



All ACP Agricultural Commodities Programme

Spice Sub-Sector

A STRATEGY for ETHIOPIA

Submitted to the Government of Ethiopia  
by the Spice Sector Strategy Coordinating Committee  
February 2010



## The present strategy has been developed by the stakeholders of the spices sector and the institutions of Ethiopia

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In collaboration

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## **Note to the Readers**

In response to a request from the Government of Ethiopia, the EU funded All ACP Agricultural Commodities programme initiated the development of a stakeholder driven Spice sector strategy in Ethiopia.

The overall objective of the programme is to improve incomes and livelihoods for ACP producers of agricultural commodities and reduce vulnerability at both producer and macro levels. The present strategy document represents the first attempt to set development and market priorities in the spice sector through a participatory process that has involved all relevant value chain stakeholders. In doing so, the strategy development process has established common understanding between private sector actors in the Spice Value Chain and different Government agencies with the shared goal of improving livelihoods of the farmer and business population.

The sector strategy development was led and co-ordinated by a working committee composed of value chain representatives and endorsed by Government in May 2010. In less than 12 months, the coordinating committee succeeded in ensuring the active participation of more than 100 sector stakeholders from all regions in Ethiopia as well as in engaging key actors in government, farmer associations and business community.

The strategy contains an evaluation of present and future market potential, current sector performance and response activities. The strategy also represents the way forward and the decisions taken by sector stakeholders representing the whole value chain.

Towards implementation, it is anticipated that the coordinating committee will also continue to represent the strategy priorities and beneficiary interests acting as a central point between sector stakeholders, government and implementing partners and donor agencies.

A special vote of thanks goes to the Coordinating Committee members who have given up their own time in pursuit of the development of the present strategy and in order to ensure stakeholder interest representation as well as overall quality and customization of the strategy.

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## Statement from Ministry of Agriculture

Ethiopia launched and commenced implementing earnestly its new Growth and Transformation Plan (GTP) this year. The GTP is designed with the view to maintain, continue, accelerate and upscale fast growth recorded in the last five years monotonically and hence kick start the transformation process of the agriculture dominated Ethiopian economy.

GTP envisages the Agricultural Development Led Industrialization-ADLI strategy to continue with the bid to transform Ethiopian economy from Agriculture domination and using Agriculture itself as a stepping board. This would pave the way for the industrial sector to play an increased role in the economy and hence gradually take the leading role in the Economy. ADLI gives due emphasis to commercialization of Agriculture and exporting spice is among its target commodities.

The Ethiopian varied agro ecology supports growing of a wide variety of crops in general and spice crops in particular. As a result the country hosts several indigenous common and exotic spice crops, which are cultivated widely since the time immemorial. Spice crops are produced in various regions of the country and predominantly by small farmers as a cash crop traded primarily in domestic markets, but with increasing success also entering foreign markets. The spice sub-sector has an immense potential for economic development and poverty reduction through creation and expansion of employment opportunities and distribution of income and foreign exchange earnings.

However despite all the potentials and opportunities of having such a long history and variety of them with a diversified conducive agro-ecology base, the spice sub-sector potential remained unexploited. The sub-sector is still not organized, low in productivity and inefficient. The production of all the different types of spices, especially the technique employed by smallholders is mainly based on traditional ancient knowledge that has been inherited and transferred from generations to generations. Producers seldom use modern technologies such as farming tools and new techniques and inputs like pesticide, fertilizer and improved seeds. Moreover, the production system is based on rain-fed agriculture; therefore the supply of spices is unsustainable because of the vulnerability of the crops to possible droughts. In most cases mixed unplanned cropping is performed and normally smallholder farmers do not allocate enough land for the production of spices.

Addressing these constraints perfectly fit into the Agriculture sector policy direction of GTP which focuses on enabling small holding farmers to access and use appropriate improved modern technology, thereby enhancing production and productivity of the sector and encouraging the domestic and international private business's role in Agricultural development. It is in full recognition of these that the MoA has initiated and championed the development of the National Spice Subsector Development Package which will serve as the Strategic guidance in our efforts to unleash the potential of the subsector. The strategy development was coordinated by Committee members drawn from key sector Ministries and enriched by concerned stakeholders' during the national consultative workshop held on 14-15, July 2010. The International Trade Centre (ITC) facilitated it under the auspices of the All ACP Agricultural Commodities Programme with the financial assistance of EU.

The Ministry of Agriculture would like to seize this opportunity to thank all who contributed relentlessly to the development of this package and/or the strategy. The Ministry would also like to request all concerned stakeholders for their unreserved support in the implementation of this well prepared packages so that the strategy would impact the sustainable development of the subsector and the national economy at large.

## **Message from Ministry of Trade**

Spice trade is a commercial activity since antiquity and is perhaps among the very few pioneer commodities traded internationally. The contribution of spice trade in the world civilization is well recognized and documented and Ethiopia was among the beneficiaries. During the ancient Ethiopia Kingdoms notably Axum, Ethiopia was very much involved in spice trade and spice was perhaps among the top few pioneer export commodities Ethiopia traded internationally by then.

Despite Ethiopia's a long history in Spice trade and its conducive agro-ecology which supports the production of variety of them, the contribution of spice trade remained minimal and low.

MoT is charged with the responsibility of creating conducive and enabling policy, legal and regulatory environment in support of trade particularly that of export trade with the view to facilitate a more diversified export trade. Given the potential of spice crop for an expanded export trade, it is definitely among the priority crops that the Ministry consider for the support.

Thus the MoT was represented in the Coordinating Committee that coordinated the Strategy development process and participated actively at different stages of the development including the stakeholders workshop held mid July 2010.

## **Message from Ministry of Industry**

The new Growth and Transformation Plan (GTP) of Ethiopia kick started this year gives a major emphasis on the Industrial sector with the view to achieve the vision of industrial prosperous Ethiopia. Hence the industry is envisaged to play an increasing role in the Economy through the promotion of industries based on the resource endowments of the country to generate employment opportunities to the ever growing raw, semi skilled and skilled labor force.

To this effect, generating, adopting and expeditious transfer and use of appropriate technology is among the core of the elements of the strategy. To this effect, the industry strategy underscore on the use of the locally available and agricultural inputs and promotion of agro-processing which is among the eight priority sub sector of the Industry.

Promotion of import substituting and export diversifying industries with a net effect of increasing the foreign exchange reserve of the country is another area emphasized in the strategy.

Spice processing activity is supported in the various elements of the industry strategy notably promotion of Agro-processing, use of locally available agricultural inputs technology within the rich of the available semi and skilled labor and export diversification.

Mol believe that the Spice Strategy complements the industrial strategy and serves as an important tool in promoting value addition to this important commodity and unleashing the potential of the sub sector. Therefore the Ministry call up on concerned stakeholders for their usual support in its implementation.

## Message from EPOSPEA

Ethiopian Pulse, Oil Seed and Spice Producers and Exporters Association (EPOSPEA) is among the most active and model private sector association representing the private business involved in the production and trade notably export trade of Pulse, Oil Seed and Spices products.

At the very outset, EPOSPEA would like to seize this opportunity to present its compliments and sincere appreciation to all partners who have made this timely deliberation of an indispensable imitative a reality.

As it us well Known, the Government of Ethiopia (GOE) has embarked on an ambitious; but possibly attainable; growth and transformation plan since July 2010. In line with this plan, accelerating the scale of agricultural products in quantity, quality and variety has been considered as key strategic priority. Among which, diversifying the export of spices is pursued as the major areas of focus, whereby special attention needs to be given accordingly. The plan has targeted the export revenue earned from spices of grow towards 50 million\$ US within the coming five years. Likewise, the planned exportable amount to be increased by 100% which is envisaged to grow to 30.000 tons at the end of the five years planning period, coming from the 2009 performance of 15,000 tons. World market prices for spice are expected to remain firm.

As a matter of fact, this target requires a big commitment from the members of the Association, especially from those members who have been actively engaged in the sub-sector. In the light of this, we are very much pleased for the timely presentation of this strategic plan which is aimed at addressing the critical challenges of the sub-sector at this juncture. It is also more imperative to underline that having a sound strategic plan is not an end by its virtue; rather it is the beginning of a programme. We are faced with a wide gap to breach in order to reach our goals, which undoubtedly require appropriate actions in translating what has been packaged in to the planning frame work in a timely manner.

EPOSPEA, as the member of the Spice Strategy Development Coordinating Committee, hosted all the meetings of the committee while preparing the strategy document. It has played a key role in mobilizing the private business and gathering of relevant information for the strategy directly from key operators of spice trade who are members of the association.

Thus, EPOSPEA would like to reaffirm again its commitment towards the realization of the pertinent interventions laid down in the plan by exerting its whole efforts to its level best. Last but not least, EPOSPEA has also taken the privilege to extend its call for concrete action to all pertinent stakeholders; including public and private sectors, individual and organized business entities as well as development partners; to come together with strong collaborative synergy to attain breakthrough results.

## **Message from Coordinating Committee**

A working committee has been established in may 2010 by the Ministry of Agriculture to coordinate and develop the much needed strategy for the spice sector.

The committee is composed of volunteers from the sector including business owners, managers , and government representatives from MOA, MOI, MOT and EPOSPEA.

Next to Coffee, Spices are economically and socially important since they are a source of income for smallholders; they can attract foreign currency and can provide ample opportunities for employment should the industry develop.

Spice growers enjoy more benefit than any other agricultural commodity. For example, in the year 2001 in only 3 regions (Southern Ethiopia, Amahara and Oromia) almost 1 million tons of spices have been produced. In addition, in 2006/2007 total land coverage of red chilies alone was almost 80,000 hectares. In that same year about 1.1 million households equivalent to approximately 5.5 million smallholders were engaged in the production of red chilies, and earned over 1.25 billion ETB (average farm gate price of 20 ETB per KG).

It is clear for the coordinating committee that he spice industry will be able to contribute significantly to Ethiopia's social and economic development. It is in light of this belief which is backed by our tradition in spice and by strong international and regional market demand that the committee has embarked in the development of the way forward.

Last but not least, the coordinating committee wishes to thank the Government Authorities for all the support provided as well as the more than 100 sector stakeholders that participated in the process.

The challenge forward is now for coordinated implementation, taking into account the sector stakeholder priorities as well as the market potential. The committee wishes to ensure its full engagement to advise and support Government so that impact can be achieved.

## Message from ITC

The International Trade Centre has been enjoying a long standing collaboration with Ethiopia in particular in providing technical assistance in improving export performance of important sectors such as coffee and leather.

Now within the framework of a large ACP Programme funded by the EC, ITC has the opportunity to assist the spice sector to design a national strategy . The methodology used consists of a full participation of all the stakeholders in the value-chain representing private-public partnership. The conclusions and recommendations made as a result of a series of consultations and participatory workshops enabled the sector to prepare an action plan and an implementation framework.

The spice strategy is now fully owned by its stakeholders and ITC is fully confident that the spice sector in Ethiopia is entirely committed to achieve its objectives and is well prepared to face the challenges. The immediate challenge is to better organise the sector by way of forming a national body or association with specific tasks and guaranteed resources to make it sustainable.

The world market for spices is growing rapidly and the opportunity for Ethiopia to tap the market potential is huge. The implementation of the strategy in its entirety would no doubt improve the economic benefit to the whole sector in particular by increasing the export revenue to Ethiopia and by guaranteeing a regular employment and increased income to the farmers, processors and exporters.

