmeg, and mace in terms of both volume and value. At present Sri Lanka's cloves enter India at a concessionary duty rate of 7 percent whereas other origins are subject to a 70 percent duty. India purchases Sri Lanka's entire light berries production of pepper—known for high oil content and pungency—at premium prices for extraction of essential oil and oleoresin.

India has registered a substantial growth in spice exports over the last decade, more than doubling its volume while increasing value more than threefold. In addition to its huge domestic market, India commands a formidable position in global spice trade, with a 45 percent share in volume and 23 percent in value.

As for value addition, India has a virtual monopoly on spice oils and oleoresins made from tropical aromatics and exported to the global market. It produces oleoresins from almost all spices and offers a variety of products. At present India has no major competitor in spice oils and oleoresins. Most spice imports from Sri Lanka are used for extraction of essential oils and oleoresins.

While ISFTA represents a short-term opportunity for Sri Lankan exporters, differential or concessionary tariff rates are an unstable basis for a long-term strategy. And, while niches for superior spice products are developing in the Indian market, India itself is a producing nation so Sri Lanka will find it difficult to dominate such markets.

### **Sri Lanka Market**

All spices exported from Sri Lanka are tropical aromatics, the most prevalent being pepper, cinnamon, cloves, nutmeg, mace, and cardamom. Total exports in 2001 were about US\$68.2 million.

A small player in the world spice market, Sri Lanka is the leading exporter of true cinnamon, which faces competition from the similar, but lower-priced cassia. Sri Lanka also exports pepper and cardamom, sales of which are rising. Some members of Sri Lanka's spice industry, especially new entrants, have invested in superior distillation equipment, creating a general interest in the export of derivatives. These and other major investments, however, should be firmly guided by an understanding of the potential for serving a clearly identified and understood customer.

Though some have begun to sell directly, most Sri Lankan exporters continue to sell whole spices through a broker or a commission agent. The importer then sells to a grinder or processor, including those who blend spices into dry seasoning mix. The grinder and the blender then sell the ground and blended spices to food manufacturers and food service companies. Specialized blenders pack spices for retail sale.

Sri Lanka's spice industry sees the importer in the destination country as its customer. Given the tradition of secrecy in the spice trade, importers often conceal the identity and preferences of those to whom they resell, giving the supplier just enough information to provide an *acceptable* product. Linkages between Sri Lankan exporters and ultimate customers, therefore, are poor. The decisive calculus of value is reached at the level of the blender of a spice mix or a food or beverage manufacturer (or their equivalent in non-food

industries) who buys individual spices.<sup>5</sup> Consumers have only a hazy idea of the quality of what they are buying in a prepared food, beverage, or meal. Any customer dissatisfaction is masked by intermediaries, who may be earning extra margins at the expense of the Sri Lankan industry by cleaning or blending the products they buy. These “middle men” make it difficult for Sri Lankan producers or exporters to get accurate and timely feedback from end-users. In addition, Sri Lankan industry has been slow to see the advantages to be gained from the free exchange of information and self-policing. These advantages include consistent product quality and reputation maintenance.

Industry participants see the international spice trade as “dominated by a few, multinational corporations,” with Indian competitors having access to a “huge domestic market” and certain markets “dominated by the Malaysians and Indonesians.” This confirms the impression that Sri Lankan exporters, despite their belief in the uniqueness of their products, tend to position their products as commodities in a global free-for-all. As is to be expected, without a steady market to reward steady production, members of Sri Lanka’s spice industry act on the basis of their own, isolated interests. Exporters and growers, for instance, take a short-term, opportunistic view of the trade. Exporters want to buy spices at the lowest possible price to meet a buying interest or obtain the highest spot price for physical spices purchased. Growers time harvests and make decisions about selling dried spices on the basis of cash flow and sometimes price speculation. Having the industry, as a whole, act as a reliable supplier of particular spices to target markets is given little consideration.

This “commodity trading” approach causes exporters to simply find a market or source for the greatest possible volume of spices. This, in turn, neutralizes quality as an issue and gives rise to procurement and production problems. Exporters and processors receive spices of variable quality. For several reasons, including price volatility, plantations have neglected spices, which have therefore become a smallholder crop. Smallholders view spices as the equivalent of money and hoard them when prices are low. (The production and primary processing components of the value chain for pepper, cinnamon, and cardamom are discussed in the appendix.)

Other industry problems have yet to be resolved. The effort to bifurcate the harmonized system customs codes classification into *cassia* and *true cinnamon* is just beginning. The desirability and feasibility of mobilizing industry support for government lobbying in the international arena is not clear.

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<sup>5</sup>These include companies trying to shorten the procurement chain by buying directly or through global sourcing.

In addition to these industry-specific problems, Sri Lanka's lack of investment capital and high interest rates are significantly restricting growth in general. In 2001, for instance, a bank customer could obtain a collateralized loan at an annual interest rate of 18 to 22 percent. Loans denominated in foreign currency are available at an interest rate of 4 to 6 percent, close to international corporate rates, but to be eligible the business must have foreign currency earnings. A business with an overseas presence and seeking debt financing on international markets can find cheaper capital, but must bear the risk of exchange rate fluctuations. Such fluctuations may add 8 to 10 percent annually to the cost of capital for companies relying on local revenues—or substantially more if the rupee is severely devalued.

### **The Spice Cluster**

The Sri Lanka Spice Cluster formed in response to challenges, global and local, facing the spice industry. The core of the cluster includes representatives from growers, traders, distillers and extractors, exporters, brokers, associations, industrial technology institutes, and government ministries and agencies, such as the Export Development Board (EDB) and the Department of Export Agriculture (DEA). The cluster's membership serves as a proxy for the industry. The goal of the cluster is to create value for the customers and prosperity for the spice industry in Sri Lanka. It will do this by pursuing the competitiveness strategy described in the next section and the strategic initiatives described in the rest of this report.

## **THE COMPETITIVENESS STRATEGY AND THE STRATEGIC INITIATIVES**

The strategy and the strategic initiatives presented in this report take into account the global and local environment of Sri Lanka's spice industry. *The industry's strategy is to position its products increasingly in niche markets and be recognized for its distinctive offerings.* This will require working closely with customers and understanding the taste preferences of consumers. In contrast to current industry perceptions, this strategy identifies customers as spice mix blenders, manufacturers of a food, beverage, or other spice-using product (cosmetic, pharmaceutical, or household items), and consumers.

Recognizing that international markets are currently using whole spices and derivatives, the strategy gives equal weight to both segments in two separate initiatives. Whichever of the two market opportunities should prove more appealing, processors and exporters will need a regular supply of raw materials—in the case of whole spices, of ever-higher quality and cleanliness—to expand business. At present, the quality and quantity of spices available to exporters and processors is inadequate. Therefore the third strategic initiative seeks to improve spice quality and increase volume.

The strategic initiatives are as follows:

- **Market distinctive, natural spices.** This initiative aims to help Sri Lankan marketers of whole spices compete in attractive markets, serving customers that cater to consumers who appreciate the distinctive taste, aroma, or color of whole spices.
- **Market spice derivatives.** This initiative aims to help Sri Lankan marketers of essential oils, oleoresins, isolates, and nutraceuticals compete in attractive markets serving customers that cater to consumers who appreciate the distinctive taste, aroma, color, or other more flexible uses and product applications of Sri Lankan spice derivatives.
- **Improve the quality, quantity, and consistency of the spice supply.** This initiative will seek to strengthen linkages between exporters and processors and organized smallholders, stimulate plantation interest in spices, and improve agronomic services to growers.

By laying the groundwork for mastering specific market needs, the first two initiatives will make the components of the spice value chain more cohesive. The resulting competitiveness should lead to a larger share of the market and greater profitability when customer satisfaction is measured and factored back into organizational performance. Customer satisfaction may be measured by reporting the consistency and reliability of delivery and the amount of defective product. This information will be fed back into a continuous improvement program in which shortcomings are translated into better techniques and practices—quality systems driven by employee involvement—that lead to superior products and customer service and lower costs.

The strategy focuses on the U.S. export market, by far the world's largest and most exacting in standards and services. The diverse population of the United States creates demand for a range of food, beverages, and other products that contain spices or their derivatives. Like Europe and Japan, it pays premium prices for increasingly high standards. Sri Lanka's Spice Cluster believes that the U.S. market will be an ideal test case for its competitiveness strategy. Sri Lanka currently has a low share of the U.S. market in all tropical aromatics, other than true cinnamon. If it can improve its percentage of high quality spices, it will improve its competitiveness in the developed world. Success in the U.S. market will make success in European and other markets achievable.



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# Market Distinctive, Natural Spices

**T**his initiative aims to enable Sri Lankan marketers to compete in attractive markets, serving consumers and manufacturers who appreciate the distinctive taste, aroma, or color of whole spices. This will require replacing the industry’s current “trading” orientation with a marketing orientation, matching the unique attributes of Sri Lankan spices explicitly with customer preferences and identifying niches for market action given limited resources.

## WHY THIS INITIATIVE?

Markets such as those in the United States and the Netherlands pay the highest prices for spices but account for only a fraction of Sri Lankan exports. If Sri Lanka produces and sells more high-quality spices to developed markets, it will be able to raise export revenue from spices and their weighted average price. Exporters need to understand the growing preference for stronger taste in North America and Western Europe, how food manufacturers and food service providers translate that preference into spicier products, and the criteria by which they select spices.

## Baseline Advantages

The climate and soil of Sri Lanka—the “Spice Island”—are renowned for producing the exceptional spices known as tropical aromatics. True cinnamon is grown in only two other places, Madagascar and the Seychelles. Madagascar has greatly reduced its exports, to about 3 percent of Sri Lanka’s; Seychelles overtook Madagascar in the mid-1990s. Many exporters hold the belief, often unsubstantiated, that Sri Lankan spices are intrinsically superior to those of other origin. Industry technicians specifically note Sri Lankan pepper’s higher piperine content and greater pungency. These comparative advantages, however, are no longer sufficient to maintain international competitiveness. As the following analysis of

market status and opportunities shows, reliance on image alone has not resulted in a strong Sri Lankan presence in the highest value markets.

## **Market**

The most promising opportunities for Sri Lankan spices appear to lie with cinnamon, pepper, cloves, and cardamom in North America, and to a lesser degree in Europe and Japan. The most promising target customers include

- Food service providers, such as South Asian restaurants;
- Small and medium food and beverage manufacturers; and
- Spice blenders of specialized spice mixes.

