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THE SPICE INDUSTRY IN TANZANIA:
GENERAL PROFILE, SUPPLY CHAIN STRUCTURE,
AND FOOD STANDARDS COMPLIANCE ISSUES

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Abstract

The fall in the agricultural sector's contribution to Tanzanian export earnings since the early 1990s has increased attention toward new crops with the potential of supplementing the country's traditional export crops. Particular attention has been focused upon identifying crops enjoying price stability, high demand elasticity and low substitutability. Spices fall into this category. Consequently there have been efforts by public agencies and private exporters, both on the mainland and on Zanzibar, to promote the crop. However, access to high value export markets raises issues of supply chain dynamics and conformity with international standards. This paper focuses upon the recent history of the spice industry in Tanzania with reference to these issues. The main conclusions are that Certified Organic standards are the only international standards complied with, and that a very loosely coordinated chain exists alongside a more coordinated one. Macro- and micro-institutional weaknesses need attention if the full potential of the sub-sector is to be realized.

1. Introduction

Tanzanian traditional exports have recorded a dwindling performance over the last two decades. Factors like commodity specialization, low price elasticity, variability in supply and demand, and geographical concentration have been advanced as potential causes of this performance (Murray, 1998; Koester *et al.*, 1999). Export earnings influence country's national income, rate of saving, capital formation, price stability, and import capacity (Gyimah-Brempong, 1991; Love, 1992). Instability in export earnings has serious implications for the rate of inflation, tax revenue, and debt burden. Tanzania has thus been looking for alternative export crops to mitigate prevailing instability in earnings from traditional export crops.

Both the Structural Adjustment Programme (1983-85) and Economic Recovery Programme (1986-1989) had, amongst their main concerns, the need to stabilize foreign exchange earnings (Maliyamkono and Bagachwa, 1990). The fall in prices of traditional export crops is one of the factors that have caused the contribution to export earnings from the agricultural sector to fall from 50 % in the mid-1990s to just over 20% since 2000 (Amani, 2005).

A major recommendation to all Least Developed Countries (LDCs) in redressing their export earnings instability is to diversify their traditional exports towards high value agro-food products (ITC, 2001). The latter are said to be superior to the former in terms of their price stability, high demand elasticity, and low substitutability. In Tanzania, such high value agro-food products include fish, cut flowers, vegetables and spices and herbs. The scope of this paper is confined to spices, although herbs also are discussed in passing.

Globally, annual imports of culinary herbs and spices are in excess of US\$ 2.0 billion with an annual growth rate of 8.5%. However, import markets for spices are concentrated with European Union (EU) and United States (US) purchasing more than half of the total world exports (Jaffee, 2004; ITC, 2001). Between 1995 and 1999, Tanzania ranked third among LDCs by exporting 5% of LDCs' total spice exports. Madagascar was the largest LDC exporter (72%) followed by Comoros (6%), but total LDC exports fulfilled only 5.5% of global import demand (ITC, 2001).

The most important spice producing area in Tanzania is Zanzibar (the term here is used to cover both the island of Zanzibar – Unguja in Kiswahili – as well as Pemba). Zanzibar began its effort to look for alternative export crops to diversify its export earnings from cloves in the early 1990s. The efforts by the Zanzibar Ministry of Agriculture, Livestock and Natural Re-

sources (ZMALNR) were conducted under the Zanzibar Cash Crop Farming Systems Project (ZCCFSP) which was financed by the British Overseas Development Agency (now DfID). ZCCFSP identified four crops (chillies, hibiscus, turmeric, and mango) as priority crops (ZMALNR, 1993). The inclusion of two spice crops (chillies and turmeric) in plans to augment earnings from cloves (also a spice) reflects the traditional importance accorded to spices in Zanzibar. Unfortunately, research activities under ZCCFSP ceased in 1995 due to ODA withdrawing funding. This followed political unrest in relation to the 1995 general election in Zanzibar.

There was no similar effort on the mainland in respect of spices during the same period. More recently however, the trend seems to be changing with growing emphasis from government and donors on promoting spice production. There are now government policy directives that are aimed at introducing spices like vanilla and paprika (in addition to existing common spices being produced) in the more important producing areas of Morogoro and Tanga regions¹. The fact that Board of External Trade (BET), which is under the Ministry of Industry and Trade (MIT), is nurturing the formation of a Spices Exporters Association (Caigher, 2004) further indicates increased government interest. Donor programmes like the USAID's DAI-Pesa (Private Enterprises Support Activities Project) in Iringa region and the Belgian TRIAS in Bukoba region are also involved in promoting paprika and vanilla.