ITC takes this opportunity to congratulate all the stakeholders in the spice sector to the contribution made in finalising the strategy and encourages all the donor communities and NGO's to consider all assistance as appropriate to support the sector which is rural based and to a large extent employs women at different stages of the value-chain.

Patricia Francis

Executive Director, ITC

“Export Impact for Good”



## 1. Introduction and brief background

Ethiopia, with a population today of nearly 80 million people, was on the ancient spice trail from India and was visited by Arabian and Persian spice traders who left their mark on the cuisine. Ethiopia has become one of the largest consumers of spices in Africa. People use spices to flavor bread, butter, meat, soups, and vegetables. And they use them to make medicines and perfumes<sup>1</sup>.

Similar to India, the majority of spices produced in Ethiopia (80%+) are absorbed domestically. But at the same time, export of spices is developing and brings increased foreign exchange. In 2009, spice exports reached 15.000 Mts, equaling a value of 11 million\$ US as per the table below.

**Table No. 1. Ethiopian exports**

Ethiopian Agrosector	Export 2008-2009		
	tons	USD 000	USD/ton
coffee	134.000	\$376.000	\$2.806
oilseeds & pulses	425.000	\$445.000	\$1.047
sugar	27.000	\$15.549	\$576
flowers	na	\$130.697	na
fruits	37.161	\$11.912	\$321
<b>spices</b>	<b>15.000</b>	<b>\$11.100</b>	<b>\$740</b>
cotton	4.411	\$4.900	\$1.111
Other	40.000	\$18.000	\$450
<b>Total Agri</b>	<b>682.572</b>	<b>\$1.013.158</b>	

Agrosector	Percentage
coffee	37%
oilseeds & pulses	44%
sugar	2%
flowers	13%
fruits	2%
spices	1%
cotton	1%

Ethiopia is geographically better located towards the EU than India or Indonesia; which will support its export ambitions, provided exportable volumes are available.

Ethiopia is a homeland for many spices, such as korarima (*Aframomum Korarima*), long redpepper, Black cumin, white cumin /Bishops weed ('Nech azmud'), coriander, fenugreek, turmeric, sage, cinnamon, and ginger.

As plant species spices have a wide possibility of being cultivated in different agro ecological zones of the country. Except pepper (*capsicum annum*) spice cultivation is traditional, no improved seed or planting material and not market oriented. However, there is a limited business activity in production, processing and marketing of spices and spice products. The cultivation practice and technique are highly based on knowledge that passed from generation to generation, and the production level is low. Spices are used as flavouring material, source of essential oil, source of color and cash crop of many smallholders. The cultivation practice in smallholders' farm is fragmented and planted as mixed crop within their main crop land and rain fed.

So far Ethiopia has not established itself as significant supplier of spices and the focus has been towards the extraction of oleoresin for export. Since the country's image is linked to berbere and spice production is widely known in the country, this might be a good starting point for further development and improvement.

<sup>1</sup> See Ethiopian Agriculture Portal (MinAgriculture)

The contribution of spice to the national economy is not significant. However in the past four years its exports have grown significantly from 3.7 million\$ US to 6.8 million\$ US thereby confirming an encouraging progress and potential. The history of spice use in Ethiopia is an ancient one and spices have always been and remain as basic food items in the diet of the Ethiopian people.

Among the main constraints hampering the development of the spice sector is the difficulty faced by the spice farmers to enter in to the world market which is dictated by global competition. The production of quality spices based on the needs of the international market is the necessary condition for export. Then these spices must be channeled to the international market through promotion and creation of market links. These are demanding tasks which call for concerted efforts by all stakeholders at different stages of the value chain.

Addressing these constraints requires the existence of an effective and efficient spice value chain service delivery mechanism. Crucial in this respect are extension services to build the capacity of the value chain players. We must disseminate technologies and research services to ensure continuous generation of technologies. Regulatory support by the government must ensure efficient and orderly management of the spice value chain. Finally, financial services by banks and micro-credit institutions and transportation and related logistic infrastructure are necessary. A key requirement in service provision is timeliness, adequacy and ease of access. Defaults in delivery or quality are not accepted in this export environment.

As a cash crop, the spice subsector is amongst the important crops that fit within the strategy of commercialization of agriculture. Spice, being a cash crop, has a high potential of enhancing the purchasing power of the small holding farmers. This role is of paramount importance for poverty reduction by making small holding farmers food deficient areas become food secure and reducing food dependency of the farmers.

Spice crops already widely traded internationally have a high potential for expansion and diversification of export earnings of Ethiopia. Thus it fits well into the export strategy of Ethiopia.

### **1.1. Beneficiaries, Importance and Anticipated outputs**

Agriculture in Ethiopia is the foundation of the country's economy, accounting for about half of gross domestic product (GDP), about 80% of exports, and 85% of total employment.

Many economic activities depend on agriculture, including marketing, processing, and export of agricultural products and the fact is that agriculture remains to be the country's most promising resource base.

In general, production is overwhelmingly of a subsistence nature, and a large part of commodity exports is provided by the small agricultural cash-crop sector. There is a minimal participation of private investors in modern commercial spice production. Small holder farmers are therefore expected to be the main beneficiaries because they carry out the production of spices largely as mixed production with other food and/or cash crops.

The government of Ethiopia is promoting agro-industrial projects and has declared Spices a focus area for development. The government is aware that presently the bulk of Ethiopian spices are not of export quality due to lack of good agricultural practices, adequate post-harvest handling and primary processing facilities and skills.

The recently launched Growth and Transformation Plan (GTP) gives due emphasis to agriculture under the aegis of an Agricultural Development Led Industrialization (ADLI).

Anticipated outputs:

If Ethiopia could improve the quality of the supply chain, it could easily double its “surplus” volumes of ginger, chilis and turmeric and grow its exports by USD 20-USD 50 million within 5 years.

The committee anticipates the following outputs to result from the strategy:

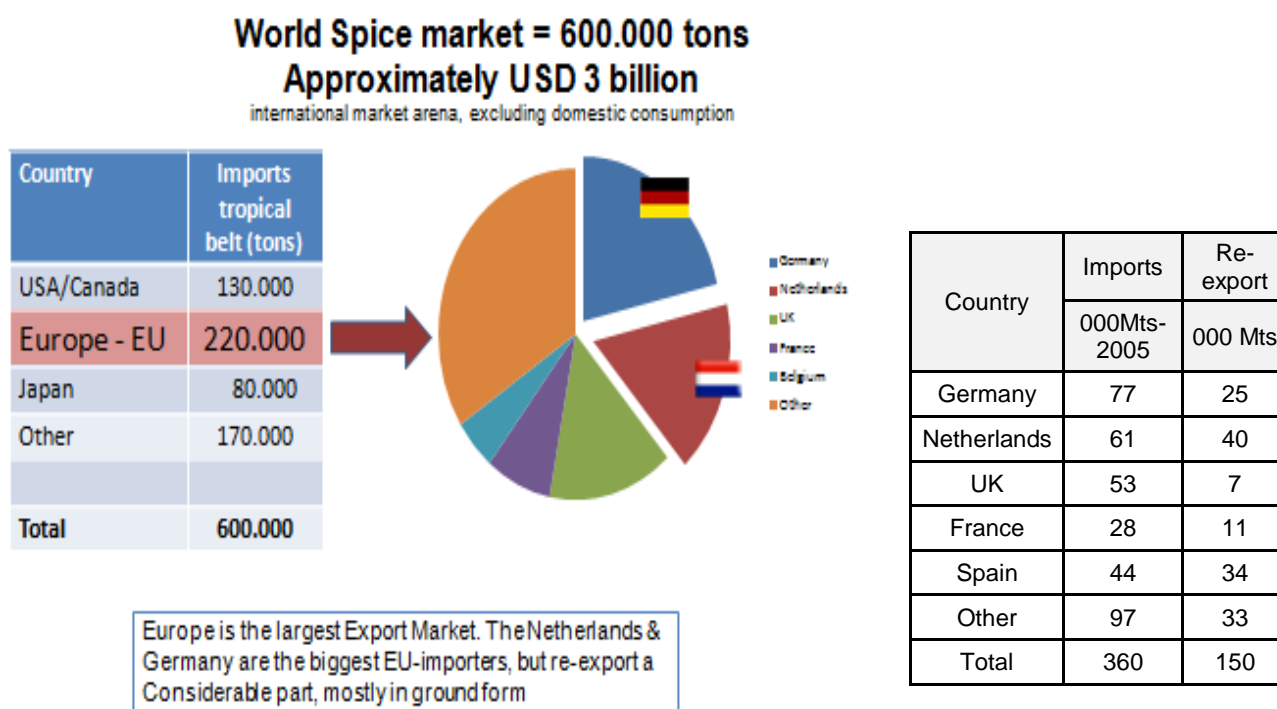
1. Yield will improve 20%
2. Volume loss will be reduced by 20%
3. (jointly this factor alone will boost volume output > 30% on the same acreage)
4. Quality will increase with 20% thereby addressing new clients in EU/USA markets
5. Spice Export volumes will double to 30.000 tons by 2015 (not counting paprika-extract exports)
6. Spice Export earnings will reach US\$50.000.000 + at expected world market prices

## 2. The current spice sector situation from Global to Regional

### 2.1. Brief description of the Spice sector from a global perspective

World production of spices is estimated at 2.000.000 Mts. The majority of this volume is consumed locally. India being one of the largest producers (800.000 Mts), has at the same time a history of spicy food; it exports less than 25% of its production. Indonesia, with a production of 400.000 Mts, exports also only 25%. Vietnam is a typical example of an export-crop society, where pepper is grown primarily for export. Total volume of spices exported in the world is estimated at 600.000 Mts. Black and white pepper account for nearly one-third of the spices and of which 100.000 Mts is exported from Vietnam alone ! The EU is a major importer of tropical spices with an annual volume of 220.000 Mts. North America imports 130.000 Mts. Almost all countries of the world import spices to complete the spectrum of local available spices and herbs.

**Figure No. 1. World spice market**



Source: Imports: Eurostat 2006, CBI market information database

\*source (table): Imports Eurostat 2006, re-exports CBI Market information database

From a global perspective, the spice value chain includes the following actors:

Farmers and Collectors in origin: grow, harvest, collect, dry, clean and select. Pack the spice usually in gunny bags. Many now have installed sterilization equipment (mostly steam) and sell HT-spices even in big bags

Input providers: seeds, fertilizer, packaging, transport

Agent/Brokers: act as an intermediate between collectors and European clients. Do back-to-back deals for an indent (=fee) which ranges between 1% and 5%.

Traders: operate as principal, taking possession of the product

Grinders: Nedspice moved pepper grinding to origin-Vietnam. Olam followed. McCormick established AVT-McCormick in India. Most UK grinders have stopped. In the Netherlands there are Intertaste, Euroma and Handelsveem still actively grinding. Germany has Fuchs, Gewürzmüller. SFK grinds in Denmark. Belgium has Caldic, France Ducros. The USA has McCormick as the biggest grinder and spice processor. Grinders sell to producers of blends: the food processing industry.

Food processors & Packers: producers of retail packaging buy both whole spice and ground. Some large Food processors still grind themselves (eg Hela-G, Verstegen-NL), most buy ground or even buy blends. There is a trend to sub-contract or outsource the “spice room” to professional blenders like Huijbrechts, Euroma, Intertaste, McCormick-UK, and Saveur-F

TRENDS: An increasing number of spice users/processors choose to buy directly from origin, both whole and ground spice. Communication today is easier, quality control is stricter and pricing has become more transparent. The role of traders diminishes, while clients no longer wish to solely depend on the “spot” market.