### ***Spice Mixes Segment***

Over the last decade, sales of blended spices or dry seasoning mix have grown. The most frequently used ingredients in dry mixes are garlic, pepper, salt, peppercorns, basil, and cinnamon. Mixes are usually described as “lemon-flavored,” “roasted,” “hot,” or “barbecued.” They usually accompany chicken or fish in Italian, Cajun, Thai, or Mexican or southwestern style cuisine. Sales volume, sales value, and the number of companies in this field have more than doubled since 1980. The average price of a kilogram of mix also rose nearly 9 percent annually during the 1990s. Kalsec, a major extractor, offers similar mixes in the form of oleoresins.

Small or dispersed institutional food providers and food manufacturers use dry seasoning mix, which saves them the expense of complex procurement and provides them with proven blends. U.S. trade statistics show no evidence that Sri Lanka has been able to exploit these trends.

### ***Food and Beverage Manufacturers Segment***

The principal users of spices and seasonings are meat packers, prepared meat processors, canners, bakers, and confectioners.<sup>6</sup> The importance of spices in these categories varies. For example, a meat packing company may spend \$50,000 per factory or 0.2 percent of its procurement budget on spices and seasonings, while a sausage maker may spend \$250,000 per factory or 2 percent of its procurement budget.

Cinnamon quills or curls are used in pickling, preserves, puddings, flavorings, and stewed fruit. Ground cinnamon or cassia is used in baked goods, confections, and beverages. Nutmeg and mace are both used to flavor foods, sauces, and beverages, such as eggnog.

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<sup>6</sup>Peter J. Buzzanell, *et al.* 1997. The Spice Market in the USA—Recent Developments and Prospects. Economic Research Service, U.S. Department of Agriculture.

Cloves are also used in pickling and preserving, and in baked goods, confections, and preserves. Cardamom is used in mixed pickling spices as well as curry powders, spice blends for sausages, and Kawa, a coffee in West Asia.

### ***Retail Spice Segment***

Average purchases of salt, spices, and seasonings doubled between the end of the 1980s and the end of the 1990s. Supermarkets and other traditional food stores once accounted for more than 90 percent of retail sales. But high prices in the 1990s gave mass merchandisers an opportunity to compete on price and opened other, more direct channels to the consumer that could also provide an opportunity for the Sri Lankan spice industry.

Eight companies account for nearly 80 percent of the U.S. retail spice market and one of them, McCormick, represents nearly half of that. McCormick steadily increased its market share for pepper during the 1990s to more than 40 percent of the retail market by value. But it supplied just more than 30 percent by volume. Even higher-priced products have lost share to McCormick, suggesting that McCormick gets some premium for quality, but that price is not elastic beyond a certain threshold and that retail customers still see spices largely as a commodity.

### ***Overview of the U.S. market***

The U.S. Department of Commerce reported that U.S. imports of all whole spices in 2000 exceeded 300,000 MT and more than \$600 million in value. Pepper accounted for one-sixth of that total by volume, cassia and cinnamon for 6 percent, nutmeg 2 percent, and cloves, mace, and cardamom 1 percent or less each.

Prices paid for U.S. imports of cinnamon and cloves from Sri Lanka were consistently and significantly higher than the weighted average purchase price in their category. U.S. imports of black pepper from Sri Lanka stayed the same over the last five years but the above-average price did not.

- **Pepper.** In 2001, Sri Lanka exported 2,000 MT of pepper worth about \$ 5.5 million.<sup>7</sup> Forty-three percent of the volume went to India, 9 percent to the United Arab Emirates, and 8 percent to Egypt. The United States, the fourth largest national market, received 5.4 percent of the volume exported, which was worth 6 percent of the total value. The weighted average price of pepper exported to the United States was Rs. 355 per kg, the highest of the major destinations. Between 1996 and 2000, the United States imported about 500 MT of Sri Lankan pepper per year. Sri Lanka therefore accounts for about 1

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<sup>7</sup>The overview of Sri Lankan exports is based on statistics prepared by the Trade Information Service of the Sri Lanka Export Development Board. The data do not match exactly the U.S. customs import data used to calculate the performance of Sri Lankan spices in the U.S. market.

percent of all U.S. imports by volume (see Table 1). The price it received in 1997 was one-third more than the weighted average, though by 2000 the premium had declined to 6 percent.

	1996	1997	1998	1999	2000
<i>Tons</i>					
Total U.S. Imports	41,657	45,359	36,468	47,591	43,539
From Sri Lanka	411	285	578	441	516
Sri Lankan share (%)	0.99	0.63	1.58	0.93	1.18
<i>Weighted average \$ per kg</i>					
All U.S. imports	2.29	3.43	4.85	4.50	4.71
From Sri Lanka		4.66	5.67	5.03	5.00
Ratio		1.36x	1.17x	1.12x	1.06x

**Table 1. U.S. Imports of Black Pepper**

These data imply that (1) Sri Lankan pepper is inherently superior to other pepper or (2) the Sri Lankan spice industry has deliberately placed higher-priced pepper in the U.S. market. It is equally plausible that the outcome is the result of ad hoc trading decisions. But even if Sri Lankan exporters as a rule sell pepper as it becomes available to the highest bidder, irrespective of destination, the pattern of price premia still reflect U.S. buyers' willingness to pay above-average prices for some attribute of Sri Lankan pepper. U.S. buyers might be paying higher prices simply because they are upgrading poor quality pepper by blending a better quality product, some of which they buy from Sri Lanka.

- **Cinnamon.** In 2001, Sri Lanka exported 10,400 MT of cinnamon worth about \$42.3 million. Fifty-one percent of the volume went to Mexico, 18 percent to the Andean republics, and 9 percent to the United States, the second largest national market. The weighted average price of cinnamon exported to the United States was Rs.377 per kg compared with Rs.362 to Mexico and Rs.310 to Peru. U.S. imports of Sri Lanka cinnamon grew from 700 to almost 1,000 tons in the last half of the 1990s (see Table 2). This accounted for an increase in share of the market from 4 percent to nearly 6 percent by volume. The price for Sri Lankan cinnamon in 1998 to 2000 was more than four times the weighted average, most of which is cassia. Certain buyers are clearly unwilling to substitute cassia for Ceylon cinnamon. The share of Sri Lankan exports of cinnamon going to the United States, by volume and value, rose from 7 percent in 1996 to nearly 10 percent in 2000.

	1996	1997	1998	1999	2000
<i>Tons</i>					
Total U.S. Imports	17,098	17,495	19,455	17,565	16,933
From Sri Lanka	707	709	893	771	993
Sri Lankan share (%)	4.14	4.05	4.59	4.39	5.86
<i>Weighted average \$ per kg</i>					
All U.S. imports	2.01	1.74	1.35	1.20	1.09
From Sri Lanka		4.68	5.88	5.71	4.59
Ratio		2.69×	4.34×	4.75×	4.20×

Table 2. U.S. Imports of Cinnamon and Cassia

- Nutmeg and mace.** In 2000, Sri Lanka exported 1,300 MT of nutmeg and mace with a value of about \$5 million. Forty percent of the volume went to India, 23 percent to the United Arab Emirates, 10 percent to Singapore, and 8 percent to Pakistan. The United States, the eleventh largest national market, received less than 10 MT at a weighted average price of Rs. 491 per kg, again the highest of the major destinations. U.S. imports of nutmeg from Sri Lanka ranged from less than 1 metric ton in 1997 to 6 tons in 1999. This accounted for between one-fourth and one-third percent of all U.S. imports of nutmeg. The data on price is inconclusive. Exports to the United States represent less than one percent of Sri Lankan total exports of nutmeg. U.S. imports of mace from Sri Lanka are negligible. In 2000, Sri Lankan mace accounted for one-tenth of one percent of U.S. imports. Exports to the United States represent about 0.2 percent of total Sri Lankan exports by volume and value.
- Cloves.** In 2000, Sri Lanka exported 960 MT of cloves with a value of about US\$3.5 million. Fifty-five percent went to India, 19 percent to the United Kingdom, 5 percent to France, and 3 percent to the United States, the fourth largest national market.<sup>8</sup> The weighted average price of the cloves exported to the United States was Rs. 482, the highest of the top four markets. U.S. imports of cloves from Sri Lanka ranged from 25 tons in 1998 to 100 tons in 1999 (see Table 3). This was equivalent to 2 percent and 7 percent of all U.S. imports. The price paid for Sri Lankan cloves was typically one and one-half times the weighted average. Exports to the United States represent about 3 percent of U.S. clove imports by volume but between 4 and 6 percent by value. The U.S. market prizes cloves that are handpicked.

<sup>8</sup>Sri Lankan exports of cloves to India attract a tariff of 7 percent compared with 70 percent for cloves from other origins.

	1996	1997	1998	1999	2000
<i>Tons</i>					
Total U.S. Imports	958	1,431	1,158	1,357	1,095
From Sri Lanka	42	69	25	100	35
Sri Lankan share (%)	4.33	4.82	2.15	7.35	3.22
<i>Weighted average \$ per kg</i>					
All U.S. imports	1.60	1.33	1.28	1.80	3.68
From Sri Lanka		2.01	2.86	2.68	6.52
Ratio		1.51x	2.23x	1.49x	1.77x

Table 3. U.S. Imports of Cloves

- **Cardamom.** In 2000, Sri Lanka exported 8 MT of cardamom with a value of \$75,000. Half went to Jordan and 20 percent to Western Europe. Only 24 kg were exported to the United States, the nineteenth largest national market, at a price of Rs. 3,420 per kg, compared to a weighted average export price of Rs. 800. U.S. imports of cardamom from Sri Lanka were negligible—though U.S. data are available only for 1996 and 1997. In both years, Sri Lankan cardamom accounted for less than one-half percent of U.S. imports. Exports to the United States represent about 2 percent and 13 percent, respectively, of total Sri Lankan exports by volume. Value data are inconclusive.

In general, the unit price of Sri Lankan spices exported to the United States is higher than that for almost all other destinations except the Netherlands, which pays similar prices. This strongly suggests that the U.S. market is primarily interested in high-quality spices and that, given Sri Lanka's low market share in every instance (except cinnamon), exporters would have no difficulty placing additional quantities if they met the quality standards of U.S. customers.

The U.S. market is also very serious about the *cleanliness* of foods and beverages and the ingredients that go into them. Advances in microbiology now make it possible to trace the origin of any disease found on spices or in foods containing spices. Producers, handlers, and processors in the country of origin are expected to minimize the risk of contamination of spices by salmonella, aflatoxins (especially for nutmeg), and other diseases between the farm and the port. They are also expected to treat each bag of spices with ethylene oxide before shipment.