The 1990s were a period of apparently increasing numbers of producers and levels of production, growing linkages between mainland spice producers and Zanzibar spice traders, external influences from spice importers/international spice promoters, and a growing awareness of international trade opportunities. Another important contribution was a donor project promoting organic farming, Sida's Export Promotion of Organic Products from Africa (EPOPA). Historically, Zanzibar has been a world renowned source of spices, so its involvement in new spice products was important in securing international recognition of a revival in the sector.

There are no reliable data for Tanzanian spice exports as a whole, but data on imports of spices from Tanzania to the EU is available. The main exports that are not captured in the EU data is exports of cloves and chilli to Asia (see below), overwhelmingly by the publicly-owned Zanzibar State Trading Company (ZSTC).

¹ Efforts to introduce vanilla in Morogoro and paprika in Muheza, Tanga were confirmed by the respective District Agricultural Officers during surveys that were conducted during the third and fourth quarters of 2005.

Table 1: EU spices imports from Tanzania, 2001 – 2005 (value in Euros)

Spice Type	2001	2002	2003	2004	2005
Cloves	358,734	354,687	39,047	72,506	49,386
Ginger	210,196	96,812	39,589	54,721	45,653
Paprika, chilli (dried, crushed or ground)	154,261	378,806	275,714	374,924	477,114
Black pepper	56,741	43,347	6,730	5,701	27,159
Other spices	40,980	3,004	2,675	0	0
Cardamom	45,802	0	0	0	0
Turmeric 'curcuma'	12,168	7,836	24,095	0	6,356
Vanilla	11,770	0	0	0	1,167
Cinnamon	0	1,506	5,996	3,985	2,216
Coriander seeds	4,885	0	944	0	0
Thyme and Bay leaves	0	0	650	0	0
Various mixtures	0	515	0	103	0
Total	895,537	886,513	395,440	511,940	609,051

Source: <http://fd.comext.eurostat.cec.eu.int/xtweb> (Eurostat).

The main trend shown in the table is the decline in exports of cloves to the EU following 2002. This reflects declining procurement by ZSTC.² ZSTC always re-sold a proportion of its procurement locally to a private company exporting to the EU (M/s TAZOP, see below). As procurement fell, the proportion that was re-sold locally in this way fell to an even greater extent. A trend which, for the purposes of this paper, is even more important but which is not clear from the statistics, is for paprika and chilli exports to the EU (easily the largest category in terms of value) to become dominated by certified organic exports. Thereby, Tanzanian spice exports generally to the EU have become dominated by certified organic exports.

The first diagnostic study on Tanzanian spice exports was carried out by MIT through BET in 2002 (URT, 2002). The most recent study is however a World Bank consultancy describing the industry's constraints and potential and analysing the support required for its future development (Caigher, 2004). This study also described the types of spices grown in Tanzania by location, estimated current production area, identified potential production areas and commented on the institutional environment and on marketing issues. On the basis of a SWOT analysis it then recommended a development plan for the sub-sector. The study singled out the sub-sector's fragmented supply chain as a major hurdle to its future development.

² ZSTC clove procurement fell from 5.90 tons in 2002 to 3.35 tons in 2005. Another contributory factor was increased smuggling of cloves to Kenya for export via Mombasa, in response to higher prices being available on the parallel market.

This paper also focuses in detail on the industry's supply chain structure³. The specific issues of the research are essentially two. Firstly, it discusses the extent and type of vertical coordination mechanisms that exist in the industry. Secondly, it identifies the extent of the industry's compliance with international standards and undertakes a preliminary discussion of costs and benefits of compliance.

These themes are of course related. The first reflects a growing recognition that international trade is now operated mainly through global chains and networks of formally independent agents, rather than taking place internally within vertically integrated transnational corporations (Kherallah and Kirsten, 2001). Because of high levels of competition between suppliers in different locations, success in accessing markets depends on actor's ability to be part of a competitive chain. This in turn generally rests on the presence of some form of vertical coordination falling short of vertical integration. Study of types of vertical coordination present in a sub-sector such as spices in Tanzania is thus crucial to understanding its prospects for international competitiveness.

Attention to the second theme (compliance with international standards) is inspired by the fact that food standards imposed by importing countries appear to be escalating, to the extent that they can constitute non-tariff barriers to trade (Antle, 1998; Hoekman and Kostecki, 2001; Mitchell, 2003; Athukorala and Jayasuriya, 2003). At the same time, knowledge of costs and benefits of conformity with them is sparse. So too is knowledge of whether there are alternative markets to those demanding high standards, and of compliance costs in these markets. Knowledge of compliance costs is also important in designing efficient regulation for the industry, if the approach recommended by OECD is to be emulated (Beghin and Bureau, 2001).

This paper presents results from preliminary surveys in three main spice producing areas in Tanzania, namely; Morogoro, Tanga, and Unguja, conducted during the third and fourth quarters of 2005. The survey was extended to Dar es Salaam during the first quarter of 2006, since this is the major trading centre for spices in Tanzania.