The leading spices consumed in the EU are capsicums = paprika/chilis (110+ Mts) and pepper (nearly 60 Mts). Leading herbs include thyme and oregano. Pepper and mustard seed are used in most savory products and sauces, while mint eg. is used strongly in confectionery.

**Table No. 2. EU spices & herbs consumption: 310.000 Mts**

Spice	Consumption 000Mts-2004	Supply from Tropical belt	Leading processor/supplier in 2005
Capsicums	113	62	Hungary 74K Mts, Spain 10K Mts, South-America
Pepper	58	58	Vietnam-40%, Brasil-19%, Indonesia-15%, India-14%
Ginger	26	30	China-55%, Brasil-13%, Thailand-10%, India-9%
Cinnamon	10	13	Indonesia-45%, Sri Lanka-25%, Brazil-11%
Nutmeg/mace	8	8	Indonesia-80%, Grenada-15%, India-5%
Cloves	2	2	Comoros-40%, Madag-23%, Bras-17%, Indon-10%
Vanilla	2	1	Madagascar-64%, Comoros-11%, Indonesia-6%
Other Spice	53	41	
Other herbs	38	5	Austria and Czech produce 17K Mts
<b>Total</b>	<b>310</b>	<b>220</b>	

Source: FAOSTAT 2007(consumption), Eurostat 2006 (supply)

The consumption of spices and herbs can be divided into three end-user segments:

- The industrial sector (55%), where the meat industry is by far the largest user of a wide range of spices but specifically pepper and capsicums. Food processing Industry includes also fish, canned products (eg soups), sauces, dry soups/sauces, bakery products, chilled and frozen ready meals and snacks (fingerfood, crisps). Non-food industries such as pharma and cosmetics use low volumes of spices. Specialist spice-mixing companies such as Intertaste, Euroma, Huijbrechts, Raps etc. increasingly assist the meat and bakery industry by supplying ready-to-use spice blends.
- The retail sector (35%) where whole, ground and blended spice is packed in 50 gr – 1 kg containers and bought by consumers in supermarket outlets for home cooking. Quality standards in retail are very high and require a full control over the supply chain
- The catering sector (10%), where ground and blended spice in 1 ltr containers is used for preparing out-of-home meals

**Table No. 3. Examples of companies processing capsicums and ginger per end-user segment**

<b>Portfolio</b>	<b>Industrial (55%)</b>	<b>Retail Packers (35%)</b>	<b>Catering (10%)</b>
<b>Whole &amp; broken chillies</b>	Grinders: RSabater, Pimurcia, Fuchs, Euroma, Intertaste, Ducros/McCormick (ginger, turmeric, garlic is usually ground in origin)	Kotanyi (AU), Drogheria (IT), Isfi (B), McCormick (F), Fuchs (DE), Prymat (PL), Flavori (B), Santa Maria (S), Canamela (IT)	Packers of 1 liter flacons
<b>Ground: Capsicums, ginger, turmeric</b>	Meat & sauce/meal processors, Unilever, Kraft, Nestle, Raps, Hela, v Hees, Kerry	Same end users	Packers of 1 liter flacons
<b>Blends</b>	Smaller Food processors who closed their "spice room"	Make special (local) blends themselves	No

**Requirements of the Spices and Herbs market in the European Union (EU) and the USA**

Specifications: Must be in line with the ESA format, must contain Analysis figures provided by a qualified lab and applying ESA/ASTA-certified procedures.

Maxima: No salmonella  
 Aflatoxin (B1 < 5 ppb, total < 10 ppb)  
 Sulphite (all origins) < 150 ppm  
 Moisture (<12 %) and Aw: < 0.60  
 Essential oil content min. 1.5% for ginger  
 Ash (<8%) and sand content (< 2%).  
 Ochratoxine < 30 ppb

Logistics: Bags of 25 kg max, PP with inner lining, properly labeled  
 Containers must have no underweight, be clean and dry, paper covering on walls and ceiling  
 Preferably CFR-mainport EU/USA (Incoterms 2000), alternatively FOB

Reliability: Adhere to agreed delivery times, max 2 weeks overdue. Avoid defaults  
 Goods identical to earlier delivered sample

## 2.2. The spice sector from a meso perspective: Africa & Middle East

African countries are known for spicing their food. Spice cultivation is mainly aimed at catering to local markets. While the harvested crop is in optimal condition at the moment of harvesting, post-harvest handling of spice products is often inadequate. Grading is done only visually. Bagging is of low quality (already used PP bags or gunny material “sown” together). Intermediary storage is often in unclean sheds, sometimes next to farm chemicals. The product is further damaged by transport on donkey back or horse carts over bumpy roads. For imports, African countries procure from the “spice hub” Dubai, where exotic spices such as pepper or nutmeg are sourced.

Most African spices are sold to the Middle East, India and China. Partly this has to do with the special organoleptical characteristics of eg African ginger (pungent), partly because African ginger and turmeric contain more VO and are therefore interesting for oleoresin extractors in India. Reason why exports from Africa to the EU/USA/Japan are limited is because traceability is poor, CoA<sup>2</sup> incomplete, defaults are common and all that does not comply with the needs of food processors in the EU/USA.

TRENDS: Egypt has developed into a major producer and exporter of dried herbs, also Maroc is increasing its dried herbs exports. Zimbabwe, Mozambique and Tanzania are known for their sesame and ginger. African ginger is especially liked by Indian oleoresin extractors for its high VO content. Contact between countries is improving, so traders can take advantage of the spread in harvest time. Sesame from Tanzania starts as of April, Mozambique comes in May, and Ethiopia follows in June, etc.

### Requirements of the Spices and Herbs market in the Middle East, India and China

Even though India and China are net exporters of spices, the internal consumption is such, that imports are necessary of eg turmeric (India) and ginger. The “African” ginger of Ethiopia (“Nigeria type”), is liked by Indian oleoresin extraction companies because of its higher VO content (8%) than eg Chinese ginger (VO=6%). For the same reason, Ethiopian turmeric with 4% VO, is liked by extractors over the local madras variety (VO=2%).

Ethiopia has developed into a supplier of these cash crops to North Africa, India, the Middle East, Turkey and even China. At the same time, Ethiopia imports spices that do not grow internally, such as pepper, nutmeg and cloves. The port of Dubai is serving as the major hub for spice trade in the Middle East.

## 2.3. The spice sector in Ethiopia

### 2.3.1. Types of spices grown in Ethiopia

In descending order, most grown spices in Ethiopia are:

- Chilli pepper, in Ethiopia usually referred to as “pepper”. The most commonly grown type is the Marekofana variety, a pungent (50.000+ SHU<sup>3</sup>) long chilli of dark red appearance. Also grown is the small Mitmita chili, an even hotter fiery red small pepper.
- Ginger, the local variety is fibrous and more pungent (VO<sup>4</sup> = 8%) than Asian ginger (VO = 6%)
- Turmeric, the local variety has a curcumine content of 4%, which is superior to madras (2%), but lower than allepey (6%). Its colour is in-between of the bright yellow madras (cooked on the farm) and the allepey variety, which like Ethiopian is uncooked.
- Cumin (black), this is exported to middle east countries as well as to Indonesia
- Korerima is a milder spice native to Ethiopia, where it is found growing in southern rain forests

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<sup>2</sup> CoA = Certificate of Analysis

<sup>3</sup> SHU = Scoville Heat Unit, a measure used to indicate pungency. Sweet paprika typically has a pungency SHU < 500, most common for western food processors is a pungency of SHU = 10.000

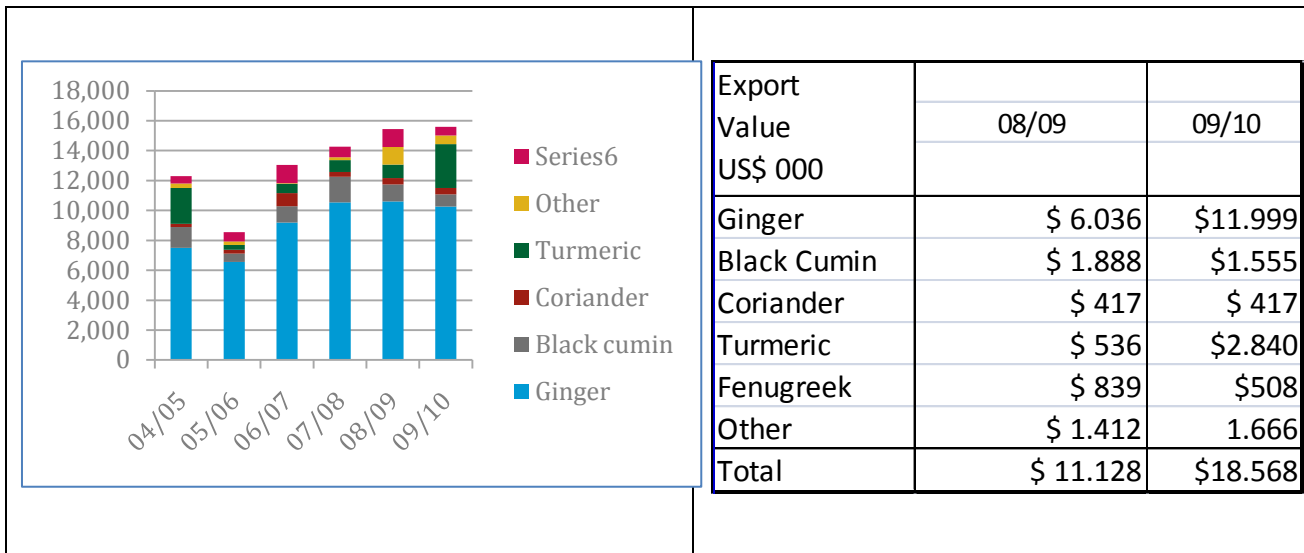
<sup>4</sup> VO = Volatile Oil

- Ethiopian cardamom and coriander
- Sweet Paprika pepper: has been cultivated in the past for supply to the extraction factory. There is no local market for sweet paprika pepper. But the climate and soil conditions are suitable. Today some large agricultural operations have started to grow paprika as an intercrop. Africa juice eg. Intercrops paprika with their main business passion fruit.

Ethiopian cuisine is known for the berbere spice seasonings, a blend of red chili, ginger, coriander, salt, cardamom seeds, fenugreek seeds, black pepper, cinnamon, turmeric and garlic. The paste form is called Berbere Awaze.

### 2.3.2. Exports of Ethiopian Spice

Exports in 2009/10 (ET calendar 2003) were at the same level as in 2008/09: slightly above 15.000 Mts. Ginger being a typical “cash crop” is the largest exported spice. The black cumin comes in second in contribution, followed by turmeric and coriander (dated to the Western calendar). In value however, sales in 2009/10 jumped 50% to US\$ 18,5 mio! This is entirely the result of growing ginger prices - see the table. Ginger contributes 65% to the spice export value!