### Supporting Industries and Services

To become more competitive, the spice industry will have to call on other industries and services. In Sri Lanka, these services will include at least rural finance and extension services, and laboratory analysis to ensure the spices are meeting quality, cleanliness, and

consistency standards. Marketing distinctive, natural spices will also make the packaging industry an important ally.

## **Organization**

Interneecine competition and secrecy have prevented Sri Lanka's spice industry from contemplating having the industry as a whole be a reliable supplier of particular spices to target markets. This may be changing, however, as market pressures erode the prices of commodity spices. Growing participation in associations and in the Spice Cluster reveals growing interest in joint action to improve industry performance overall. To move the industry away from head-to-head competition for commodity contracts with enormous producers, such as India, and to markets and applications that value the distinctiveness and quality of Ceylon spices will require substantial cooperation and organizational change.

## ***Market Intelligence***

To obtain good market intelligence and translate it into a market strategy, the spice industry needs to integrate its marketing effort in each major market. Doing so will defray initial costs and offer buyers a wide enough range of attractive products. Above all, the industry needs a credible physical presence in key markets to coordinate sales, logistics, and the collection of market intelligence. Only after operating in this integrated way for a period of years will the industry be able to develop new products and have Sri Lankan growers diversify into other attractive spices.

## ***Product Quality***

The industry needs to focus on tighter links with growers, not necessarily replacing intermediaries between the farm and Colombo, but devising ways to produce high-quality spices and preserve quality through many hands all the way to the customer. For example, quality could be improved if exporters and processors integrated procurement. As examined in the third strategic initiative, this integration could be through an outgrower system run by the exporter and an alliance with a rural credit union. Similar industries have addressed some of these problems by organizing a confederation or cooperative of growers so products can be collected, sorted, and graded centrally. Growers who produce better and more consistent products need to be supported with purchase contracts and a share in the higher margins.

## ***Product Quantity***

The pursuit of additional quantities of spices needs to focus on plantation management companies that have neglected the areas they have planted in spices. With access to competitively priced capital and some government inducements or pressure, these companies could make fallow land productive. (Few plantation estates are owned and managed by the government.)

While processors and exporters need to exert themselves to expand markets, better performance in the short-term among growers of all sizes will depend on stronger government agencies. The DEA should be better organized to provide effective and efficient extension services for farmers, post-harvest primary processing, and crop research and development. The EDB needs to strengthen its marketing capability in major markets to support strategic initiatives. The DEA and EDB should also better coordinate in implementing strategic initiatives.

## POLICY AND OPERATIONAL IMPLICATIONS

### Policy

Public-private dialogue between the spice industry and the government should focus on further liberalizing, strengthening, and restructuring the DEA and the EDB so that the agencies emulate the Spices Board of India, forming an independent governing body and a partnership between the public and private sectors. In particular, the DEA should be able to function more autonomously, especially at the local level. The activities of these restructured agencies should support the strategic initiatives and be guided by the marketing strategy of spice industry subsets. The EDB and the Department of Commerce could help promote a range of exports, especially non-traditional products, and provide Sri Lankan growers with access to the criteria of quality used in the international market. Public-private dialogue should also focus on ways to upgrade the industry through another public-private partnership in research and development of products made from Sri Lankan spices, particularly for neglected markets (e.g., tinctures).

### Operations

It is assumed that the unique attributes of Sri Lankan spices correspond to the taste preferences of consumers who have been introduced to them and that these consumers will continue to prefer them over time. It is also assumed that some food manufacturers and blenders of dry seasoning mixes, once introduced to Sri Lankan spices, will be able to justify their inclusion in foods and mixes and be willing to differentiate such products on a basis that persists over time.

Given these assumptions, two constraints remain: (1) no industry presence in importing countries and (2) inadequate and inconsistent supply of spices of good quality. In importing countries, the Sri Lankan spice industry would be well served by establishing a permanent presence for furthering the interests of all groups trying to sell their products. After pilot market studies, industry participants will develop the exact form of this presence. It does not need to be a full-time office. The industry can decide what form (e.g., agent, joint venture, representative office) best suits its needs, given cost and market considerations.

The following operational needs must be met:

- **Marketing** (as applied to at least one market). Develop the best possible understanding of consumer preferences and how the attributes of Sri Lankan spices best match them; gain access to and build long-term relationships with key food manufacturers (and their equivalents in the cosmetics, pharmaceutical, and other industries); develop a flexible marketing and promotional approach for Sri Lankan marketers; gather and analyze market intelligence continuously, particularly on taste trends.
- **Operations.** Develop capability to deliver spices directly to customers; exert supply and inventory control; sterilize spices before shipment.
- **Procurement.** Ensure consistent access to spices of a type and quality that meets the needs of consumers in the target market.
- **Finance.** Gain access to investment and working capital at competitive interest rates and find ways to use the funds available to rural growers and small businesses creatively.
- **Management.** Devise a general plan for managing overseas representatives.
- **Trade.** Prepare for a lengthy campaign to bifurcate under different harmonized system codes true cinnamon and cassia, first ensuring that the item is on the International Customs Union's agenda for the Brussels Convention to be held in 2003.

## ADDING VALUE IN THE BUSINESS PROCESS

Figure 1 highlights parts of the business chain affected by this initiative. In order of importance, these are the sales and marketing, distribution, customer service, procurement, and administration segments.



Figure 1. Value of Marketing Distinctive, Natural Spices

- **Sales and marketing.** Marketing distinctive, natural spices will require stronger sales and marketing capabilities at the company level and intra-industry collaboration to learn customer preferences.

- **Distribution.** The spice industry consists mostly of smaller companies. Developing distribution systems that ensure the customer gets the right product, at the right time, and in the right amount will be a significant challenge. Coordination and cooperation in filling orders could lead to bigger contracts and lower costs.
- **Customer service.** Achieving and maintaining the Ceylon quality reputation will require much closer interaction with customers. Commanding a premium price requires not only a good product, but also good service—timeliness, consistency, and responsiveness.
- **Procurement.** Attaining consistent product quality will require developing grading and sourcing systems. It should also help develop stronger integration with the growers to realize improvements at the early stages of the value chain. (See the third strategic initiative.)
- **Administration and management.** Greater integration with the growers, increased cooperation among processors and traders, and more complex distribution networks will require sophisticated monitoring and administrative procedures and management technology.

## KEY BENCHMARKS

In each market segment, the key benchmarks are (1) price premium over weighted average import price and market share, and (2) free on board (FOB) value per kilogram of spices exported from Sri Lanka.

## ACTIONS

The basic actions for this strategic initiative are a market survey for the United States and a quick review of the cinnamon market in Mexico to understand why Mexico consumes so much Sri Lankan cinnamon (50 percent of exports) and what it is used for (e.g., local consumption patterns, re-export). Individual spice working groups will sponsor a workshop focusing on one or more markets for Sri Lankan spices where opportunities for value-addition and margin growth are most likely. The goal of the workshop will be to set in motion part of a business plan to enter markets in an organized manner and attract new customers. That approach will include the following actions:

- Devise a basis for matching the attributes of Sri Lankan spices with U.S. consumer preferences (e.g., hand picked or quality fancy cloves packaged in bottles) and a value proposition adequate for promotional material.

- Agree on a set of values—related to spice-preference matches, customers, and other entities in the United States—for the whole-spices industry and its subsets, not individual components. Revise the competitiveness goal accordingly.
- Evaluate the potential for Sri Lankan spices in the U.S. market and estimate the resources that may be brought to bear in achieving that potential.
- Set challenging but realistic intermediate goals for the target market.
- Agree on which actions by which groups will contribute to and which will hinder the achievement of these goals.
- Reach an understanding on how independent groups can cooperate to mutual advantage, define collaborative activities, and assign responsibilities.
- Address operational issues, especially those that support sales in the target market. This will include organizational issues, such as how to share proceeds and how to differentiate between partners.
- Establish a program to measure progress toward goals for the target markets and to expand the initiative to additional markets.

In relation to collaborative activities, the workshop will be guided by the following issues:

- **Marketing.** Match Sri Lankan spice attributes to distinctive consumer preferences. Outline an exact value proposition for the industry to propose to food manufacturers and blenders of dry seasoning mixes that will distinguish Sri Lankan spices from the competition. Identify specific target markets and articulate a market entry strategy leading to the exploitation or development of a permanent presence.
- **Operations.** Investigate access to importing services, storing and distributing capability, and spices of appropriate quality.
- **Finance.** Investigate how to get access to investment and working capital.

## TARGETS AND EXPECTED RESULTS

Targets for this strategic initiative include

- **Designing and developing several new products based on Ceylon cinnamon for North America.** These products should target the market for Mexican cuisine and preserve the traditional characteristics of the spice. (A “new” product can be one that involves innovation in processing, mixing, or packaging.) Then select at least two

products for development and conduct taste tests and other experiments to refine the products and their delivery. Identify at least one strategic partner and make a trial launch of the first product.

- **Designing and developing a variety of mixes or blends based on consumer and food service trends in North America.** Focus on mixes or blends with a South Asian theme. Select at least two products for further development and conduct preliminary tests in Sri Lanka. Launch the products by the end of year one.

Ideally, new products should command a price at least 20 to 25 percent higher than the price of the raw materials from which they are made. The value-added through the sale of successful mixes or blends would be measured by the difference between the FOB price per kilogram of mix versus the price of the ingredients sold as commodities. The timeline for achieving these targets is shown in Figure 2.