³ This paper is part of on-going PhD research by the first author, which attempts to cover in more detail the questions discussed in this paper.

2. Methodology

The preliminary surveys undertaken had the following objectives:

- To identify the main spices produced and traded (domestically and externally) in Tanzania
- To establish the key actors in the Tanzanian spice supply chain (from production to consumption)
- To ascertain the main international standards being applied to Tanzania's spice exports
- To identify institutions (including rules and regulations) relevant to the governance of spice production and trade in Tanzania.

Survey data were collected mainly using three rapid appraisal methods: key informant interviews, focus group discussions, and physical observations. Interviews followed standardised question guides. Interviews in Zanzibar involved key personnel from the Commission for Agriculture, the Commission for Investment, from the certified organic spice companies (TAZOP, ZANGERM), the conventional spice companies (MADAWA Ltd and Zanzibar State Trading company (ZSTC)), Kizimbani spice farm (government owned), Kizimbani Agricultural Documentation Centre, the Zanzibar Chamber of Commerce, and spice traders in Zanzibar town central market and the Stone Town area.

Focus group discussions in Zanzibar were carried out in five villages. In North Unguja the villages covered were Funga (Gamba sheiya), Uyagu (Mkwajuni sheiya), and Makunge (Kijini sheiya). In South Unguja those covered were Kitegani and Muungoni. Discussion groups were composed of village/sheiya agricultural field officers and 2-5 selected so-called 'progressive farmers' (farmers who were generally larger, better educated, more commercialised and more knowledgeable than their counterparts).

In Morogoro (mainland Tanzania), key informants interviewed included the District Agricultural and Land Development Officers for Morogoro Rural and Mvomero districts⁴, the Morogoro District Horticulturist, and technical personnel from MVIWATA (National Network for Small-Scale Farmers' Groups in Tanzania). Focus groups were made up of village government leaders, ward/village agricultural officers, and selected progressive farmers. The villages where

⁴ The two positions were being held by a single officer during the survey.

focus groups were held, were Kinole, Tegetero, and Mkuyuni in Mkuyuni division, Morogoro district; Tawa in Matombo division, Morogoro district; and Mhonda and Diongoya in Turiani division, Mvomero district.

Interviewees in Tanga were from Muheza and Tanga urban districts. Key informants include the Muheza District Crops Officer, the Muheza District Extension Officer, Muheza District Cooperative Officer, Muheza District Focal Person for the Agricultural Marketing Sector Development Programme (AMSDP), the CEO of M/S Distefano Agriconsult (the AMSDP partner agency for Muheza district), TAZOP warehouse management staff at Tangasisi in Tanga municipality, spice traders in Muheza and Tanga municipality urban markets, and spice traders in Kwamhosi village in Muheza district. Focus groups were of the same composition as in Morogoro and were carried out in five villages in Muheza district: Msasa IBC, Kisiwani, and Mashewa in Amani division, and Kwamhosi, and Bombani in Bwembera division.

The Dar es Salaam survey covered traders only. Interviewees included key personnel from former and current leading conventional spice exporting companies (M/S Export Trading Co. Ltd, Mohamed Enterprises, and Fidahusseini Co. Ltd) as well as two leading Kariakoo market traders (*dalalis*).

The data collected was all qualitative. Data on production levels and trade seemed to be unavailable, even from the Ministry of Agriculture and Food Security (MAFS). An attempt to obtain data for traded volumes from Zanzibar customs also proved futile. The organic companies record figures in respect of their dealings, but these were not solicited at this stage of the research.

3. General profile of the Tanzanian spice industry

(I) PRODUCTION

Cultivation of spices in the surveyed areas is generally smallholder-based, save for the 63 acre Nasibu farm (private), the Kizimbani government farm in Unguja, and the reported (but not visited) Kimango estate on the mainland. In Unguja, farm sizes are mostly below one acre with very few exceptions. The latter mainly concern chilli farmers on the coral rag area, who may farm up to 8 acres. Coral rag forms more than 50% of Unguja Island (A. J. Juma, person-

al communication, 2005⁵) and, in terms of spices, it is only chillies that can thrive on this rocky terrain. Pressure on remaining arable land is very high, so that the prospects for increasing acreage are quite low.

The types of spices grown in Unguja include clove, chillies, cinnamon, cardamom, turmeric, black pepper, nutmeg, ginger, and vanilla. Similar spices are grown on the mainland, as well as paprika and coriander seeds. Due to lower land pressure on the mainland, farm sizes for spices are relatively bigger thus providing for the critical volumes needed for trading. Close cooperation between mainland spice farmers and Isles spice traders is inspired by this reality.