Industrialized agriculture focuses on export; spice are only a by-product today

Since 1995, Ethiopia has seen strong investments from international partners in agro industry: coffee, oilseeds, flowers, vegetables and fruit. These companies exploit large acreages, often covered by plastic and equipped with drip irrigation. They employ local workers. Production is fully aimed at export. Some of these companies have started to include “outside farms”, contracting small farmers in the region but implying strict rules as to quality. Usually both packaging and transport is provided. Examples:

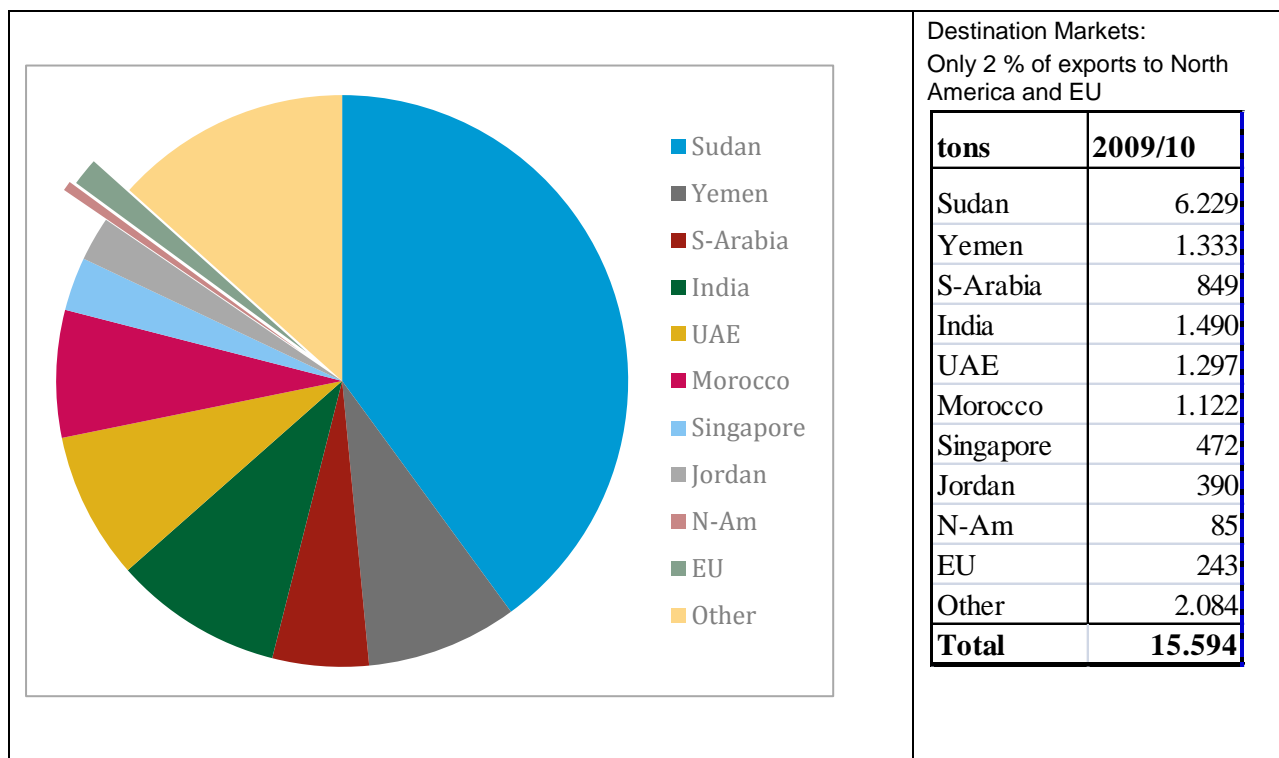
EWE flowers

Africa JUICE Tibila s.c., 14% state owned, who has started paprika queen as intercrop

### 2.3.3. Ethiopian Spice export by country of destination

Looking at the export of spices by destination, in 2009/10, Sudan is the leading importer of spices from Ethiopia (with a 38.4% share of value of total spices export from Ethiopia), followed by India (10.4%), and Yemen (8.6%). Other important importers of spices from Ethiopia are: UAE (8.3%), Saudi Arabia (6.7%), Morocco (5.8%), while Singapore and Jordan has a share of 3.2% and 3.1% respectively.

**Figure No. 2. Export of spices: 2009-2010**

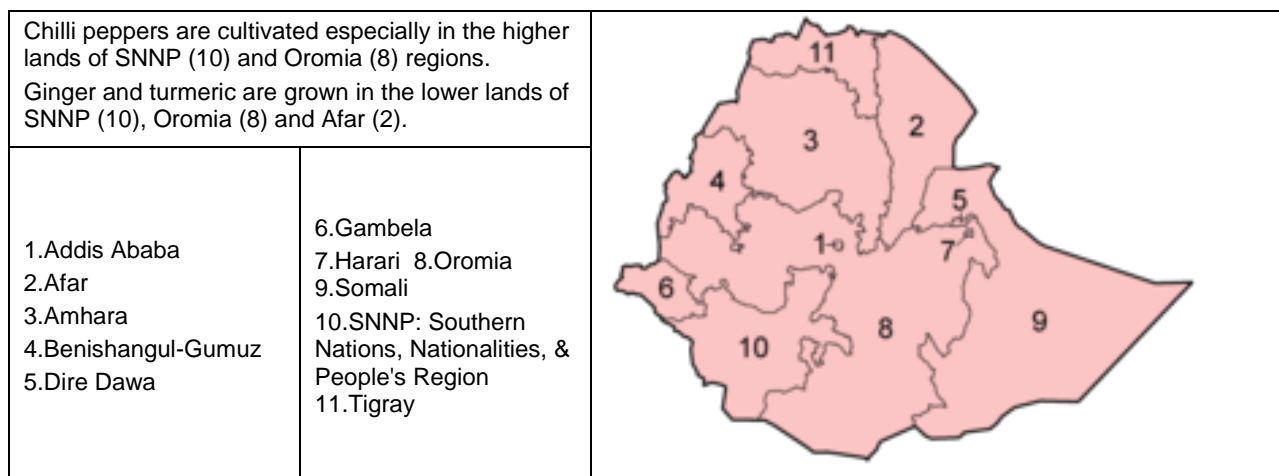


### 2.3.4. Agro-ecological mapping of spice cultivation in Ethiopia

The cultivation and processing in Ethiopia is traditional, in the sense that:

- seed is used from the own crop, both for peppers and for ginger
- rotation of the fields is poor

**Figure No. 3. Grown spices and their regions**



### 2.3.5. Harvest period and Processing at the farm level

Chili peppers are typically rotated with maize, whereby maize is primarily grown for home consumption. Chili peppers are planted in April/May, when the rainy season starts; harvest is from October to February.

In Woreda, with 12.000 has, chili yield is 1.300 kg/ha, but irrigated it grows to 2.200 kg/ha.

Paprika can be grown as a complementary crop in the dry period if irrigation is available.

Ginger is planted in May and June and is harvested from December to February.

Turmeric harvest starts as of November.

Black cumin and coriander harvest is from November-January.

Fenugreek and cardamom harvest starts as of October

Identified problems:

- drying at the farm level is improper: on the road, in the dust rather than on concrete floors;
- drying is insufficient: crops should be dried down to 12%, but most volume is shipped at 30%+ moisture which enhances mould growth during transport and storage;
- post-harvest handling of the product is inadequate: poor and re-used packaging, storage in unclean sheds and next to chemicals, much up- and offloading, bumpy transport;
- trading/selling is done in open markets where the material is placed on bare soil or on plastic undercovers on which people and animals freely walk;
- grading is done only visually.

### 2.3.6. Current segments and distribution channels (domestic and exports)

Purchasing at the farmers level is done by traders. They either buy for their own account or they are liased to large processors in Addis Ababa or Nazareth. There is hardly any direct contact between processors and farmers within the traditional supply chain. For ginger and turmeric, the supply chain is short. As these are primarily cultivated for export, they pass only few hands to reach the exporting company. Players like YSO, Haile and Negash export a variety of crops like sesame, nigerseed, chick peas, but also include ginger, black cumin and turmeric. They grade incoming volumes into:

**A-export quality; B-export quality; C-domestic resale; D-rejects**

Often the volumes to be exported must still be dried down to 10% moisture; this is usually done in the open. C-grade and D-grade find its way to the Ethiopian consumer at eg the Mercato market.

### 2.3.7. Overall Issues in the Ethiopian spice sector

**Major constraints in the spices production and marketing in Ethiopia**

The major constraints facing the spices sub sector of Ethiopia cover pre production, production, processing and marketing stages.

**Pre and Production Stage:**

- Low yield varieties in use, and lack of High Yielding Varieties (HYV);
- Need for improved spice agricultural research in existing and new and locally adaptable varieties that offer opportunities for increased yield, and meet home and export market demands;
- Poor quality of final output marketed;
- Weak role of private commercial investors in spices production;
- Irregular supply and variable quality of spices produced from forest and agricultural landscape;
- Lack of proper post harvest handling practices, and problems of the marketing system in use resulting in significant post harvest wastage/spillage and product quality deterioration;
- Weak business linkage among stakeholders in the chain including farmers, traders, processors and meso level support institutions and macro level regulatory and enforcement institutions;
- Lack of use of appropriate modern technologies in farm management, drying, storage, etc;
- Lack of appropriate spices development strategic interventions

Pre-harvest issues in chillies are various: Local seeds are used over and over again. This, combined with large variation in soil conditions, result in very heterogenous values of pungency and colour!

The low seed quality also results in poor yield. Additionally, drought kills seedlings



**Properties of Marekofana vary by region**

This variety is named after "Ato Fana", the farmer agronomist who worked for the Ethiopian Extraction Factory in 1980 and promoted this higher yielding variety


Origin	Pungency (SH U)	COLOR ASTA
ALABA	10354	146.3
BIRSHELEHO	9473	192.7
MARACO	6700	129.5
TSDELA	8569	157.2
AGARFA	18838	151.2

Export requires homogeneity in quality and specifications

**Marketing Stage:**

- Keeping spices in store for long in expectation of higher prices;
- Adulteration of inferior varieties with better ones for marketing;
- Poor quality of spices traded due to highly traditional pre- and post harvest handling practices;
- Adding water to increase weight and also colour/appearance;
- increasing role and importance of unlicensed brokers in the trading of spices in the market;
- Weak marketing system not stimulating production and marketing based on enforceable quality standards;
- lack of value addition in terms of major agro processing activities in spices;
- weak organizational capacity of cooperatives/unions;
- Price volatility due to changes in demand and supply in local and overseas markets;
- Lack of organized market information service to the different actors in the spices farm-to-market chain;
- Weak market research and promotion in potential overseas markets for natural and processed spices products.

**Post-harvest Quality deteriorates because:**

	<ul style="list-style-type: none"> <li>• Insufficient drying of crop (must be down to 12%)</li> <li>• Bumpy transport</li> <li>• Poor storage</li> <li>• Bulk up- and off-loading AND</li> <li>• Adulteration by adding water, dust, extra seed</li> </ul>
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**Post-harvest Quality deterioration by spice :**

**Ginger:** drying whole ginger is slow and leads to quality losses. Sliced ginger dries within 1 week and has lower salmonella risk. Transporting ginger with high moisture results in high moulds

**Turmeric :** boiled at the farm gives a nicer product. Polished fingers yield a better price.

The Ethiopian chili today enters a grinding stage with 25%+ moisture and practically the whole crop is processed into a local blend. It is unsuitable for export. Yield remains < 1.000 kg/ha. Only 50% of the harvest reaches Addis as grade A, and does not comply with international quality standards. There even is no surplus volume for export; price at the domestic market is sometimes higher than in export markets.