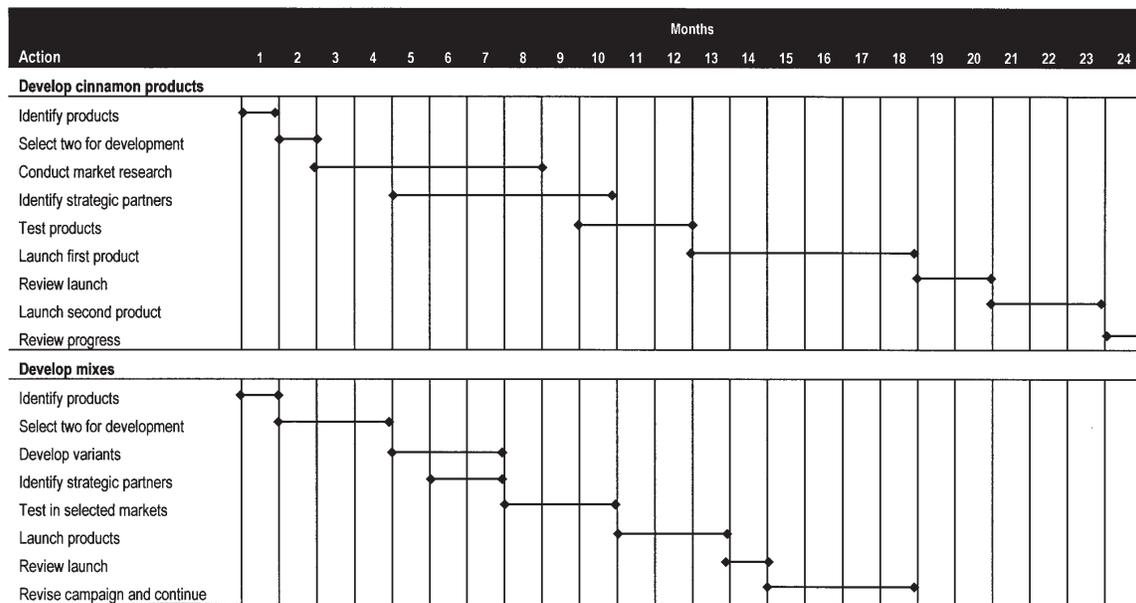


Figure 2. Timeline for Marketing Distinctive, Natural Spices

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# Market Spice Derivatives

**T**his initiative aims to enable Sri Lankan marketers to compete in attractive markets serving manufacturers who appreciate the distinctive taste, aroma, color, or other more flexible usage and product application of Sri Lankan spice derivatives.

## WHY THIS INITIATIVE?

Spice derivatives, including essential oils and oleoresins, are either *fractionates* or *distillates*.<sup>9</sup> Essential oils are used in perfumes, cosmetics, toiletries, pharmaceuticals, soft drinks, ice cream, and frozen desserts. Spice oils, such as clove oil, containing eugenol, are used to flavor chewing gum and candy.<sup>10</sup> They both meet competition from synthetic products, but many consumers prefer natural products on their skin and in their mouths.

Cleaner and easier to dispense than whole spices, oleoresins are extracted from dried spices with a solvent. Sri Lanka's spice industry is somewhat puzzled by oleoresins in food manufacturing. Oleoresins offer manufacturers a cleaner, more consistent and, for many applications, a more convenient product than ground or whole spice. Yet the adoption of this technology seems to have been slowed by a consumer trend toward least-processed and natural products. Consequently, Sri Lankan extractors and distillers need even more and better market intelligence than whole spice exporters. Once a market opening is discovered, the Sri Lankan processors will need to match their technical capability to the client's product specification and contemplate capital investment or process consultancy to meet the specification. The goal is to develop long-term relationships with individual customers in key markets.

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<sup>9</sup>Fractionation is the process of separating the volatile elements of a fluid according to the temperature at which each vaporizes. An oleoresin is a mixture of the essential oils distilled from a spice and its non-volatile constituents that reproduce the complete flavor profile of the spice.

<sup>10</sup>Eugenol is the main chemical ingredient in cinnamon leaf oil (average 80 percent) and clove oil.

Technical challenges aside, a steady supply of offgrade whole spices is necessary. It is not economical to produce distillates from medium- or high-grade spices. But, in the case of cinnamon, processors need to supplement with higher grades to meet quality requirements for an oil or oleoresin. This issue is best addressed empirically and the industry would benefit from an integrated procurement operation in which exporters and processors work together to ensure that spice qualities produced are destined for the most appropriate end-uses given current market conditions.

### **Baseline Advantages**

The same conditions that make Sri Lanka renowned for producing whole spices give the country a strong comparative advantage in producing spice derivatives—a large portion of all spice-based derivatives come from aromatics. The higher average piperine content of Sri Lankan pepper is another strength in the production of derivatives. These advantages, however, are not sufficient to maintain international competitiveness. As the following analysis of market status and opportunities shows, reliance on its image alone has not resulted in a strong Sri Lankan presence in the U.S. market.

### **Market**

As in the first initiative, the United States is also the largest market for spice derivatives from tropical aromatics. Sri Lanka's small and, in this case, declining market share implies that enormous opportunities may exist if the right niches are found in the U.S. market.

### ***Essential Oils***

Over the last five years, U.S. imports of essential oils from Sri Lanka remained relatively stable, but as Table 4 shows, Sri Lanka's share of the U.S. market fell by 40 percent. In addition, these oils represent about 60 percent of Sri Lankan exports by volume, but only 35 percent by value. This strategic initiative will explore why Sri Lanka's market share and prices are declining in the largest market in the world. In the United States and Europe, consumer demand for natural plant-based products in foods, fragrances, and personal care products is growing while the use of synthetics is declining. Natural products dominate the European perfume market in terms of both value and volume, boosting sales. The European perfume market reached US\$475.6 million in 1998 and is expected to grow to US\$763.9 million in 2005.<sup>11</sup> When natural products become too expensive, however, the consumer is compelled to use synthetic ones. For example, the price of natural vanilla is high, so 90 percent of the vanilla flavor in foods is synthetic.

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<sup>11</sup>According to a survey by Frost & Sullivan.

	1996	1997	1998	1999	2000
<i>Tons</i>					
Total U.S. Imports	26,242	28,308	37,928	40,660	39,501
From Sri Lanka	130	102	140	170	131
Sri Lankan share (%)	0.5	0.4	0.4	0.4	0.3
<i>Weighted average \$ per kg</i>					
All U.S. imports	12.11	11.39	9.23	7.81	7.86
From Sri Lanka	13.09	10.03	12.35	11.22	9.95
Ratio	1.08x	0.88x	1.34x	1.44x	1.27x

Table 4. U.S. Imports of Essential Oils

- **Cinnamon oils.** In the late 1990s, the United States imported between 330 and 500 tons of all cinnamon and cassia oils annually. The volume imported from Sri Lanka rose from one-half percent to nearly 7 percent. The price paid for Sri Lankan oils was about 30 percent of the weighted average, suggesting that it consisted mainly of cinnamon leaf oil. This interpretation would be confirmed by observing that the oils imported by the United States were in 2000 equivalent to 12.5 percent of Sri Lankan exports by volume but only 6 percent by value.
- **Clove oil.** In 1996, the United States imported 440 tons of clove oil but the annual quantity declined to less than 300 tons in 2000. Negligible amounts were imported from Sri Lanka only in 1998. The small amount imported was sold at more than twice the weighted average price.
- **Nutmeg oil.** U.S. imports of nutmeg oil declined from about 250 tons in 1997 to 200 tons in 2000. Imports from Sri Lanka of 10 and 12 tons were registered in 1997 and 1998 but less than a metric ton in 2000. Thus Sri Lanka's share dropped from 4 percent to one-tenth of a percent. The price paid for Sri Lankan nutmeg oil was 75 to 90 percent of the weighted average. In 1997 and 1998, 50 to 60 percent of Sri Lankan nutmeg oil exports by volume went to the United States, dropping to 8 percent in 2000. Except in 1997, the share of Sri Lankan exports by value was the same as the share by volume.

### **Oleoresins**

The market for oleoresins was first developed in the United States and the technology for producing commercially acceptable oleoresins was almost exclusively in the hands of U.S. and Spanish companies through the 1980s. Only two U.S. companies have survived by investing heavily in research and development and concentrating on specialty products such as de-colored or "water dispersible" oleoresins.

The weighted average price and volume for U.S. oleoresin imports peaked at the start of the 1990s and has declined since. Table 5 shows that U.S. imports of pepper oleoresin from Sri Lanka accounted for 16 and 20 percent in 1997 and 1998, but plummeted to about 3 percent thereafter. Price data are inconclusive, but the Sri Lankan oleoresin appears to have been of average quality.

	1997	1998	1999	2000
<i>Tons</i>				
Total U.S. Imports	317	335	265	336
From Sri Lanka	52	68	9	8
Sri Lankan share (%)	16.24	20.35	3.51	2.48
<i>Weighted average \$ per kg</i>				
All U.S. imports	21.16	31.18	25.47	27.41
From Sri Lanka	16.25	32.45	33.28	24.88
Ratio	0.77x	1.04x	1.31x	0.91x

**Table 5. U.S. Imports of Pepper Oleoresin**

### ***World Market Opportunities for Essential Oils and Oleoresins***

Because so little is known about markets and trends for spice derivatives, the Spice Cluster's most important task will be to identify who buys Sri Lankan essential oils and oleoresins, why they purchase them, and whether there is room for a unique Sri Lankan offering. A strategic initiative focused on niche applications in the medium term is the most plausible solution given that Sri Lanka has such a small share of world consumption.

The world market for pepper oleoresins is well supplied by Indian processors who are perceived to be competing for market share before profit. During the 1990s, some food and beverage manufacturers reportedly increased their use of spice oleoresins, especially pepper oleoresin. If Sri Lankan processors are to compete profitably, their products will have to be distinct from Indian pepper oleoresins. Unless they can produce water dispersible and decolorized products (and continue to innovate along these lines), they are likely to be limited to price-conscious markets, such as those in Eastern Europe.

Oleoresins based on spices other than pepper, particularly those produced in small volume, hold more promise. It might suit a U.S. processor to have Sri Lankan processors produce small lots to their standards. A strategy based on small, varied lots would dictate the optimal size and style of operation of the processing plant.

### ***Supporting Industries and Services***

The principal industries needed to support this strategic initiative are manufacturers of distillation equipment; service industries, such as storage and distribution companies in

importing countries; laboratory services; and rural finance and extension services in Sri Lanka. Oleoresins have yet to find much of a market with end consumers, but if one can be developed, packaging, distribution, and customer services companies in Sri Lanka will become important partners.

## Organization

The success of this initiative will rely on (1) a steady supply of offgrade spices and (2) the ability to meet international standards on the mix of key chemicals in the derivatives. These requirements may seem contradictory, but are achievable if industry members work together to meet them. Achieving the necessary percentages of the key chemical (e.g., piperine in pepper oil or cinnamaldehyde in cinnamon) may require adding higher grade spices in production, but proper organization will minimize this.

For instance, improving the quality of spices overall will help ensure that even offgrade spices have more of the right chemicals in them. This will require that growers, processors, and public-sector extension services cooperate. Ensuring that raw materials arrive in good condition may also improve processing; this will require that companies in the upstream portion of the value chain cooperate to improve distribution and delivery systems. If it can be shown that newer or different capital equipment will increase the likelihood of getting derivatives with the right properties from offgrade spices, purchase costs and benefits could be spread among several processors. Or chemical content could be raised through joint international procurement of very high derivative grades to mix with derivatives produced in Sri Lanka from offgrade spices. And understanding precisely what chemical content and composition best fits customers' needs could lead to the discovery that percentage is less important in some cases than other characteristics.