Information from District Agricultural Officers in the surveyed areas confirmed that there are currently policy directives to introduce vanilla and paprika in the Muheza (Tanga) and Morogoro spice producing areas on the mainland. The reason for these moves is a perception that there is high demand locally and internationally for these crops and that they command high prices.

According to the Kizimbani farm field officer however, vanilla needs special skills to manually pollinate its flowers. This could perhaps limit its rapid introduction in the proposed areas. According to Caigher (2004), Bukoba (North-west Tanzania, bordering Uganda) provides an environmental niche in Tanzania for vanilla cultivation and efforts by the Belgian TRIAS organisation are geared towards exploiting this advantage.

(II) FARMING SYSTEMS

In Tanzania, with the possible exception of cinnamon, spices are mostly intercropped with other crops including banana, citrus, and a variety of tree crops (pawpaw, coconut, mango, etc). Under situations of intensive intercropping, it becomes more relevant to ascertain individual farmer's scale of production through counting the number of spice trees/bushes/plants or vines owned, rather than farm acreage being cultivated. This is especially relevant for spices like black pepper and vanilla. For others like chilli and turmeric, plot sizes are more relevant, notwithstanding the prevailing intercrop systems. Intercropping is a coping strategy that aims

⁵ Juma A. Juma is an employee of the Ministry of Agriculture, Livestock, and Natural Resources and works with the Zanzibar Commission of Agriculture. Privately, he is also a consultant for one of the organic companies in Zanzibar - M/S Zangerm Entreprises.

at mitigating the risk of loss in relation to any specific crop, through spreading it over a number of different crops. It is also a direct response to pressure on arable land.

Lemongrass, a herb, is intensively cultivated in tandem with spices in Unguja (Zanzibar) and Muheza (Tanga). It is bought from farmers by the same organic companies that buy spices. It is in demand for its essential oils content. In Unguja, other traded sources of essential oils include clove, eucalyptus, and galgant (*mrehani*). There is a strong overlap between trading of herbs and spices worldwide, as reflected in the inclusion of herbs in most discussion of global supply and demand trends for spices (see e.g., ITC, 2001).

Shade-loving crops like cardamom have always been cultivated in the vicinity of natural forest. Their production levels have dwindled lately following displacement of farmers from the areas gazetted as national natural forest reserve. Evictions have occurred to cardamom farmers in Turiani (Morogoro) and Amani (Tanga).

Spices in all production centres are produced organically in the sense of non-use of fertilizers and pesticides. During focus group discussions, it became clear that this is a result of farmers' inability to meet the costs involved in acquiring these inputs, rather than reflecting intentional decisions aiming to uphold organic farming principles. However, the fertility levels of these areas (as assessed on the basis of available biomass data) hardly justify usage of fertilizer in any event. Spices are also minimally infested with plant pests and diseases, thus synthetic pesticides / insecticides are also hardly required. Some spices like clove and pepper are natural repellents to insect pests. The major hazards during production are drought and weed infestation (if crops are left unattended). Mould infestation may also occur in cases of poor post-harvest handling.

Some certified organic farmers are found both in Zanzibar and on the mainland. Certified organic farming is carried out under contractual arrangement between farmers and Zanzibar-based organic export companies (see details below). The difference between the 'organic-by-default' nature of Tanzanian spice production generally (following from low input, traditional farming practices) and the certified organic status of a part of this production is yet to be comprehended by most conventional spice buyers. This observation stems from the fact that, during the survey, there were appeals to the researchers by some conventional buyers seeking help in confirming to importers that their crop was also 'really' organic.

(III) CERTIFIED ORGANIC PRODUCTION AND TRADE

In Tanzania generally, certified organic spices are dealt with by two major companies, namely M/S TAZOP Ltd and ZANGERM Ltd. M/S TAZOP Ltd is historically a splinter company from M/S ZANGERM. Both companies have their headquarters in Zanzibar. They maintain field representatives and warehouses in all major spice producing areas in Tanzania. As of July 2005, M/S TAZOP contracted a total of 320 certified farmers at five sites – Unguja, Pemba, Morogoro, Kigoma, and Tanga, whereas M/S ZANGERM had a total of 700 farmers – in Unguja and Pemba (150), Tanga (300), and Kigoma (250). Kigoma region in western Tanzania is renowned for its ginger crop.

M/S TAZOP Ltd deals in an assortment of spices that include chillies, ginger, cardamom, cinnamon, turmeric, nutmeg, clove, and pepper (green, black, white). It handles about 200 tons per annum of different organic products that include the mentioned spices, herbs (galgant, lemongrass) and citrus peels (undated company brochure; Khamis Issa Mohamed⁶, personal communication, 2005). In the surveyed areas, TAZOP dominates the market for black pepper and lemongrass in Muheza (Kwamhosi village), and for cinnamon in Morogoro rural. ZANGERM's presence was not felt in the mainland, but in Zanzibar it dominated the market for bird's eye chilli in Makunge village (Northern Unguja).