	
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### **3. Institutional and governmental support available for sector**

#### **3.1. Government Agencies:**

The key government ministries and agencies concerned with the provision of the requisite policy, strategy, regulatory functions and key support services for the spice and related crops are Ministry of Agriculture, Ministry of Industry, Ministry of Trade, Ethiopian Institute of Agriculture, Ethiopian Cooperative Agencies and their respective offices at Regional, Zonal and Wereda levels.

The MoA is a key ministry mainly responsible for the production of the crop by providing the relevant policy and strategy inputs to related crops and spices. In addition, the MoA and its respective offices at all levels provide a generic and specialized extension service for small holder farmers on pre and post harvest agronomic practices.

Extension is one of the key services required by all categories of value chain players in the spice sub-sector and needs to be strengthened in order to continuously educate farmers to utilize specific, innovative and sustainable farming methods and approaches.

Ministry of Industry was reestablished as a new ministry, separated from Ministry of Trade. The Ministry of Industry will be occupied with promoting the production of the industrial level and the manufacturing of products. The Ministry will thus be in charge of facilitating and creating conducive policy environment in the expansion of agro processing and manufacturing facilities. These are pivotal factors in the transformation of agricultural raw products into producer and consumer goods.

Spice is a crop with ample opportunity for agro processing thereby helping the transformation into a more value added economy. The spice sector will benefit from the policy and strategy directions given by MoI in particular in promoting agro processing and manufacturing capacity in the country.

Ministry of Trade (MoT) was established in October 2010 as new separate Ministry and is concerned in all trade related matters including spices both domestically and internationally.

#### **3.2. Ethiopian Institute of Agriculture Research (EIAR)**

Ethiopian Institute of Agriculture Research (EIAR) is the lead institution involved in generation and dissemination of agricultural technology while working very closely with Ministry of Agriculture.

One of the factors still limiting production of spices in Ethiopia is sub-optimal agronomic practices due to a number of factors, such as inadequate skill training and lack of improved input and technology such as improved seed varieties, fertilizers and pesticides. Current Research programs on spices and their disseminations are inadequate. This is well witnessed by the lack of improved varieties either developed and disseminated within the country or introduced for evaluation and adoption.

EIAR has a key role in addressing this constraint by enhancing the existing research activities and making it more market oriented and pragmatic. Currently EIAR is conducting research pertinent to the spice subsector in some of its specialized and semi specialized research centers, namely Tepi (major spice research centre), Sinana, Jimma (primarily coffee, also some spices), Araca (primarily ginger) Kulumsa, Debrezeit, Melkassa, Bako, Essential Oil, Gondar, Adet, Agricultural Research Centers. It also provides advisory and technical services in partnership with the extension services.

#### **3.3. Ethiopian Commodity Exchange (ECX)**

Agricultural markets in Ethiopia are characterized by high costs and high risks of transacting forcing much of Ethiopia into global isolation. With only one third of output reaching the market, commodity buyers and sellers tended to trade only with those they knew, to avoid the risk of being cheated or default. Trade is done on the basis of visual inspection because there was no assurance of product quality or quantity, this drove up market costs, leading to high consumer prices. For their part, small-scale farmers, who produce 95 percent of Ethiopia's output, came to market with little information and are at the mercy of merchants in the nearest and the only market they know, unable to negotiate better prices or reduce their market risk.

The ECX is a new initiative for Ethiopia. Its operation commenced in April 2008 as the first of its kind in Africa. With the vision to transform the Ethiopian economy into a global commodity market, its revolution of Ethiopia's traditionally-bound agriculture aims in creating a new market that serves all market actors, forming a chain of farmers to traders to processors to exporters to consumers. It aims in connecting all buyers to sellers in an efficient, reliable, and transparent way, by harnessing innovation and technology, and based on continuous learning, fairness, and commitment to excellence.

The ECX assures all commodity market players the security they need in the market by providing a secure and reliable End-to-End system for handling, grading, and storing commodities. The system also provides matching offers and bids for commodity transactions, a risk-free payment and goods delivery system to settle transactions, all in a fair and efficient manner. It creates trust and transparency through the aggressive market data dissemination to all market actors, with clearly defined rules of trading, warehousing, payments, delivery and business conduct, and also an internal dispute settlement mechanism. It provides market integrity of the product, the transaction and the market actors.

### **3.4. Farmers' Organizations**

Farmers' organizations play an important role in the economy of the smallholder farmers. The formal farmer's organizations in Ethiopia are primary cooperative Associations, Cooperative Unions and Cooperative Federation. In 2010 about 26,800 Farmers organizations exists in Ethiopia. These organizations provide the smallholder farmers with the opportunities to access different services in a more cost effective way. A good example is access to credit services where most smallholders are deemed not creditworthy by the financial institutions but are nevertheless able to access credit within the umbrella of their associations.

The farmers' organizations also provide enhanced direct access to markets. In this regard, organizations provide opportunity for bulking of produce thus making it possible to have adequate quantities of good quality produce to attract the market. Besides, the organizations could improve access to storage facilities which is crucial in spreading the supply of farm produce away from periods of glut. This ensures that farmers do not sell their produce at non remunerative prices during periods of surplus to avoid loss due to perishable nature of most agricultural produce.

Efficient farmer groups also acts as catalysts for investment in agro-processing. The associations are able to leverage finances which can be used to establish processing and grading facilities for perishable products this enables smallholder farmers to add value to their produce and attract better returns on their produce.

### **3.5. Some activities initiated by private businesses**

Most of services provision to Spice producing smallholding farmers fall within the remit of the public sector, through the Ministry of Agriculture. However, it is noted that some of the services can be devolved to be more effectively delivered by the private sector players. Extension services for example, could be undertaken by the farmer groups, input suppliers and exporters of the spices. There are unutilized opportunities by leveraging synergies of public sector and private sector to ensure more sustainable solution to the provision of services sought in the spice subsector with the view addressing some of the challenges currently existing in this domain.

The case in point is that the recently initiated capacity building program by Eden Oil Plc, Ethiopian Spice Extraction Factory, Yahia Seid Omer Company and the likes in the training of farmers and investments in postharvest processing facilities closer to the farm sites.

### **3.6. Development Partners and Donors**

There are a number development partners and Donors working in Ethiopia in the areas pertinent to the Private Sector, Agriculture, Trade and Industry in support of promotion and expansion of production and trade of key commodities particularly export commodities. The most important of them among other includes: Bilateral Development Agencies such as USAID, JICA, SNV, GTZ, DFID IDA (Irish Development Agency), CIDA, SIDA, Spanish Millennium Development Fund, French, Italian International Development

Agency and the Embassies and mission offices of most western countries and Regional, Continental and International Agencies notably UN agencies (FAO, UNECA, ITC, UNIDO, UNDP, ILO, IFAD..) and other Agencies and NGO's such as AfDB, World Bank, Care Ethiopia, which are financed by other donors.

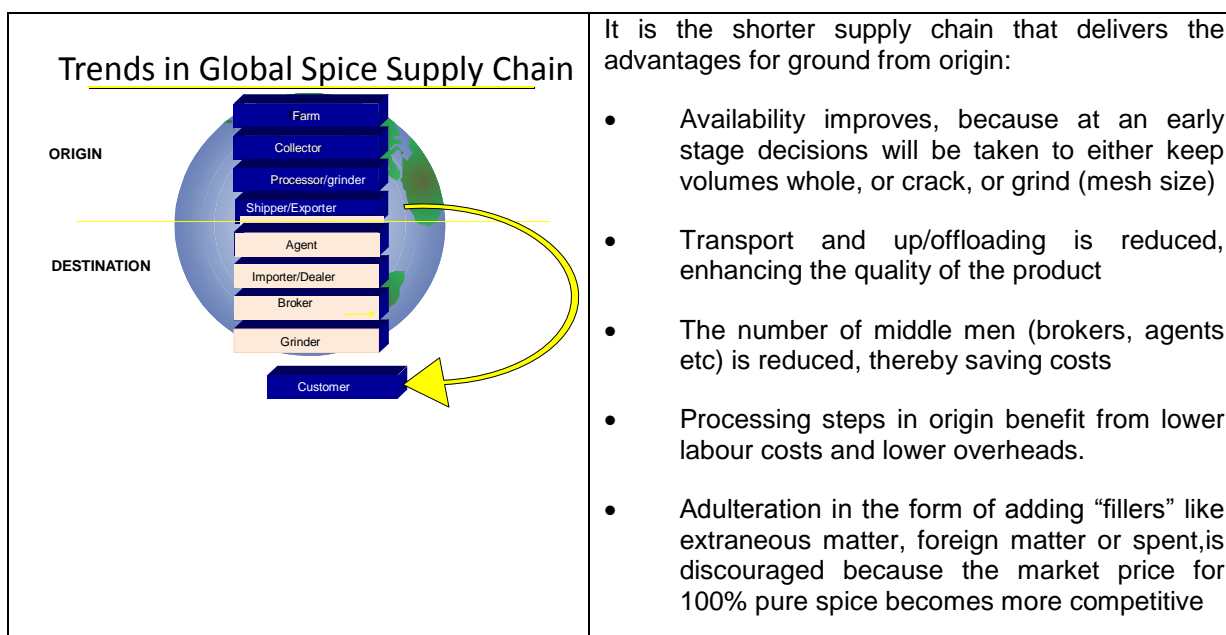
The potential and existing Development agencies and their specific program is also summarized at the bottom of this document. Some of the programs/projects most relevance to spice and related products among other include;

- USAID –Oilseed support under Agricultural
- GTZ-ecbp-Ginger support
- SNV-Oilseed
- PPP of Ethiopian and Dutch project on Oil seeds
- EPOSPEA
- JICA - on value addition and market linkage.
- HABP - Income resource generation of a produce, which could also be spices..(as far as it is selected by the target farmers).
- AGP (Agricultural growth program) - Having a program of extension, development & scaling up of different agricultural products in which spices could also be included as per the choice of the regions, zones & woredas, basically swiched on by the interest of the farmers.
- FAO - can have an attachment/involvement according to a well developed project proposal.