## POLICY AND OPERATIONAL IMPLICATIONS

### Policy

Public–private dialogue should help ensure that Sri Lankan tariffs or taxes, quarantine, and customs procedures do not discourage the import of raw materials or specialized distillation equipment and should encourage the government of Sri Lanka to resist efforts in select markets, especially Eastern Europe, the United States, the EU, or Japan, to erect obstacles to the import of spice derivatives.

### Operations

Sri Lankan spice extractors need to cooperate with Sri Lankan exporters of whole spices to offer customers in importing countries a bundled choice of whole, ground, and derivative

spices that meet their needs. After pilot market studies are complete, industry participants will decide how the integrated marketing of whole spices and derivatives can be best accomplished.

## ADDING VALUE IN THE BUSINESS PROCESS

Figure 3 highlights areas of the business process value chain that will be affected by this initiative.



Figure 3. Value of Marketing Spice Derivatives

- **Sales and marketing.** Develop understanding of customer practices in preparing spiced foods and how derivatives best fit them; gain access to and build long-term relationships with key food manufacturers who use derivatives (and any other relevant industries); develop a collaborative and flexible marketing and promotional approach with other Sri Lankan marketers; and continuously gather and analyze market intelligence, particularly on technology trends.
- **Distribution.** This initiative will require strong logistics and distribution capabilities to ensure direct delivery to customers and inventory control.
- **Procurement.** Explore opportunities for processing low-grade and offgrade raw materials that enable distillation of derivatives of a type and quality that meets the needs of consumers in a variety of target markets at different price levels; collaborate with exporters of whole spices to devise creative, integrated procurement operations.
- **Management.** Devise a general plan for managing overseas activities and representatives.

## KEY BENCHMARKS

In each market or market segment, key benchmarks will be (1) price premium over weighted average import price, and (2) FOB value per kilogram of spice derivatives exported from Sri Lanka. Market share in target countries will be an important measure, but market share within Sri Lanka of one process versus another is unimportant because the focus is on an integrated offering of whole, ground, and derivative spices in the most profitable combination.

## ACTIONS

The Spice Cluster and its individual spice working groups will sponsor a workshop on the U.S. market for Sri Lankan spice derivatives. The goal of the workshop will be to establish a model for winning customers and will focus on issues affecting spice derivatives, including the following parts of the business process:

- **Marketing.** Match Sri Lankan spice attributes to U.S. customer preferences; determine how to reach U.S. customers; determine how to undertake integrated marketing in the United States leading to the design of a market entry strategy.
- **Distribution.** Investigate access to importing services and storage and distribution capabilities for spice derivatives of the appropriate quality.
- **Management and finance.** Plan efficient ways to serve U.S. customers. Explore ways to gain access to investment and working capital.
- **Research and development.** Evaluate contemporary distillation technology and equipment with a view to its suitability for target customers and its cost-effectiveness in Sri Lanka; bolster understanding of the uniqueness of Sri Lankan spices and how those characteristics carry through to derivatives.

## TARGETS AND EXPECTED RESULTS

Targets for this initiative are as follows:

- **Develop and market fractionates for a niche market.** Identify ten customers for various kinds of isolates that can be manufactured from spices available in Sri Lanka, preferably distinctive ones. Select at least two isolates for trial production and offer to selected customers within 18 months, then make commercial shipments of at least one isolate within 2 years.
- **Develop and market oleoresins for a niche market.** Identify 20 users of oleoresins, including food manufacturers who use both oleoresins and whole spices and oleoresin extractors, to select specialized oleoresins that can be manufactured in Sri Lanka, probably in small lots of minor spices. Select at least two products and produce trial lots for selected customers within 12 months, then make at least two commercial shipments within 18 months. Figure 4 shows the timeline for achieving these targets.

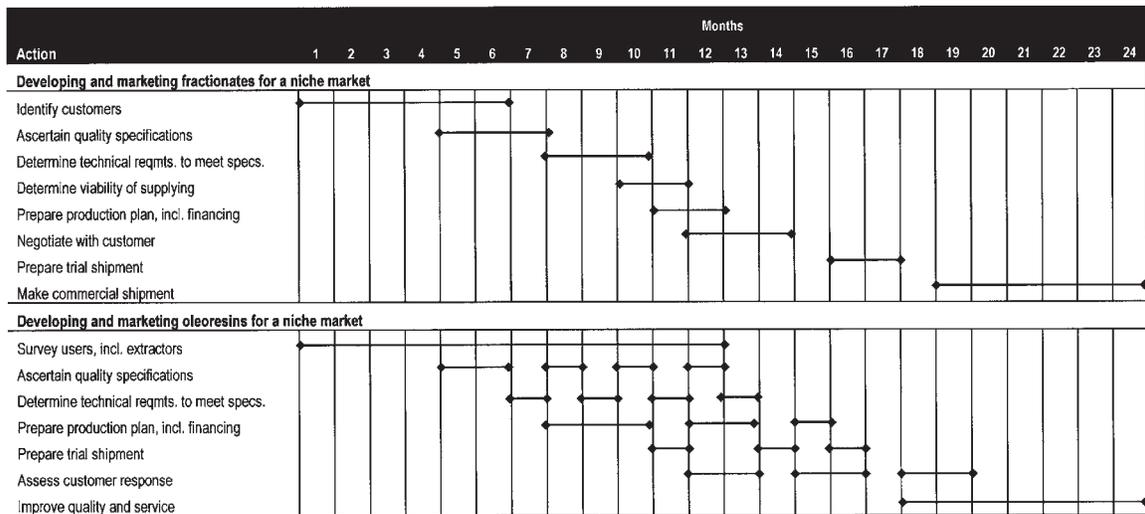


Figure 4. Timeline for Marketing Spice Derivatives

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# Improve Quality, Quantity, and Consistency of Spice Supply

**T**his initiative aims to increase the quality, quantity, and consistency of Sri Lankan spices through structural improvements in the value chain, rural finance, growing and post-harvest techniques and practices, and training. Quality will improve with the integration of “atomized” smallholders, closer links between exporter and grower, quality-based pricing, superior agricultural extension, and higher status for key trades. Quantity will increase with renewed commitment to spices by plantation management companies (PMC), access to competitively priced investment capital to recover neglected plantations, recovery of agronomic skills, and reinvigoration of the Colombo spice auction.

## OBSTACLES TO IMPROVING SPICE SUPPLY COMPETITIVENESS

To increase the quality, quantity, and consistency of Sri Lanka's spice supply, numerous obstacles must be addressed, including obstacles related to

- Supply chain rationalization,
- Cash liquidity at the farmer level,
- Quality-based price differentials and incentives,
- Capital and economies of scale,
- Emphasis on distinctiveness of products in procurement,
- Farmer organization,
- Government resources and coordination,
- Strategic alliances between producers and large-scale buyers and exporters,
- Rural credit and technical assistance for production,

- Quality-based pricing, and
- Plantation usage.

A detailed discussion of the Sri Lankan components of the value chain for pepper, cinnamon, and cardamom is presented in the appendix.

## Supply Chain Rationalization

Farmers often sell their spice crops to itinerant traders or collectors, who sell to town traders, who sell to exporters, who sell to international buyers. The length of this chain is often a function of price; as world market prices increase part-time traders enter the market chain. The length of the chain lowers the price paid to farmers and complicates attempts to improve quality or produce a differentiated product. Many in the industry, however, believe that this supply chain serves an important function through its sorting, grading, and other lower level value adding activities.

At the same time, the length of the chain reflects the advantage that each intermediary has in its own territory—close knowledge of people and an operation whose scale is appropriate to the supply of spices. Colombo exporters regularly visit producing areas but, for the most part, find it cost-effective to deal with intermediaries rather than replacing them with a centralized operation.

The structure of the spice chain persists despite improvement in communication between Colombo and the countryside. Prices paid at the weekly Colombo auction and the periodic price list of the Spices and Allied Products Producer's and Trader's Association (SAPPTA) (reflecting prices paid outside the auction) are quickly transmitted to growers by print, broadcast, and electronic media.

## Cash Liquidity at the Farmer Level

Small farmers sell their spice crops to petty, itinerant traders because the traders give farmers in-kind or cash advances. The farmers often need cash immediately for farming and other purposes. This arrangement obliges small farmers to sell low and be left out of price differentials based on quality. In addition, especially in the case of pepper, the fear of on-farm theft of the crop, and consequent loss of income, causes farmers to harvest early when the crop is not fully ripened and maximum yields and quality are not achieved.<sup>12</sup>

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<sup>12</sup>Theoretically, a grower can double income per hectare by waiting until peppers mature and selling 60 to 70 kg at Rs.170 per kg instead of harvesting 25 kg of light berries and selling them for Rs.220 per kg. On the other hand, the grower may harvest the successive crop in 8 to 9 months instead of one year. The price differential reflects the higher piperine content of the light berries and the demand from extractors in India, the United States, and elsewhere.

## Quality-based Price Differentials and Incentives

Quality-based price incentives are too small to change farmers' production or post-harvest practices. The overpopulation and cash motivations in the value chain feed this problem. The chain is so long and isolating that exporters are painfully aware that their price differentials do not reach the farmer because each intermediary takes a piece. And the small farmer is almost always obligated to sell to itinerant traders who rarely pass on quality-based price incentives.

## Capital or Economies of Scale

Domestic profit in the spice trade depends on a trader's or buyer's ability to buy when prices are low, process and grade the commodity according to price differentials, store it until prices rise, and then sell it, thereby taking advantage of price differentials and price volatility and maximizing income. Very few small farmers have the financial ability or expertise to engage in this type of activity. Furthermore, when prices fall growers do not have the financing or market information to engage in trading activities that generate a risk premium for competent intermediaries.

## Emphasis on the Distinctiveness of Sri Lankan Products in Procurement Practices

The Spice Cluster's strategy emphasizes how Sri Lankan spices can be distinguished from those of other countries by matching their characteristics with customer practices and consumer tastes. For example, Ceylon cinnamon has a sweet taste and Sri Lanka's cardamom is environmentally friendly. Small farmers cannot by themselves exploit such distinct features of their products. They require a consistent economic incentive to produce and handle spices in a way that distinguishes their products.

## Farmer Organization

With few exceptions, small farmers in Sri Lanka have never organized themselves, nor have they been organized successfully through top-down, government-sponsored cooperatives. They therefore have no voice, no bargaining power, and few effective means for learning about production technologies or marketing strategies.