All certified organic farmers are certified through one or another of the organic export companies. The companies meet all certification and inspection fees (for annual audits) which would be quite beyond the ability of their registered farmers. At the same time, a contract is entered into between the company and the farmer, under which the farmer undertakes to comply with organic standards and to deliver his or her crop to the company at an unspecified price. Certified organic standards are monitored on the basis of an Internal Control Systems (ICS), and the results are updated annually by the company. Compliance is assessed by organic company field staff and designated internal inspectors.

The contracts are not legally enforced, however. Thus farmers are not bound to sell their crop to the contracting company. Likewise companies have reneged on contract provisions that require them to buy farmers' entire crop. Usually the sales-related contract provisions are observed only subject to market demand. However, non-compliance with certified organic standards has consequences for farmers, ranging from temporary to permanent exclusion from the

⁶ Khamis Issa Mohamed is the Managing Director for M/S TAZOP Ltd.

scheme, depending on the extent of the violation. Lack of enforcement of sales provisions is illustrated by the fact that only 65-70% of roughly 350 tons of certified ginger produced by ZANGERM's registered farmers in Kigoma is normally bought by the company, whilst the rest is sold locally (J.A. Juma, personal communication, 2005). Chilli farmers at Makunge village in Northern Unguja also complained that their contracting company (ZANGERM) frequently failed to buy their entire crop, as provided for in their contract.

Organic certification is carried out by the Swiss-based International Marketecology Organization (IMO). IMO annually audits a sample of certified farmers (either taking the square root of all certified farmers or a 10% sample) to ensure compliance, while – as already indicated – compliance by all farmers is ensured via internal inspections. Given the costliness of external inspection exercises in terms of logistics and living allowances for IMO's inspectors, sometimes the two companies (which are otherwise bitter rivals) cooperate in meeting local logistical costs.

According to the literature (e.g., Mitchell, 2003), process standards like those for certified organics are more expensive to implement than product ones. On the other hand, implementing a certified organic system of production for Tanzanian spices may eliminate the requirement to purchase special testing equipment for product testing for hazards like aflatoxin, heavy metals, and minimum pesticide residue levels (MRLs) that would otherwise be required for exporting spices to the EU. At the same time, it should be noted that, in the conventional spice marketing chain to the EU, the requirement for testing for some of these hazards is also being complemented by demands for conformity to standards such as Eurep-GAP which are mainly process-oriented (Reardon and Farina, 2001).

(IV) MARKETING

Marketing of spices is done by organic companies, conventional companies, and various small scale traders. The organic companies have already been discussed above. There are two main conventional companies in Zanzibar, M/S Zanzibar State Trading Corporation (ZSTC) and MADAWA Ltd. MADAWA LTD deals in processing of medicinal spices and herbs for the local market.

M/S ZSTC is endowed by law with the privilege of being the sole dealer in clove and clove products in Zanzibar. It also deals in conventional chillies, according to producers in South Unguja. Clove is the main export crop for Zanzibar and is mainly exported to cigarette manufacturers in Indonesia. According to ZSTC, Zanzibar clove is preferable to other origins for

cigarette-making, due to its low eugenol content. ZSTC also exports raw clove and clove oils into the Middle East (Gulf states), India, Singapore and Pakistan. However, clove exports into Singapore and India also finally end up in Indonesia (Suleiman J. Jongo,⁷ personal communication, 2005).

The organic companies are private and their produce is destined for the EU market – specifically Switzerland and Germany. Both organic companies have a foreign-based sister company that assists in marketing the product abroad. TAZOP has a Swiss-based sister company whilst ZANGERM's partner is based in Germany. Relationships with sister companies are strong, and are underwritten by foreign partners' shareholdings in the local companies. TAZOP Swiss, for instance, owns 49% of shares in TAZOP Zanzibar (K.I. Khamisi, personal communication, 2005).

These partnerships are aimed at minimizing information costs in relation to compliance with organic standards. The quasi-vertical integration involved also helps to minimize buyer search costs, price discovery costs, and monitoring costs. It further ensures product supply reliability. The arrangement is quite consistent with the literature on the factors that determine the nature and magnitude of transaction costs in a primary production system (cf. Hobbs and Young, 2001). The local partner ensures organic standard compliance (certified organic) and availability of steady product volume needed by the market. The foreign partner (at least in the TAZOP case) meets inspection and certification fees, canvasses for business internationally, and ensures that favourable prices are secured.