## 4. Value chain dynamics and challenges

### 4.1. Trends & challenges in the global Spice supply chain

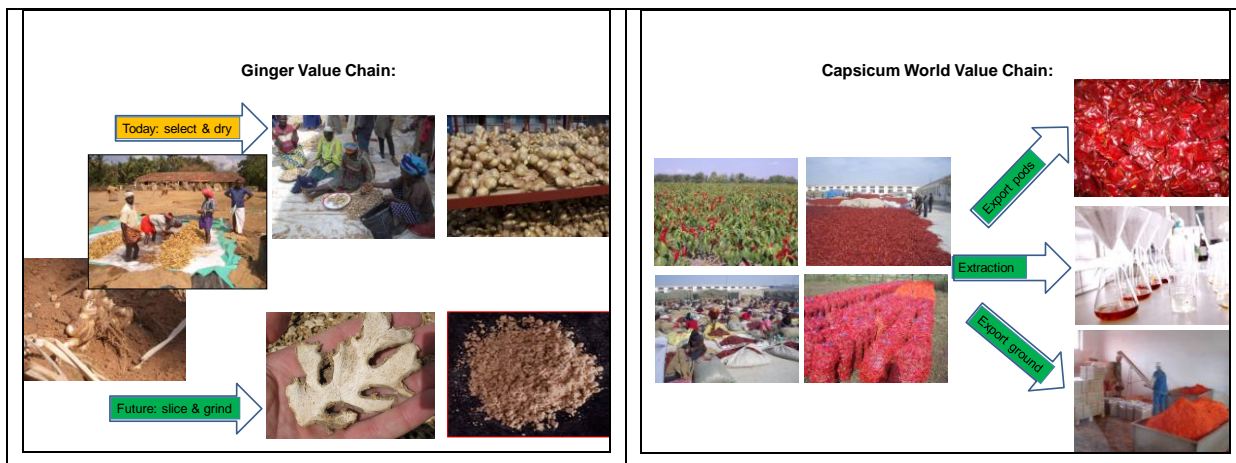
With the upgrading of milling equipment in countries of origin and the stricter procedures followed by suppliers, clients in Western Europe have increased confidence to source ground Spice directly. In chillies, paprika and turmeric, origin grinding is already common for years. At the same time, it are these 3 crops having caused most of the food scandals with adulteration in the last 10 years. The relation between pricing of whole spice and ground spice becomes more transparent, helping clients to understand that one spoonful of pure spice is less costly than 2 spoonfuls of “filled” spice. Today, Spice companies in the destination markets dedicate themselves to developing blends for food industry or packing whole and ground spice in retail- and food service containers. We have already seen grinding stopped in the UK (2006), in Scandinavia (2007), and reduced in France and Germany.



Ethiopia exports her ginger and turmeric in whole form. EU importers prefer ginger to come in sliced<sup>5</sup>.

Turmeric is offered whole to India for both grinding and for extraction. Also Far East markets buy whole. EU/USA buy predominantly ground turmeric. Paprika & chillies are presently hardly exported by Ethiopia, but should that be the case in the future, than whole or broken form is preferred by EU/USA importers.

<sup>5</sup> Sliced ginger dries quicker (within a week) thereby preventing mould growth and enhancing (export) quality



For Capsicums (chilli peppers belong to that category), end-users require blends which are specific in colour and heat. Colour is measured in ASTA: 60 for brown, 120 for bright red. Another measure is IC = international colour units, whereby 100.000 IC = 100 ASTA. Heat is measured in SHU-Scoville Heat Units: 10.000 for mild, 120.000 for very hot. It requires proficient blending of different varieties and origins and that can only be done by specialized grinders. Most expertise can be found in Spain – Murcia, where paprika and chillies are imported in broken form from China/Peru/Hungary/Africa and then ground and blended into the right heat & colour.

Scandals with illegal dyes in chillies and turmeric mainly from India, but also from China, have resulted in stricter controls at the EU border of these ground materials. This New EU ruling 669/2009 dictates that from Jan-2010 for high risk-products a control at the port of EU-entry is obligatory:

- Aflatoxine testing on 50% of shipments with nutmeg-ginger-turmeric-capsicums from India
- Sudan dye testing on 20% of shipments with capsicum-turmeric-curry from all origins.

## 4.2. Supply Chain of Spices in Ethiopia

The spices market chain of activities involves production, collection, drying, storage, processing, transporting, and marketing and selling activities.

**The principal actors/participants in the spices market in Ethiopia involves (see figure 1):**

- The small holder farm households /the predominant production system for spices in Ethiopia/, and also their cooperatives/unions, and limited emerging cases of commercial farming, selling to local and regional traders in the nearest towns. They sell the spices in a wet/fresh stage (in most cases), or after drying, depending upon their cash need, interest and experience in spice drying processes. And marginally cooperatives/unions,
- small to big Local Collectors and regional traders (buyers) /including small local shops in growing areas, engaged in purchasing and bulking from farmers and their cooperatives/unions/. They sell their spices purchases to local wholesalers after making a sort of processing (drying), and also sell directly to consumers
- the Local traders/buyers in turn may do further drying of the spices, do bulking operation till it reaches the level to be transported using trucks, 50-90 quintals (1quintal=100kg or 0.1ton) and above, to transport and selling to traders in central/terminal markets in major urban areas,
- there are national level wholesales of spices in terminal markets, who do further bulking mainly from regional traders/buyers and mainly engage in selling to processors /that ground, mix with other spices/, exporters, or other local wholesalers and retailers, including to those regions that do not grow or do not have adequate supply of spices,

- millers: village and spice market center milling houses who, for instance, do pepper milling for customers or do own milling and sell the flour to different traders, and consumers,
- micro and small and medium /SME/ spice processors:
- table spice producers and traders, such as Selam , Etsub, Abyssinia, Abeba, etc ..., and also the ESEF who cater to households and also institutional consumers/buyers (such as hotels, hospitals, educational institutions, military camps, ...); and
- the fast increasing number of micro and SME spice processing, packing and retailing businesses in major urban centers, mainly catering to households.
- cleaning and processing facilities,
- spices factor(ies), Ethiopian Spices Extraction Factory (engaged in oleoresin extraction and export, and also pepper flour production and selling to consumers), and
- Retail chain: supermarkets, retail village shops, etc.
- Exporters who buy from regional traders/buyers, and also from wholesalers in terminal markets. The exporters are not as such specialized in export of spices alone, and are also engaged in export of such commodities, as pulses and oil crops.
- Consumers:
- Household consumers /significant majority of who buy in smaller volumes, and above, and --- large are the households with few percentage shared with table spices processors and traders, such as Selam , Etsub, Abyssinia, Abeba, ESEF and numerous micro to SME spices processing and retailing businesses in urban areas, ...
- Institutional consumers, such as hotels, restaurants, military camps, academic institutions, hospitals, ....., who are known to buy large volume of spices mainly pepper (including other spices used for pepper milling) and others for consumption need of large number of employees in camps, students, inpatients
- There are also brokers involved at different stages in the supply chain during the purchase and selling processes from farm to terminal markets.
- Besides, brokers and commission agents are also involved in the market channel of spices purchase and selling in Ethiopia.



### 4.3. Value chain mapping specific to Ethiopian chillies

Chilli peppers are by far the largest spice grown in Ethiopia and it finds its way for 95% to the national market. Farmers grow it as a cash crop, usually alternating with maize. The red pods, once harvested, change many hands. The chilli peppers value chain starts at the farmgate. Farmers dry the pods in the open. Usually back to 25-30% moisture. Farmers then group their harvest (after drying) and offer the volume to traders. From there we see a series of uploads and offloads with intermediate storage, until the prime material reaches the intermediate market of Alaba or the final market of Mercato in Addis. In Mercato the pods are either bought by consumers (home grinding) or by sellers of ground material. Then it is de-seeded and de-stemmed, hand picked selected, mixed with 15 or more spice ingredients, crushed & ground by contract grinders and finally packed to pass into the hands of the final consumer who will use his/her favourite berebere blend for homecooking:

Spice processing plant in Koshe:

With support of Irish Aid, a small facility has been established in Koshe, in the middle of the pepper growing area. Spices are de-stemmed in a clean facility, recipes made, crushed and ground in a separate space and packed for retail. Similar to the structure above, moisture content is 25%+. But much less off- and uploading; better storage, organized and hygienic processing and packing.

**Table No. 4. Value chain of chilli pepper for local use in Ethiopia – Price by Sept 2010**

Level	Main issues affecting this level	Selling Price Chilli
<b>Farmer</b>	After harvest, drying down to 30%. Volumes are grouped by farmers, sold alongside the road	25 Bir/kg
<b>Buyer at the farmgate</b>	Buys in the village/collects alongside the road. Stores at low conditions, sells when price is to his liking. Quality loss during transport and storage	28 Bir/kg
<b>Buyer/seller at Alaba market</b>	Buys per bag, material is unloaded & uploaded. Quality loss during transport to the city	32 Bir/kg
<b>Buyer/seller at Mercato</b>	The Mercato buyer de-stems, , hand pick selects <sup>6</sup> and makes a recipe and has that ground.	35 Bir/kg
<b>Processing<sup>7</sup></b>	De-stemming, deseeds <sup>8</sup> , rejection: material loss De-stemming by women in the street who charge Crushing grinding by dedicated grinders who know the clients requirements	20-30% B 12/17 kg B 1/kg
<b>Buyer/seller of ground blend</b>	This person buys the blend, has it packed (at home or by 3 <sup>rd</sup> party and sells a blend	
<b>Exporters</b>		

<sup>6</sup> Hand pick selection into eg. A grade (B 30/kg), B grade (B 28/kg) and rejects (B 10/kg).

<sup>7</sup> Adulteration: can take place at the grinding stage. Mixing A and B grades eg, adding seeds or worse, adding ground red brick. There is no quality control so consumers relate to the reputation of blenders.

<sup>8</sup> The seeds are sold again to farmers at prices of B 25/kg

#### 4.4. Value chain specific for chili oleoresin

The Ethiopian Spice Extraction Factory (ESEF) and chillies:

The ESEF is designed to process oleoresins for export. Also ground spice is provided to the export market. In order to meet the international requirements, the following additional steps are necessary:

- Chillies are de-stemmed (3% of volume) and selected into export quality and rejects (which are resold locally). Rejects vary from 20% in the harvest season to 50% in the low season
- Then the 25% moisture chillies are dried down to 10% moisture (!)
- The pods are crushed and deseeded, losing another 25% of weight
- The dried deseeded and crushed material is then ground and ready for export; out of 100 kg of fresh material, only 60 kg of export quality grind can be retrieved.
- And these 60 kg of grind give 3 kg of oleoresin (remember: VO = 6%)

As the plant manager says it: “we require 27 kg of purchased chili, to retrieve 1 kg of oleoresin”

At an exchange rate of ETB 100 = USD 8, the process is hardly profitable for chillies.

**Table No. 5. Value chain of capsicum oleoresin**

Level	Main issues affecting this level	Weight	Price / KG FEB-2011	
<b>Input</b>	100 kg of 30% moisture chillies from Alaba market at a price of ETB 30	100 kg	ETB 32 (USD 2)	
<b>Preparing</b>	Destemming and deseeding, drying down to 10% moisture	60 kg		
<b>Processing</b>	Grinding, then extracting,	3,5 kg	30\$ US	
<b>Desolventing</b>	The remains are dried and sold as animal feed at a price of 5 B/kg	30 kg	ETB 1.50	

To increase output of 1st quality capsicums, it might be considered to raise seedlings by horticulture companies like Florensis and Ethiopian World Flowers. Also programs where so called “outgrowers” are placed on a strict regimen of Agricultural Practices, are successful in Ethiopia.

It is obvious that for paprika, with a VO=12% content, the factory results would improve considerably.

Paprika is not consumed in Ethiopia, so its production should be done purely for the extraction factory. Farmers who have done this in the past felt very dependent on the factory, especially in times of falling world market prices of paprika powder and paprika oleoresins. There are initiatives to grow paprika on an industrial scale. Productivity is currently at 1.200-1,500 kg/Ha but should ideally reach 3.000-4.000/ha. The factory has an input capacity of 15Mt of 10% moisture paprika.

Quality of inputs for the oleoresin factory is measured in ic = international colour units, whereby 100.000 ic = 100 Asta.

#### 4.5. Value chain mapping specific for Ethiopian Ginger/Turmeric

Ginger is the biggest export-spice of Ethiopia, reaching 9.000 Mts in 2009 (of a total export of 15 Mts). Ethiopian ginger (African ginger) is more pungent than eg Chinese or Indian ginger. It also is rather fibrous. It is liked by extracting companies because of its high oil content (VO = 8 % China VO = 6%).