## Government Resources and Coordination

Government can and does attempt to help small farmers increase production through a variety of subsidies. But the DEA's subsidy schemes for replanting and new plantings are limited, do not deal with marketing issues, and aim to maximize production, not farmer income—and these are not the same. The Department's extension officers, unlike those in

the private sector, are paid a flat salary with annual increments awarded without reference to performance. The officers' principal goal is to increase production, with little regard to quality. The operational budget is limited to paying salaries, with very little left over for transportation, extension bulletins, training, or promotional and educational materials. Additionally, coordination between the Department, the Industrial Technology Institute, and the agricultural universities is less than desirable.

Sri Lankan embassies could be more effective in promoting the island's spices. Except for a presence in Brazil, Sri Lanka has no representation in Mexico or South America, both significant markets for cinnamon.

### **Strategic Alliances between Producers and Large-scale Buyers and Exporters**

Other groups could follow one pioneering company's strategic alliance approach, which it uses for organic spices. Using specific criteria, the company selects farmers and organizes them into informal groups of approximately ten, each coordinated by a lead farmer. Members agree to produce their spices without chemicals, to follow the technical recommendations of the company's extension agents, and to sell their crop to the company. The role of these extension agents is critical and intense. On average, each farmer is visited twice per month during which time technical questions are answered and the progress of the crop is monitored. In stark contrast to the DEA with ratios of extension agents to farmers of 1:1,000-2,000, the company's ratio is approximately 1:40. This ratio provides farmers with rapid solutions and quality control oversight, while building mutual trust and confidence.<sup>13</sup>

Members may deliver spices to the lead farmer, who either pays immediately or shortly afterwards, using an advance provided by the company. The lead farmer then dries and roughly grades the crop under relatively sanitary conditions based on economies of scale resulting from volumes that a group of farmers provides. The lead farmer also has rudimentary but adequate short-term storage capacity for keeping spices until they are picked up by company trucks. The price paid varies according to the spice and averages between 10 and 20 percent above the prevailing local market price. The price is also established in advance so that the farmer need not be concerned with violent price swings.

This price differential, however, is only one economic benefit. The company also provides organically produced compost (based on chicken manure) and transportation of the crop

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<sup>13</sup>The Asian Development Bank also promotes privatized extension schemes under which farmers pay for services, such as the second Perennial Crop Development Project (including RAPID, under which a processor of spices coordinates agricultural extension services for growers as described here).

from the lead farmer's storage facility to the company's central facility, both of which reduce the members' costs of production.

The company provides an additional incentive by holding annual competitions between members based on productivity and quality. It also uses a "farm diary" system to improve the dissemination of technical information and monitor farmer practices. The farmer keeps a daily record of his cultural practices, related costs, the amounts delivered to the lead farmer, and the price paid. Over time, the diary gives the farmer precise, transparent knowledge of his operations and the income from the various spices produced.

### **Rural Credit and Technical Assistance for Production**

A number of organizations in rural Sri Lanka provide financial and business services to farmers. None focus on the growing of spices by smallholders, but some of their organizational practices and techniques could be applied to coordinating the efforts of many small groups. Two such organizations are rural credit unions—the Federation of Thrift and Credit Co-operative Societies Limited (SANASA), and Sarvodaya, especially its affiliate Sarvodaya Economic Enterprise Development Services (Guarantee) Ltd (SEEDS).

How might SANASA's coordination of smallholders contribute to competitiveness? SANASA represents the credit union movement in Sri Lanka. Founded in 1906, it now has about 8,400 primary societies and 39 secondary unions, covering more than 16 percent of the country's population, and with a loan portfolio of \$35 million, mostly financed by member savings. Furthermore, loans for agricultural purposes in 2000 amounted to 12 percent of all loans, down from 23 percent in 1999.

Through its Enterprise Development Division, SANASA operates a network of consumer shops that sells items produced by the members of other primary societies in other parts of the island. This initiative was conceived of as a kind of barter trade, putting SANASA in direct contact with farmer members of all types, including spice farmers.

Rather than depending on itinerant traders for credit and advance payments, members are encouraged to borrow from their primary societies. In late 2001, while long-term loans up to US\$300 attracted an 18 percent yearly interest rate (compared to an average of 22 percent for bank loans), the interest rate for small short-term loans was 1.5 percent per month (compared to the 10 to 20 percent per month charged by traders). Furthermore, each loan requires two co-signers, a practice that has resulted in a delinquency rate of less than 5 percent. This is even more significant when one considers that no loans are ever written off.

SANASA does not have its own agricultural extension agents but coordinates and promotes training programs for farmers using experts from the DEA and other government ministries.

It is also interested in assisting its farmer members in marketing products by setting up parallel trading operations. The honorary president of SANASA has said that “member savings could not be used for this since it would put their savings at risk,” but the organization is seeking a source of venture capital for this type of activity.<sup>14</sup>

Given the organization's island-wide coverage and its interest in assisting the small farmer, the strategic alliance model could be expanded to include SANASA as a source of farmer credit and in the identification of creditworthy farmers. Purchase agreements on the part of processors and exporters might eventually replace the need for co-signers, thereby directly linking the farmer through credit to the formal marketing chain. Furthermore, payments by the processors and exporters could be made directly to each farmer's primary society where loans could be paid off. The farmer would have the option of receiving the excess as a cash payment, or leaving it in the primary society and increasing the savings balance.

### **Quality-based Pricing**

Integrating smallholders through a rural credit union and the “nucleus estate” both go a long way to resolving obstacles such as value chain overpopulation and lack of liquidity and, more important, link the farm-gate price to spice quality. When farmers receive quality-based price differentials, price becomes predictable. This, however, will require specific and testable quality measurements based on market demand. With more predictable prices, farmers are more inclined to invest in better techniques and practices and the industry is more capable of offering differentiated products.

The organic market may be a special case based on a market niche, but it still presents a model for high-end differentiated markets and other high-quality markets. Instead of basing the price premium on organically produced spices, larger buyers and exporters could devise creative ways to reward selected farmers for producing the highest quality grades by entering into strategic alliances based on pre-established prices.

### **Plantation Usage**

Since the denationalization of plantations, many operating companies have had little interest in areas planted for spices. The managers of plantation operating companies are usually most knowledgeable about one major plantation crop—tea, coconut, or rubber. They have little “feel” for spices. In some cases, however, cinnamon has replaced rubber trees. A 1998 initiative by SAPPTA to promote spice growing by operating companies is said to have achieved little.

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<sup>14</sup>A primary society visited in Maddewila (Southern Province) had already begun this type of activity using retained earnings rather than member share capital.

A recent plantation project preparation study carried out for the Asian Development Bank (ADB) included a section on crop diversification for cinnamon, pepper, and cardamom. The report found that the *financial* return for pepper exceeds that for all crops except oil palm, tropical fruits, and arabica coffee. The *economic* return for pepper and cinnamon exceeds that for all crops except arabica coffee. By these measures taking up spice cultivation on underused land in the plantation sector is attractive, but business people do not customarily make business decisions using such measures. In the case of Sri Lankan plantation companies, the most important measure is cash flow. Because the lapse between planting and harvesting spices is about four years, the return on a rupee invested in planting today is predicated on price 4 to 10 years hence.

## POLICY AND OPERATIONAL IMPLICATIONS

### Policy

This initiative requires extensive public–private dialogue on (1) the coordination of DEA and EDB activities, as described under the first strategic initiative; (2) the government’s role in importing planting material; (3) training in rural areas; and (4) the neglect of areas planted in spices on plantations leased to management companies with a bias for major crops such as tea, rubber, and coconut.

- **Agency coordination.** The DEA has a key role to play in integrating smallholders into a coordinated marketing system. It already collaborates on a small scale with SANASA through the SANEEPA initiative, but there will be a much greater call on its services as SANASA involves more smallholders.<sup>15</sup> This will require strengthening the DEA and reaching agreement about its extension priorities.
- **Imported planting material.** The spice industry reports that the government’s quarantine requirements for imported planting material are onerous and deter the import of the best product. The industry and the government need to reach a compromise that balances the right of growers to be protected from diseases that could affect crops and the need of the spice industry to upgrade the quality and yield of exported spices.
- **Training.** The industry also reports a decline in the number of people entering trades associated with spices, for example, cinnamon peeling. Young people are not attracted to learning these skills in part because of perceived low social status. Training future cinnamon peelers and those willing to pursue similar trades require attention to the conditions under which they will work as villages modernize. The German notion of *handwerke*, which entails certifying and graduating trainees, could be a starting point for addressing this problem.

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<sup>15</sup>SANEEPA is an acronym in the Sinhala language meaning “Producers and Consumers Society.”

- **Plantation incentives.** Privatization of plantations through leases appears to have incorporated no incentive for lessees to make full use of land or maximize revenue from land planted in spices (as against the major plantation crop). The spice industry should attempt to convince PMCs, through sound arguments and assistance with proposals for funding (possibly from donor organizations), to plant spices. Meanwhile, the government should provide fiscal incentives by way of investment relief to attract the PMCs to the spice industry. This package of tax measures should dovetail with ADB financing packages to avoid disincentives to planting spices. Leases should also be reviewed for structural bias against spices and leaving land fallow.

## Operations

The spice industry, through SAPPTA, is well positioned and qualified to discuss policy and related matters with the central government and the PMCs. It is less prepared to interact with rural organizations and independent smallholders. For instance, the industry understands that it needs to provide SANASA with significant guidance and motivation if the relationship is to result in a higher percentage of better quality spices in greater quantities overall. The Spice Cluster is a strong candidate to do this because it pursues the best interests of the industry as a whole. The cluster would, however, need to have individual industry members provide advice and even consulting services. This should be a priority task for the cluster in 2002.

Emulating the “outgrower” scheme is also a challenge for Colombo-based exporters. The goal is not simply to replace intermediaries but to devise quality-preserving practices for the entire chain, from grower to customer. Doing so requires involving managers stationed in production areas and a private extension service—all based on techniques and agronomic practices that have proven successful in Sri Lanka or under equivalent conditions.

## ADDING VALUE IN THE BUSINESS PROCESS

As Figure 5 shows, this initiative will affect primarily the procurement and administrative and management segments of the business process value chain.

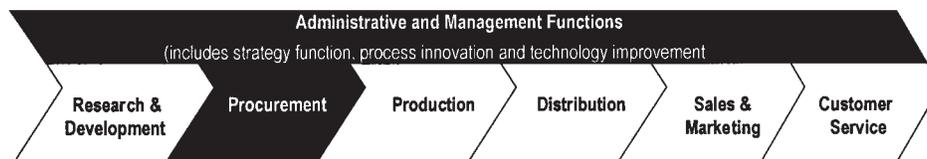


Figure 5. Value of Improving the Spice Supply

- **Procurement.** This initiative is directed toward a return to the farm and will require far stronger integration with the growers to realize improvements at the early stages of the value chain.
- **Administration and management.** Greater integration and cooperation with the growers and sophisticated grading and supply systems will require stronger planning, logistics, and administrative procedures.