Similar partnerships have been seen in asparagus and soybean farming in Thailand (Manarungsan *et al.*, 2004), as well as for citrus and tomato farming in Morocco (Aloui and Kenny, 2004) in a context of compliance with Eurep-GAP and BRC protocols. Such arrangements are well-documented generally in the literature on the importance of vertical integration in minimizing information costs on standards compliance (Antle, 1999).

There are no organic companies buying spices in Morogoro, Tanga, and Dar es Salaam regions on the mainland. The survey identified only two active conventional companies – M/S Fidahusseini & Co. (cardamom and black pepper) and M/S Export Trading Company Ltd (cardamom, clove, and cinnamon). The list of spice exporting companies provided by Caigher (2004) thus needs a lot of updating as for example, M/S Mohammed Entreprises ceased deal-

⁷ Suleiman Jongo is Marketing Manager for ZSTC.

ing in spices (cardamom) about 10 years ago. Others like Samed Co.Ltd and Saifi Industrial Complex Ltd could not be located at the addresses given in Dar es Salaam and ZANOP Ltd in Zanzibar has since ceased operation.

One of the active conventional companies (M/S Export Trading Co. Ltd) exports to Asian markets (Indonesia, Singapore, Philippines, India, Pakistan, and Malaysia) and Europe (United Kingdom, and Portugal) (Mahesh Patel,⁸ personal communication, 2006). The reported export of conventional spices into the EU was rather unexpected given the stringent food safety standards thought to apply to non-certified organic exports.

M/S Fidahussein & Co. Ltd exports spices to Sudan, Korea, Dubai and Pakistan. More generally, there is a two-way product flow between these markets and Tanzania as many Asian, Middle Eastern and African spice products are found in urban markets and spice shops in Tanzania. Examples of these products include Indian cinnamon, Iranian black cumin, and Kenyan white ginger.

Small scale spice traders constitute a spectrum of dealers ranging from village-based brokers (village *dalali*), village traders, distant/external traders, to urban market brokers (market *dalali*) in spice producing areas and Dar es Salaam. In the conventional trade, central urban (bulking) markets are the main supply sources for other markets within producing and non-producing regions in Tanzania, as well as nearby regional markets. For instance, Tanga central urban market supplies other small markets within Tanga, urban markets in Arusha and Kilimanjaro regions, and neighbouring Kenya and Zanzibar markets.

Kariakoo (bulking) market in Dar es Salaam is the major destination for all spices being produced in Morogoro and Tanga. It is also the major supply source for informal Tanzanian exports to regional markets like Zambia, Zimbabwe, Malawi, Comoros, DR Congo, and Botswana (see below). There is a paucity of data on the volumes of spices being traded in this way. Kariakoo market traders (*dalalis*) are the major suppliers of these markets, but do not formally record their transactions, nor do government authorities in the region.

⁸ Mahesh Patel is Managing Director for M/S Export Trading Company Ltd.

(V) EXTENSION SERVICES AND BROADER GOVERNMENT INVOLVEMENT

Government-provided extension services specially tailored for spice farmers were absent in all areas surveyed. Field extensionists admitted their lack of competence to provide extension to spice farmers. Caigher (2004) reported the low impact the government system was making on the spices sector on this front, and observed that this was understandable given the system's restricted experience of spices. Organic companies do however provide tailored extension services to their certified farmers to ensure that organic farming practices are adhered to.

More widely, despite the scattered initiatives at central and local government level described earlier, government involvement in the promotion of the sector has in reality been minimal. This reflects the fact that the crop is still officially designated as of 'minor' status in the government's overall agricultural development plans. It is also reflected in the absence of an apex or umbrella organization to monitor production, exchange, and distribution in the sub-sector at the macro level.

(VI) THE ECONOMIC INSTITUTIONAL ENVIRONMENT

The institutional environment as understood in New Institutional Economics (NIE) refers to the 'rules of the game' as these affect behaviour and performance of economic actors, and in which organizational forms and transactions are embedded (Kherallah and Kirsten, 2001). Williamson (1993) describes them as the set of fundamental political, social, and legal ground rules that establish the basis for production, exchange and distribution.

Generally speaking, macro-level rules of the game in Tanzania have been steadily transformed in a market-based direction over the last two decades. Private ownership and business transactions have become norms, although they are by no means well-institutionalised to the extent evident in developed countries. At a micro level, NIE analysis is concerned less with the overall 'environment' than with specific institutional arrangements (Kherallah and Kirsten, *op. cit.*). The latter concern modes of managing transactions, and include market, quasi-market, and hierarchical modes of contracting (Williamson, 1993). Analytical focus is on arrangements between economic actors that govern the way in which they routinely cooperate and/or compete.