Issue in the value chain is the way of washing (away the dirt/soil) and drying by local farmers. Often the exporting company has to do additional drying, down to 10%. To reach export quality (i.e. to keep mould levels such as aflatoxine, to a minimum), it is advisable to speed up the drying process. This can be done by slicing the ginger, so it can dry down under a shed in the open within 7 days. Drying whole ginger requires several weeks.

**Table No. 6. Value chain of ginger in Ethiopia**

Level	Main issues affecting this level	Selling Price national	Export price (FOB)
<b>Farmer</b>	After harvesting, ginger is dried down on the farm from 80% to 20% of moisture. Volumes are grouped by farmers, sold alongside the road	55 Bir/kg	
<b>Buyer at the farmgate</b>	Is often contracted by an exporter of Addis Ababa. Negotiates a price and transports to processing	65 Bir/kg	
<b>Selection in Addis/Nazareth</b>	Hand pick select into export grade A-70%, export grade B-20%, for local market, waste 10%	66 Bir/kg	
<b>Processing</b>	A and B qualities are sundried down to moisture 10%, then packed in 50 kg PP bags	86 Bir/kg	
<b>Logistics</b>	Cargo is trucked to Djibouti (2 days), then uploaded in 40 foot containers (24 Mts). Ginger is bulky.	4.50Bir/kg	\$ 2.500/Mts
<b>Customer</b>	Grinds the material in ISO-9000 facilities, adds certificates, pack in 20Kg food grade bags and sells "sterile" to spice blenders	50 Bir/kg	\$ 4.000/Mts

Turmeric is growing as an export crop. The Ethiopian turmeric has a higher Volatile Oil content (4%) than the madras type of India (2%), but lower than the Allepey from Indonesia (6%). Farmers are not skilled in the cooking process, which give Indian turmeric the nice yellow colour throughout the whole root. For export mainly the fingers are used; they are separated from the bulb. Some exporters "polish" the fingers, which add to the costs, but also allows for better pricing

**Table No. 7. Value chain of turmeric in Ethiopia**

Level	Main issues affecting this level	Selling Price national	Export price (FOB)
<b>Farmer</b>	After harvest, no cooking. Drying down to 30%. Volumes are grouped and sold to traders	17 Bir/kg	
<b>Buyer at the farmgate</b>	Is often contracted by an exporter of Addis Ababa. Negotiates price and transports to processing	19 Bir/kg	
<b>Selection in Addis/Nazareth</b>	Hand pick select into export grade fingers 70%, export grade bulbs 26% local, waste 4%	22 Bir/kg	\$ 1.200/Mts
<b>Processing</b>	If necessary, export qualities are sundried down to moisture 10%. Fingers are polished to add value, then packed into 50 kg PP bags	42 Fingers: Bir/kg	
<b>Logistics</b>	Cargo is trucked to Djibouti (2 days), then uploaded in 20 foot containers (17/18 Mts).	4.5 Bir/Kg	\$ 1.200/Mts \$ 2.400/Mts
<b>Customer</b>	Heat treats and grinds the material in ISO-9000 facilities, adds certificates, pack in 20Kg food grade bags and sells "sterile" to spice blenders		\$ 3.000/Mts

## 5. The Future for the Spice Sub-Sector

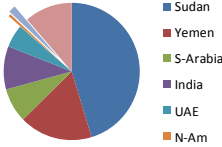
### 5.1. Priority Target Markets

During the participatory workshops sector representatives across the whole value chain analyzed potential and decided that the strategy number one priority would be to develop the export market.

**The selected priority markets for this strategy are:**

Europe, Middle East, East and North Africa and the Far East region.

**Table No. 8. Participants' target market definitions during the Workshop in July, 2010**

Segment / Products		Destination	Consumption markets	Buyers' requirements		Farmer's requirements
Ginger	Dried whole Ginger	95% export		Meet African/Asian/Middle East Requirements	< 12% moisture	Proper drying places
		100% export		Meet EU/ASTA requirements	< 12% moisture aflatoxin < 10 ppb sulphur < 150 ppb	Slicing machines
	Dried sliced Ginger	100% export		Meet EU/ASTA requirements		Extraction Factory
	Oleo-resins	100% export				
Turmeric	Turmeric fingers	95% export		Meet African/Asian/Middle East Requirements	boiled for colour polished fingers	Polishing equipment boiling equipment
Sweet Pepper (paprika)	Pods	No production in 2009	Spain	Meet African/Asian/Middle East Requirements	no salmonella < 5 ppb aflatoxin no illegal dyes	Contract with spice extraction factory
	powder	No production in 2009	Spain	Meet EU/ASTA requirements		Contract with exporter to Spain
	Oleo-resins	No production in 2009	World	Meet EU/ASTA requirements		Flavour houses
Chillie pepper (berbere)	dried	All consumed domestic	80% to local grinders 20% to retail (domestic)	There is a market for every quality level;	preferably < 12%	Grading like in coffee
	powder	All consumed domestic	80% to local blenders 10% to retail (domestic use) 10% to catering		Better color >> higher price pungency in line with local taste	Grinders
	blends	All consumed domestic	80% to retail (domestic) 10% to local industry 10% to catering			Blenders and packers
Black Cumin	dried	50% local consumption 50% exports	Far east			

With an overall emphasis in Value addition (including primary and secondary processing and quality preservation and volume) the priority spices selected were: ginger, capsicum/paprika, turmeric and black cumin

Targeted export volume and revenue generation by 2015:

The coordinating committee has estimated that even at modest world market prices, and omitting extracts (essential oils), export earning of a minimum of 50 million\$ US per year can be secured by 2015. As we can see in the table below, the 50 million\$ US export earnings can be achieved mainly with Ginger, Turmeric and Black Cumin. This implies significant growth in spice export earnings contributions when comparing with the actual 18.5 million\$ US for 2009/10.

**Table No. 9. Targeted export volume and revenue generation by 2015:**

Spice	2009/10		Export achievables by 2015					Value (\$ 000)
	Volume (tons)	Value (\$ 000)	Has planted for export	Yield in fresh kg	yield/ha in kg dry	Volume dry(tons)	Specification	
ginger	10.270	\$11.999	5.000	16.000	4.000	20.000	50% sliced	\$35.000
turmeric	2.932	\$2.840	500	16.000	4.000	2.000	50% sliced	\$3.000
black cumin	801	\$1.555	3.750	800	800	3.000		\$6.000
other	1.591	\$2.174				5.000		\$6.000
<b>Total</b>	<b>15.594</b>	<b>\$18.568</b>				<b>30.000</b>		<b>\$50.000</b>

## 5.2. Main Strategy objectives

After analyzing value chain constraints and potential five strategy objectives were defined by sector stakeholders in a participatory manner that included farmers, government, processors and buyers. The implementation of the objectives will enable the spice sector to achieve the above targets and overcome the main issues in the spice sector value chain.

**The Spice Sector Strategy Objectives are:**

1. Improve pre- and post harvest and processing practices
2. Improve marketing practices
3. Improve capacities/capacity building and access to Finance
4. Improve Quality and standard compliance
5. Improve value chain governance

These objectives are cross cutting throughout the value chain and are not only aimed at the smallholder farmer. In follow-up meetings, the Committee further defined sub objectives as follows:

**Table No. 10. Strategy objectives in detail**

<b>Table No. 11. Priority of Objectives</b>	<b>Table No. 12. Sub Objectives (rephrased by Committee)</b>
Improve pre- and post harvest and processing practices (selected 1 <sup>st</sup> by farmers and exporters)	Improved seeds
	Drying techniques
	Slicing, Treating,
	Storing
	Transporting
	Packaging
	Processing
Improve marketing practices (Selected 2 <sup>nd</sup> by farmers, 3 <sup>rd</sup> by exporters)	Market intelligence
	Market system
	Market research/study
	Market promotion
	Branding
Improve capacities/capacity building and access to Finance (Selected 3 <sup>rd</sup> by farmers, 2 <sup>nd</sup> by traders)	Training farmers, Das, lab staffs , exporters
	Pre harvest
	Post harvest/Processing
	Marketing
	Laboratory
	Support Spice Value Chain Financing
	Assessment of financing constraint of spice value chain
	Undertake consultative meetings between FI and Value Chain Operators

Improve Quality and standard compliance (Selected 4 <sup>th</sup> by all)	Quality Standard Development
	Testing and quality assessment (grading) procedures
	Rehabilitating exiting laboratories and/or establishing new ones
Improve value chain governance (selected 5 <sup>th</sup> by all)	Package/Strategy Development
	Assigning focal persons at relevant levels
	Strengthen EPOSPEA and set up spice subsector subcommittee within EPOSPEA

The coordinating committee also evaluated market potential and past experiences in Ethiopia and decided to add a 6<sup>th</sup> overall market objective which is primarily aimed at producing and selling (sweet) paprika for extraction. In the past several attempts to include smallholder farmer into paprika planting proved unsuccessful and one solution would be to involve large scale commercial farming, whereby output is completely focused on exports: both powders and extracted paprika.

Encourage commercial scale production of paprika	Minimum 5.000 Has of paprika to be planted Involve at least 2 farmers in seed reproduction
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The detailed Implementation plan showing objectives, sub-objectives and activities is shown on the next page.