## KEY BENCHMARKS

Benchmarks may include

- Number of additional hectares of spices planted;
- Output per hectare, per spice, per quality grade;
- Number of days between harvest and processing;
- Average content per batch of the valued chemical; and
- Percent of each kilogram picked that merits a premium classification.

## ACTIONS

To begin improving spice *quality* and the competitiveness of smallholder spice farmers, the Spice Cluster should

- Build closer links between exporters and growers using an outgrower system by, first, sponsoring a seminar on organizing smallholder spice producers in which representatives from a leading company present a methodology for informal farmer organization.
- Discuss points of common interest with SANASA, such as credit and technology transfer for small farmers with a view to a strategic alliance linking technical assistance and purchase contracts to the creative use of SANASA primary society loans.
- Determine if SEEDS offers complementary or additional services that would link smallholder spice producers with processors and exporters. (In such arrangements, build in pricing of spices based on quality.)
- Lobby the government for greater coordination between the DEA and the EDB so that their activities support the strategic initiatives and reinforce each other. The spice industry should offer to assist the government in developing a strategy for liberalizing and strengthening both organizations. The spice industry should collaborate with the DEA and other government agencies, such as the Department of Agriculture (DOA) for quarantine activities, to identify the best planting material and make it available to growers without duty or bureaucratic impediment.

- Collaborate with the government to design vocational training schemes for skills, such as cinnamon peeling, that provide trained personnel with attractive life chances and social prestige commensurate with their vocation.
- Collaborate with Sri Lanka's commercial attachés to develop and publish a "black book" reporting quality and other complaints of overseas buyers against Sri Lankan spice exporters.

To increase spice *production* and the competitiveness of smallholder spice farmers, the Spice Cluster should

- Begin resuscitating plantation interest in spices, interviewing the top management of plantation companies to determine how they make investment decisions and how ADB estimates might be useful in their decision-making.<sup>16</sup>
- Sponsor a workshop on the advantages of plantation spice production once plantation operators' investment procedures and criteria are understood and the ADB project starting in 2003 is confirmed.
- Work with the Ministry of Plantation Industries to re-examine contractual arrangements between the state and the PMCs to determine whether or why arrangements have resulted in neglect of areas planted in spices and what the formal avenues are for reversing this trend.
- Develop promotional material for PMCs describing how the Colombo spice auction can simplify the sale of plantation spices while rewarding better quality.
- Collaborate with the DEA and the PMCs to develop a training program for plantations to revive traditional agronomic and post-harvest skills related to spices.
- Collaborate with the DEA to collect production statistics.

## TARGETS AND EXPECTED RESULTS

Targets for this initiative include

- ***Doubling the percentage of whole spices shipped at a premium price (to markets such as the United States and the Netherlands) within five years.*** Complete an industry-wide partnership with a rural organization, such as SANASA, helping them

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<sup>16</sup>Spice estimates appear to be based on commodity prices for 2000, so it would be helpful if the Spice Cluster and TCI presented the recent history of prices in all three spices and any credible price forecasts together with an overview of market potential

integrate the spice growing and marketing activities of smallholders with a view to improving spice quality, within 6 months. Initiate at least two exporter-promoted outgrower schemes per year.

- **Increasing plantation spice production.** Help PMCs prepare at least five proposals to the ADB for financing new hectareage in spices by the end of 2002. Collaborate with PMCs in the recovery of at least 1,000 neglected hectares planted in spices. Increase the volume of spices handled through the Colombo auction by at least 5 percent annually.

Measures of success for these targets include (1) percentage of total exports of each spice that are sold at superior prices to demanding markets and (2) the volume of spices originated by rural organizations. The timeline for achieving these targets is shown in Figure 6.

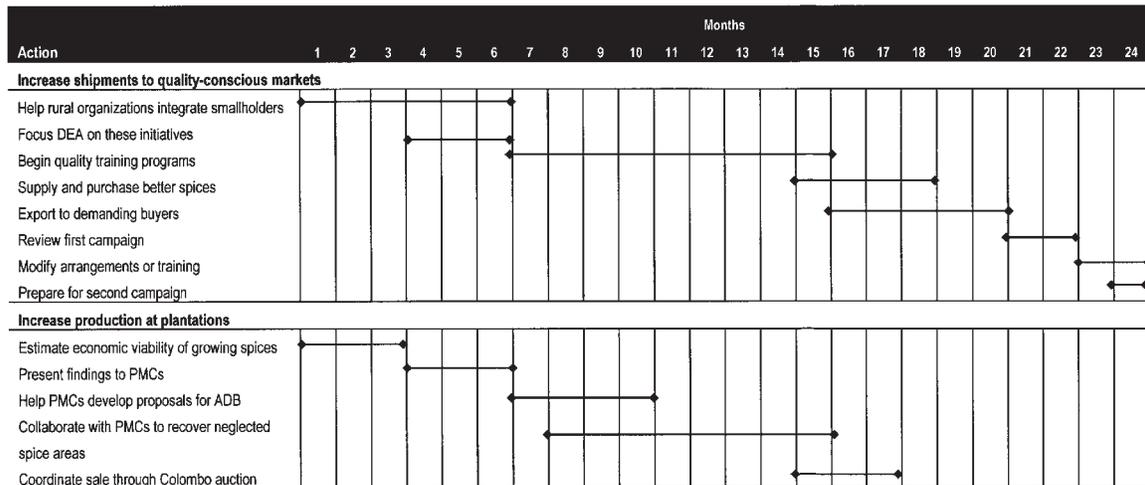


Figure 6. Timeline for Improving the Spice Supply



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# Appendix. Business Value Chain for Pepper, Cardamom, and Cinnamon

**T**his appendix describes the Sri Lankan components of the value chain for pepper, cinnamon, and cardamom. It is based on a review of documentation on the spice industry, meetings with members of the Spice Cluster, and interviews with spice farmers, government officials responsible for improvements in spice-growing technologies, spice traders, and two non-governmental organizations providing services to small farmers. Its author, Dr. Donald R. Jackson, visited the principal spice-growing areas of the country, including Kandy-Matale-Kegalle and Galle-Matara. The coordinator of the Spice Cluster accompanied Dr. Jackson on all interviews. The study was presented orally to the Spice Cluster for comments, which were then incorporated.

## PEPPER

Pepper, *Piper nigrum*, or the “king of spices,” is one of the earliest spices known to have been used by humankind and today is the highest volume commodity in the international spice trade. It is also the most widely used spice in the world. Of the total world trade in spices, 37 percent is pepper (1996). Brazil, India, Malaysia, and Indonesia account for approximately 90 percent of world exports.

The black pepper of commerce is derived from the immature (green) dried berries of a woody perennial evergreen climbing vine and is native to the humid tropical forests of

South Western India. White pepper is derived from the same plant but is the product of mature, red berries whose outer skin (mesocarp) has been removed. It can be worth 150 percent more than black pepper. (At the time of this report the world market was oversupplied with white pepper so white and black types were selling at approximately same price.) In either case, the berries are produced on spikes containing 20 to 50 berries each that ripen gradually from the top downward. Thus, at any given time a spike will contain mature (heavy berries) and immature berries (light berries), including “pops” that have not begun to fill.

In Sri Lanka, pepper is primarily cultivated in the districts of Matale, Kandy, Kegalle, Kurunegala, Ratnapura, Matara, and Badulla as a backyard, smallholder, and plantation crop. Backyard and smallholder crops are intercropped with other spices, coffee, cocoa, rubber, and coconuts. On plantations, it is primarily mono-cropped even though the shade trees that protect the principal tea and coffee crops are used to support the pepper plants.

The DEA in Matale has identified ten high-production, disease-resistant varieties that it provides to farmers on a limited basis. Alternatively, farmers themselves select varieties based on the same criteria.

Production and productivity are primarily functions of pruning, fertilization, and plant density. Although the DEA recommends pruning vines to a maximum height of 3 to 3.5 meters to stimulate side shoots and aid in harvesting, most small farmers simply allow the vines to grow as high as the support tree to which they are attached. This at times can reach a height of 15 meters or more, making harvesting difficult and requiring the use of precarious, rudimentary ladders. The DEA also recommends organic and inorganic fertilization, but this is not widely practiced. Many farmers cite the high price of both types of fertilizer, the need for credit to purchase it, and their unwillingness to do so should the price received not be sufficient to pay back credit. Plant density is a useful concept for technicians, but is of little value to small and even medium farmers who multi-crop to avoid risk and even out their yearly income stream.

The quality of harvested berries is determined by many factors, but principally by the variety grown and the time of harvest. Technicians and farmers debate the merits of selected versus traditional varieties. Because many small pepper producers rely on vines that have been established for years, they are often reluctant to cut them down and plant new varieties. Harvest time itself is determined by many factors. As the pepper spikes mature, they do so berry by berry from the top down. Soon after a berry becomes mature and turns red, it falls to the ground and is lost. This happens approximately six to eight months after flowering and pollination (70 percent during the November to January period and 30 percent from May through July, although small amounts can be harvested year round).

Nevertheless, a significant number of producers harvest their pepper prematurely.<sup>1</sup> According to an informal study conducted by the DEA research station in Matala, 60 percent of responding farmers cited two reasons for harvesting early—fear that their crop would be stolen while still on the vine and the need for quick cash.<sup>2</sup>

### **On-the-vine Harvesting**

In the marketing chain for on-the-vine harvesting, a trader and his crew of “pluckers” approach a farmer and negotiate an on-the-vine price for the entire crop. The pluckers then sweep through the farm harvesting every type of pepper berry whether red, green, light, or a pop. Because of heavy competition at this level, the trader tends to approach the farmer sooner rather than later, usually beginning at the three-month point after flowering. In this type of sales agreement, the farmer is not paid a differential based on quality but he does reduce the chance of his crop being stolen, receives an immediate cash payment, and rids himself of the tedious task of harvesting and drying his crop.<sup>3</sup>

The trader then transports the harvest to a drying facility, usually a simple slab of concrete, where threshers are used to separate the berries from the spikes. (Other methods are also practiced.) The green berries are thereafter sun dried. The recommended technical treatment is to blanch the berries (dip them for one minute in a hot water bath) to prevent microbiological contamination, speed drying, prevent the growth of mold, and give the pepper a superior appearance.