From the viewpoint of this perspective, micro-institutional arrangements in the spices sub-sector are very weak. In respect of marketing, for example, not only do buyers not observe

written contracts but there is also widespread free-riding behaviour and buyer collusion. In fact, opportunistic behaviour by different economic actors involved in the spice supply chain appears to be the norm, with producers (both conventional and certified organic) bearing most of the adverse consequences. Collective action might always curb the free-riding and buyer collusion problems, but the observed lack of farmer groups/associations and trader associations in the sub-sector, suggests that the problems are here to stay.

It seems difficult to address the prevailing weaknesses of institutional arrangement without first addressing the lack of consistent government interest in the sub-sector. Although the macro-level institutional environment is more favourable than in earlier periods, it is not sufficiently institutionalised to provide a framework favouring well-functioning micro-level institutional arrangements. In the meantime, the big issue is therefore how to get the government to formulate and implement pro-spice policies, around which a synergistic private–public sector partnership in the industry could develop.

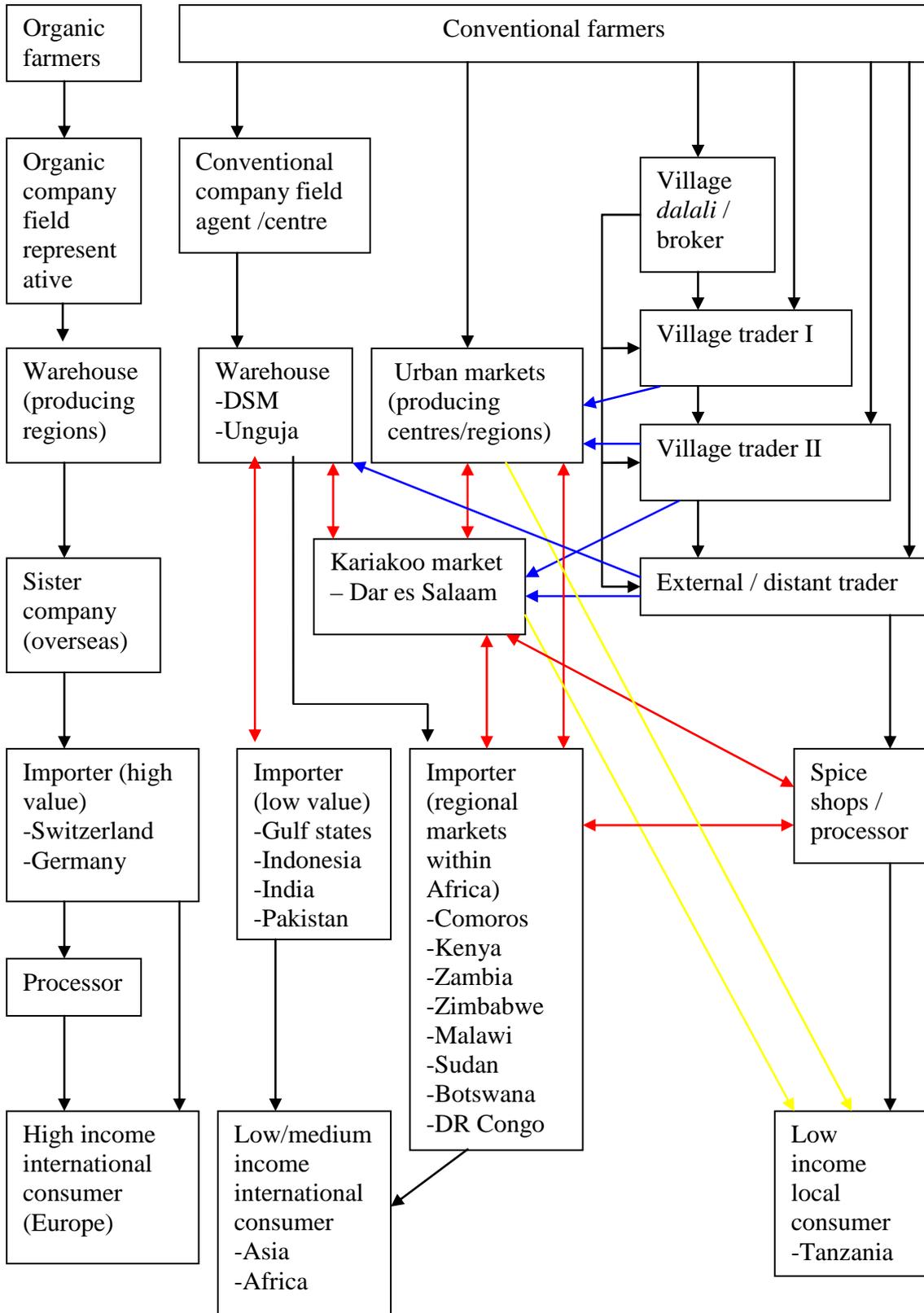
4. Supply chain structure

Caigher (2004) characterized the Tanzanian spice supply chain structure as fragmented. It is not very clear as to the exact meaning of this characterization. Our own survey established that the chain has two basic structures (see Figure 1). Hence, in the first instance, the chain as a whole is better characterised as segmented. Within this overall structure, a sub-structure is made up of a very closely coordinated chain with well-defined vertical stages from production to final consumer. This is the chain based on certified organic farming. It takes the general form:

Farmer → organic company (local) → sister company (abroad) → high value market.