**Table No. 13. Detailed implementation objectives**

Implementation Plan Spices Ethiopia - Committee targets 2015			Pepper, Ginger, turmeric, black cumin			Costs				
Sub Objective	Activity	Progress indicators achieved by 2015	Resources needed	Priority	2011 ETB	2012 ETB	2013 ETB	2014 ETB	2015 ETB	Total
1. Improve pre- and post harvest and processing practices (selected 1st by farmers and exporters)	Inventorise seed performance for yield, quality, demand	Min 1 improved seed/crop	60 research mandays/yr @ ETB1,500/day	1	90,000	90,000	90,000	90,000	90,000	450,000
	Identify areas for irrigation	Develop min 10 irrigation schemes (within the 25 pocket areas)	ETB 1 mio per scheme	1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
	Select pocket areas for projects	25 pocket areas 100 farmers/area 4 DA per area	150 mandays @ ETB 1,500/day	1	45,000	45,000	45,000	45,000	45,000	225,000
	Encourage reproduction of improved seeds by small scale farmers	100 model farmers specialise	150 reseaches days @ E2000	1	100,000	50,000	50,000	50,000	50,000	300,000
	Promote simple bamboo & covered drying places	Min 50% of produce with moisture < 20%	25 simple demo centres @ E 10,000/centre	1	50,000	50,000	50,000	50,000	50,000	250,000
	Better packaging material	50% of produce in clean PP bags or crates	1,000,000 PP bags @ E7 50,000 plastic crates @ E 1,000	1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
	Farmers bring harvested crop straight to processor	30% of harvested produce directly to processor	3% premium on spice price	1	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	30,000,000
	Encourage research & developm activities to be more market responsive	Establish lab by 2013	E 500,000 for the research centre	1		250,000	250,000			500,000
2. Improve marketing practices (selected 2nd by farmers, 3rd by exporters)	Facilitate spice trade through ECX	Min 50% of spice trade through ECX	100 expert days @ E 2,000	3	0	50,000	150,000	0	0	200,000
	Provide regular & reliable info on volumes & prices to farmers/traders/buyers	Weekly updated info to the 25 pocket areas	30 expert days @ E 2,000 40 PC's @ E 15,000/PC 25 bill boards @ E 1,000	2	150,000	150,000	150,000	150,000	85,000	685,000
	Assess acceptance of ET ginger taste in EU/USA	1 report with improvement measures (if needed)	120 natl expert days @ E2000 60 int experts d @ E 8000	3	0	0	250,000	250,000	240,000	740,000
	Spice Pavillion at ET fair	1 trade fair + 1 spice mission to Ethiopia every other year	E 50,000 per event	2	50,000	0	50,000	0	50,000	150,000
	Take part in international trade fairs & spice missions	1 mission & 1 international ingredients	E 340,000 per exhibition, 15	1	0	580,000	0	580,000	0	1,160,000
	Develop brand profile for ET spices & promote like coffee	Certify at least 1 variety per spice	100 expert days @ 2,000 Brand certifi @E500K Brand reg EU/USA @E1 mio	3	1,440,000	1,440,000	1,440,000	1,440,000	1,440,000	7,200,000
	Selling: Find new clients outside Sudan/Yemen/Dubai: in EU, USA	2 new EU/USA customers per spice per year	Engage 1 national expert (120 days @ E2000) & 1 int expert (60 days @ E8000)	1	350,000	360,000	0	0	0	710,000
	3. Improve capacities/capacity building and access to Finance (selected 3rd by farmers, 2nd by traders)	<b>Training Activities</b>								
Train the 100 Development Assistants (DA's)		100 DA's trained over 15 days in 2011	1500 DA-days @ ETB400 160 Trainer days/Etb2000 Coordination & materials	1	1,120,000	0	0	0	0	1,120,000
Train the farmers in the 25 pocket areas		25*100 = 2,500 farmers trained	25,000 trainee days @E20 125 trainer days @ E2,000 1,000 DA days @ 200 E 50,000 coordination	1	1,200,000	600,000	600,000	600,000	0	3,000,000
Develop syllabi for spice production and marketing		All 25 Farmers Training Centres (FTC) introduce courses	Syllabus/crop E 100,000 Print 25,000 copies @E20	1	900,000	0	0	0	0	900,000
<b>Finance Activities</b>										
Encourage Financial institutions to provide credit services		50% increase in credit supply	60 expert days @ E 2,000 + 2 workshops @ E2000000	1	260,000	260,000	0	0	0	520,000
Supply small scale equipment for slicing ginger & boiling		Min 50% of ginger sliced min 50% of turmeric	Micro credit: 1250 facilities @ E 2,000	1	500,000	500,000	500,000	500,000	4,180,000	6,180,000
Encourage farmer unions and private sector to install central drying/processing/storage		Min 8 central drying/procce and storage units installed	Land lease 5 HA @ E 500K Credit E 2,04 mio/plant	1	0	4,180,000	4,180,000	4,180,000	4,180,000	16,720,000
Processors & exporters collect with own truck at farm level	30% of produce collected from the farm gate	40 trucks @ E 500,000	1	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	20,000,000	
4. Improve Quality and standard compliance (selected 4th by all)	Set simple Q-standards/grades & identify appropriate benchmarks	Min 1 Q-benchmark per spice, 50% output comply	50 expert days @ E 2,000 E 50,000 for publication	2	100,000	100,000	100,000	100,000	50,000	450,000
	Support testing capability of Ethiopian Quality Standard Authority	Adequate laboratory facilities for EQSA	E 500,000 for spice specific equipment	2	250,000	250,000	0	0	0	500,000
	Rehabilitate or establish facilities of Afro Star, ESEF, NHRI etc	establish 4 labs amongst the 25 pocket areas Upgrade 4 existing labs	E 1 mio per new lab E 500,000 for rehabilitation	1	1,500,000	1,500,000	1,500,000	1,500,000	0	6,000,000
	Train local laboratory staff on EU/ASTA regulations	20 laboratory staff trained	30 trainer days @ E 2,000 140 trainee days @ E 400 E 100,000 coord & rent	2	100,000	116,000	0	0	0	216,000
	Introduce pricing system related to quality/grade, similar to coffee grading	For each selected spice	50 expert days @ E 2,000 E 50,000 to promote	2	50,000	50,000	50,000	0	0	150,000
5. Improve value chain governance (selected 5th by all)	Promote Spice development plans as part of GTP	Spice subsector Package developed in GTP	100 expert days @ E 2,000 E 500,000 for workshops 30 esperts @ E50,000/y	1	140,000	140,000	140,000	140,000	140,000	700,000
	Assign a spice sector officer in the MoARD, BoARD, ZoARD, MeTI	a		1	300,000	300,000	300,000	300,000	300,000	1,500,000
	Strengthen EPOSPEIA	Create in EPOSPEIA a spice subcommittee	E 100,000	1	100,000	100,000	100,000	100,000	100,000	500,000
6. Encourage commercial scale production of paprika (added by committee)	Encourage private business to embark on commercial scale spices (eg paprika)	5000 Has large scale paprika commercial production	Landl lease 500 Ha @ E1000/ha + credit E 100,000/ha	1	150,500,000	150,500,000	200,500,000	500,000	500,000	502,500,000
	Other crops in private enterprise	5,000 Has large scale of other spice	Landl lease 500 Ha @ E1000/ha + credit E 100,000/ha	1	150,500,000	150,500,000	200,500,000	500,000	500,000	502,500,000
	Encourage reproduction of high yielding seeds	2 private entrepreneurs do spice seed reproduction	Lease 10 Ha land & finance equipment	1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000

## Anticipated Outputs

The committee anticipates the following outputs to result from the strategy:

1. Yield will improve 20%
2. Volume loss will be reduced by 20%
3. (jointly this factor alone will boost volume output > 30% on the same acreage)
4. Quality will increase with 20% thereby addressing new clients in EU/USA markets
5. Spice Export volumes will double to 30.000 tons by 2015 (not counting paprika-extract exports)
6. Spice Export earnings will triple to US\$50.000.000 + at the forecasted world market prices

### 5.3. Resources needed to implement the strategy

As per the implementation plan above, each activity is a cost to the Coordinating Committee with support from the Ministry of Agriculture, Trade and Industry. As shown in the table below, the estimated cost to implement the listed objectives 1 to 5 for the period of 2011-2015 is 7.5 million\$ US or 121 million Birrs.

**Table No. 14. Estimated cost of the implementation for 2011-2015**

Objective	2011-2015 total cost in ETB	2011-2015 total cost in USD
Improve pre- and post harvest and processing practices	51,725,000	3,232,812
Improve marketing practices	10,845,000	677,812
Improve capacities/capacity building and access to Finance	48,440,000	3,027,500
Improve Quality and standard compliance	7,316,000	457,250
Improve value chain governance	2,700,000	168,750
<b>SUB-TOTAL (5 Objectives)</b>	<b>121,026,000</b>	<b>7,564,125</b>

The resources needed for 5 years are not significant and the return on investment is high if we consider that the immediate export revenue generation (using the existing export crops ginger, turmeric, black cumin) can be increased 3 times from 18 million USD per year to approximately 50 million USD per year between 2011 and 2015 if the strategy is implemented.

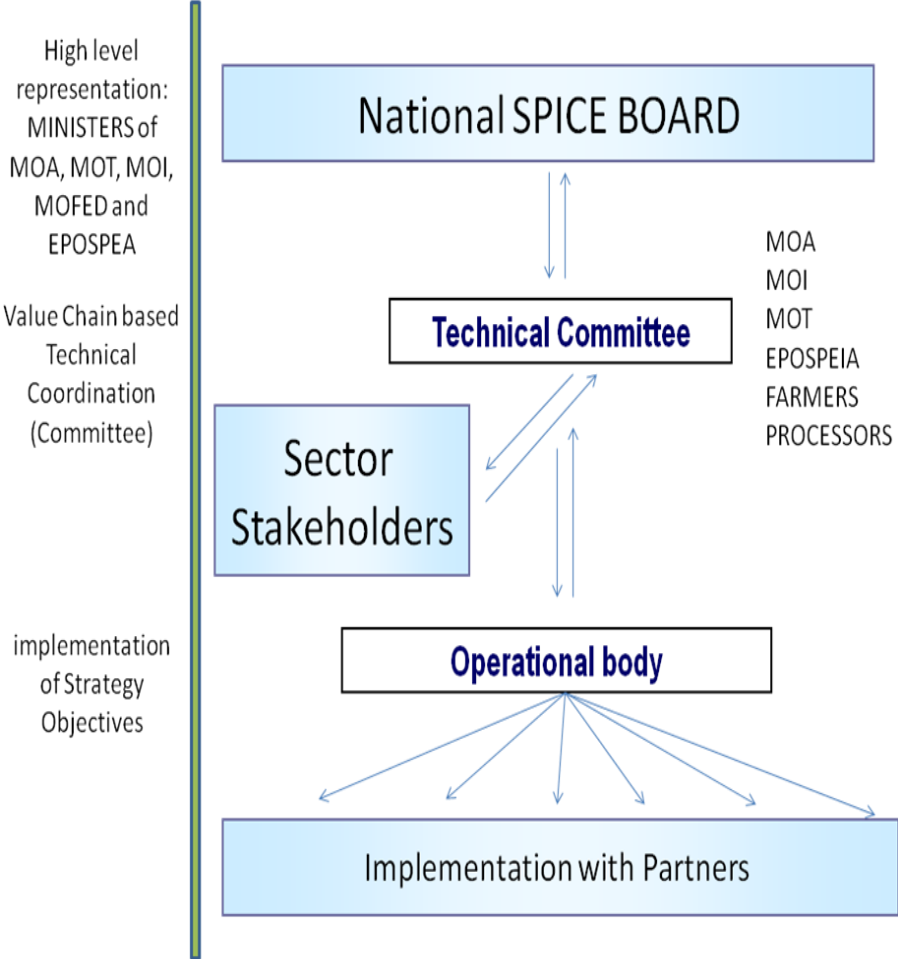
This intervention will also have a spillover effect on the domestic production and consumption improving the quality of life of the sector stakeholders.

Objective 6 has been added by the Coordinating Committee and is based on the market potential for oleoresins and essential oils as well as for export of paprika and chilie. As explained in the strategy objectives section, the committee has suggested that this objective is treated on a commercial farming basis and thus should be dealt with separately. This objective is mainly seen as an investment opportunity for private sector for the development of a full commercial value chain with participation of smallholders.

The Coordinating Committee has estimated that the investment cost would amount to 63 million\$ US, as outlined in the implementation plan. However, in order to assess the potential and return on this investment, a full feasibility study and business plan needs to be undertaken.

### 5.4. Implementing Framework

The coordinating committee has identified the framework portraid in the structure below as the best system for an efficient strategy implementation, management and coordination.



It is recommended that the overall ownership and championship of the spice sector development lies within a National Spice Board (NSB). The National Spice board would be a high level cross-ministerial forum responding to specific sector needs in terms of policy formulation.

The NSB would receive inputs and progress reports from a technical committee which would be responsible for implementation coordination through its operational arm. The Technical committee shall be composed of value chain and stakeholders from private and public sector and its overall task will be to coordinate the implementation and to ensure stakeholder priorities are represented. To function efficiently, the coordinating committee would count with the support of an operational body composed of a manager and administrative staff.

Reporting and progress review on the spice sector strategy implementation would be undertaken by the Technical committee to the National Spice Board 3 times per year.

## ANNEX I Strategy Workshop participants list, July 14-15, 2010

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