In some cases, rudimentary grading is also performed once the berries are dried and then enter the formal marketing stream through sales to ever-larger traders until they reach the oil processors or whole peppercorn exporters. A quality differential is sometimes paid in the formal marketing chain but whether this differential is sufficient to stimulate production of quality that the country needs to compete in the world market is questionable. There is also anecdotal information that some traders themselves, in spite of quality differentials, adulterate the pepper they sell with weight-increasing trash.

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<sup>1</sup>When the spikes should be harvested becomes even more complex when the crop is destined for pepper oil extraction plants. Oil content reaches its maximum level approximately 4.5 months after fertilization. The profit maximization time of harvest is therefore a delicate weighing of the relative prices of black pepper, white pepper, and pepper oil. To stimulate the production of heavy berries for the white pepper market, a certain amount of light berries must be harvested.

<sup>2</sup>Making the theft of agricultural commodities a non-bailable crime might solve this problem.

<sup>3</sup>In economic terms, the farmer is a “risk avoider” rather than an “income maximizer.” But, if the risk of theft is real, the farmer might be both.

## Farmer Harvesting

Some farmers, using family or hired labor, harvest their crop, thresh it through a variety of means, dry it on their own cement slab, and then take it to a trader in a nearby town where quality differential payments are sometimes recognized. This results in a higher value-added product and supposedly a higher price. While price differentials based on quality are sometimes paid at this point, they appear to be lost in the highly volatile price swings resulting from world market fluctuations.

In both of the marketing chains described here, it is the traders, rather than the farmers, who are able to play the market, buying low and selling high, because they have the financial resources to store the crop until prices rise. Storage facilities can be either owned outright or leased.

The DEA manages a subsidy scheme that provides farmers with cash payments for planting new pepper vines, purchasing pepper threshers, and constructing hot water treatment vats and drying slabs. Funds are limited and the subsidy covers only up to 50 percent of costs. The improved varieties recommended by the DEA require fertilizer to produce their higher yields but farmers are reluctant to purchase fertilizer on credit should the price of pepper go down. As such, only a few farmers have been able to take advantage of the scheme.

## CARDAMOM

Cardamom, the “queen of spices,” is the dried fruit of *Elettaria cardamomum*, a perennial herbaceous plant belonging to the ginger family. Indigenous to Southern India, the spice is composed of seed clusters formed on panicle-like spikes arising from the rhizomes of the plant. The major producing countries are India and Guatemala.

In Sri Lanka, cardamom is produced in the Kandy, Matale, Kegalla, Nuwara Eliya, and Ratnapura at elevations between 600 and 1,800 meters. The plant requires 50 to 75 percent shade, so it is produced primarily under high canopy forest cover. From 1996 to 2000, cardamom exports varied considerably, from a low of 5.7 tons in 1996 to a high of 16.3 tons in 1998, thanks to world market price fluctuations and the crop's ability to be stored for relatively long periods of time, albeit with appreciable reductions in quality. Yields can vary greatly, from between 45 and 250 kilograms per hectare depending on soil, cultural practices, and the age of the plants.

Where rainfall is well distributed, the plant can be harvested year round every four to six weeks. Where rainfall is bimodal (the big rains, *maha*, and the small rains, *yala*) the harvest season is from September to March. After harvesting, on-farm processing is performed. This consists of the labor-intensive removal of both stems and any remaining flower parts, plus the removal of any insect damaged fruits, as well as any extraneous debris, although this

tends to be done more on the larger plantations rather than on smallholder farms. (This can be done before or after drying.) The crop is then dried, sometimes in the sun, which produces an inferior “bleached” product, but mostly in hot air chambers of various levels of sophistication. The degree of heat applied, usually through the use of firewood, and the duration of the drying period can vary from 18 to 40 hours. Larger farmers with their own drying facilities often dry the harvests of smaller growers for a fee or a portion of the crop.

By law, cardamom may be transported only by those who own registered cardamom land so there are no itinerant petty traders, as with other spice crops. Much of the yearly cardamom crop enters the market chain through in-town traders who then resell to larger traders and exporters. A portion of the crops is sold at auction. Auction sales, however, are taxed, so this mechanism is often avoided, especially by the smaller growers.

## CINNAMON

True cinnamon, *Cinnamomum verum Presel* (or *Cinnamomum zeylanicum Blume*), also called Ceylon cinnamon, is derived from the dried inner bark of a member of the Lauraceae family and is indigenous to Sri Lanka. It is often confused with other species of *Cinnamomum*, especially *C. cassia*, which is grown in Indonesia, China, India, Thailand, and Vietnam. *C. verum* produces a sweet, delicate taste and a fine aroma; cassia is bitter and pungent. The European and Latin American markets distinguish between these characteristics, while the U.S. market does not. This is critical because the cassia variety sells for one-fourth to one-third the price of *C. verum* and can easily undercut its market where consumers are uninformed or unexposed to the differences.

More than 70 percent of Sri Lankan cinnamon is produced along the coastal strip of the Galle and Matara districts where the soils are sandy but fertile and yields tend to be higher. Twenty-four thousand hectares—44 percent of the land—is dedicated to cinnamon, making it the country’s most important spice crop. Over the past five years, the amount exported has averaged 10,000 tons with the value of exports in rupees remaining relatively unchanged when compared to the volatility of other spice crops. (During any given year the export price varies only 10 to 15 percent.)

In world market terms, Sri Lanka exported 85 percent of the volume of *C. verum*, the balance coming from the Madagascar Republic and the Seychelles. Labor shortages in both countries cause them to export the whole bark in bulk to the United Kingdom where cinnamon bark oil is extracted. Mexico is the principal buyer in the world market, taking 60 percent of the crop, followed by the United States, Peru, and Colombia. It is thought that Mexico re-exports at least a portion of what it imports.

In the U.S. market, it is the large Latin American population that demands true cinnamon, while industrial buyers prefer cassia because it costs less. It is also said that the large U.S. retailers of cinnamon mix cassia with the *C. verum*, which approximates the taste of real cinnamon. Of even greater significance is that while the International Standards Organization distinguishes *C. verum* from *C. cassia*, neither the Harmonized Customs Code nor the U.S. Customs Code do. SAPPTA is lobbying the government of Sri Lanka to bifurcate the harmonized code for cinnamon into *C. verum* and *C. cassia* and to designate it as a “geographic indication branded product.”

Given Sri Lanka's dominance of the Ceylon cinnamon market, cinnamon exporters could be “price makers” rather than “price takers.” Nevertheless, they have not been able to organize appropriately. Instead, they compete with one another, undercutting prices offered by international buyers. Competition from *C. cassia* further limits their ability to increase prices.

Leaf oil and bark oil are distilled from cinnamon using steam stills. (Processes for both oils could be technically upgraded.) Both types of oil are used in perfumes and cosmetics. Bark oil is used in liqueurs and as a food flavoring. In 2000, the export value of the two types of oil together amounted to 6 percent of the value of whole cinnamon exported.

The ability of *C. verum* to coppice (resprout freely from the base, also called tillering) under cultivation, enables management of the plant as a tall bush with eight to ten sprouts of varying ages at any given time. It is harvested when a sprout is approximately two years old (approximately 2 to 2.5 meters in height and 3 to 5 centimeters in diameter at its base), after its new leaves have hardened. At this point, the bark is relatively easy to peel. The recommended harvesting schedule is every six to eight months. But many small producers, in an attempt to maximize yields, overfertilize their bushes, which allows for more rapid growth and a harvesting interval of only four to six months. This practice lowers overall yield and quality. A distinction must also be made between small and large producers' processing and marketing practices.

### **Small Producers**

Small producers are those with less than five hectares. Some hire skilled peelers to augment family labor. It is customary for peelers, who receive one-third of the sales price in payment, to pay their peelers in advance of any work performed. In a cash-poor economy, the small farmer normally does not have the money to do this and must resort to borrowing it informally from itinerant traders, thereby creating dependency and a willingness to accept whatever price traders are offering. Given this, the farmer has even less incentive to produce a quality product. In either case, itinerant traders then resell the processed and often poorly graded, or ungraded, cinnamon to larger traders and eventually to exporters who must then regrade the product, thereby incurring higher costs.

Additionally, small farmers for the most part do not have access to technical assistance. In the best of cases, they must seek out the extension officers of the DEA to obtain information on production issues. The Department does not work on marketing, so in that area the small farmer is on his own.

### **Larger Producers**

Medium and large producers, those with more than 5 hectares, have different problems. First, even with resources to construct a proper peeling and drying shed, the large producer faces a labor shortage. Scraping off the outer bark, rubbing the inner bark to loosen it from the wood, peeling the inner bark, and grading it into between 11 and 13 internationally accepted grades demands skill but is also tedious, menial work. The stigma of menial labor and the lack of “dignity” in the workplace discourage young people from seeking this type of work, which often leads to a scarcity of workers.

Second, the technology for the labor-intensive peeling process has changed little in the past several hundred years. While the University of Ruhuna has done some experimental work related to the rubbing of the inner bark, no labor-saving technologies are being developed. The larger producers tend to sell their crop directly to the larger traders or directly to exporters who may or may not regrade the cinnamon.



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# Glossary

<b>ADB</b>	Asian Development Bank
<b><i>C. cassia</i></b>	<i>Cinnamomum cassia</i> or <i>cassia</i> . A member of the Lauraceae family grown in Indonesia, China, and Indo-China whose dried inner bark gives a bitter, pungent taste.
<b><i>C. verum</i></b>	<i>Cinnamomum verum</i> Presel, <i>Cinnamomum zeylanicum</i> Blume, Ceylon cinnamon, “true” cinnamon. A spice derived from the dried inner bark of a member of the Lauraceae family and indigenous to Sri Lanka.
<b>DEA</b>	Department of Export Agriculture
<b>DOA</b>	Department of Agriculture
<b>EDB</b>	Export Development Board
<b>FOB</b>	free on board
<b>g</b>	gram
<b>kg</b>	kilogram
<b>ha</b>	hectare
<b>PMC</b>	plantation management company
<b>Rs</b>	rupees
<b>SANASA</b>	Federation of Thrift and Credit Cooperative Societies Limited
<b>SANEEPA</b>	Sinhala language acronym for “Producers and Consumer Society”
<b>SAPPTA</b>	Spices and Allied Products Producers’ and Traders’ Association
<b>SEEDS</b>	Sarvodaya Economic Enterprise Development Services (Guarantee) Ltd.
<b>TCI</b>	The Competitiveness Initiative
<b>USAID</b>	United States Agency for International Development