The second sub-structure is made up of numerous actors whose relationships are loosely coordinated through short- or long-term business transactions. These relationships are not institutionalised through contracts or vertical integration and they change rapidly over time. This chain is characterized by lack of well-defined roles and stages from production to consumption and is based upon conventional spice production.

Figure 1: The supply chain(s) for Tanzanian spices



Especially in the loosely coordinated chain, free-riding and other types of opportunistic behaviour upstream (in dealings with farmers) is accompanied by high levels of leapfrogging further down the chain, as actors pursue multiple strategies to maximize profit. Relationships between actors in the conventional spice chain are thus variable and impermanent. This is perhaps what is referred to as a fragmented structure by Caigher (2004). It takes the general form:

Farmer → *dalali* / *traders* → *urban markets* ↔ *regional markets* / *Local consumer*.

This structure reflects the fact that regional markets operate with the same (lack of) food safety and/or quality standards as the Tanzanian domestic market.

Figure 1 depicts the type of actors in the two chains and the interrelationships between them. The number of layers of intermediaries between production and consumption is likely to change in every transaction, depending on prevailing circumstances. The larger the number of layers of upstream actors (village *dalali*, village traders I and II, and distant traders), the lower the share of the price received by the farmer. Current efforts by AMSDP to link farmers direct to buyers / processors are based on this understanding. The modus operandi of each and every actor in Figure 1 is discussed below. The informal names applied to each group of actors are provisional and intended to enhance understanding of the categories involved. Kiswahili names are given in italics. Owners and employees of the larger organic and conventional companies have already been discussed above and are thus excluded

(a) Farmers

Farmers sell produce either to village *dalali*, village trader I, village trader II, or to an external trader. The produce can be sourced at the farm gate or else delivered to the buyers' business premises. Normally, these are spot market transactions on cash terms. However, farmers sometimes sell on credit terms to certain buyers with whom they have long trading ties.

Forward sales are also practiced whereby farmers sell their crop on-farm before harvesting or even before reaching full maturity. Notwithstanding the sale, they will be required to protect the crop from fire and theft till the buyer harvests it. The price is negotiable and either party faces risk of loss from over or under-valuation.

(b) Village *dalali* (*Mlanguzi*)

This is a village-based broker that is contracted by village trader I, village trader II, or an external trader, to collect spice(s) on their behalf. The contract is entered into verbally and is

based on trust. The contract is a forward sale arrangement whereby the village *dalali* and a trader agree on a price. Payment is made in advance to the village *dalali* by the trader (the principal) at the agreed price, as the former lack working capital. The village *dalali* then collects spices from farmers at whatever price he or she can negotiate until the required volume is delivered to the trader. Merchandise is normally purchased at farmers' premises.

The village *dalali's* commission is supposedly the difference between the actual prices paid to farmers and the forward sale price agreed on previously, plus an agency commission of Tshs 100/- per kilogram. Because they are known to command high margins on a risk-free basis, village *dalali* are often referred to as *walanguzi* (racketeers) by locals. For turmeric in Northern Unguja, *dalali* commissions are fixed at Tshs. 5,000– 6,000/- per consignment, rather than by the kilogram. A trader will typically advance a *dalali* Tshs. 100,000/- for such a consignment.

Traders take precautions in selecting the village *dalali* that they deal with, as the opportunity cost of using an unscrupulous one can be very high. Total loss of the advance payment, delivery of crop below standard or in lower volumes than agreed are all experienced. Risk is considered higher when dealing with small *dalalis* ('*dalali wadogo*') than with big ones ('*dalali wakuu*'). Big *dalalis* may have their own small business stalls in areas with village markets, such as the MVIWATA-built markets in Morogoro. Often, external traders go to the villages with names of prospective *dalalis* that have already been vetted by their experienced trader colleagues.

(c) Village trader I (*Mnunuzi wa kati*)

Village trader I may double as, or graduate from the status of big village *dalali* ('*dalali mkuu*'). He/she operates on their own capital to buy merchandise from farmers for onward selling to external traders and/or to village trader II. They normally own business stalls at the village market and would be normally considered more trustworthy than 'ordinary' village *dalalis*. They may collect merchandise direct from farmers' premises or else farmers may deliver it to traders' premises.

The above facts do not preclude them from the forward sale arrangements with other traders. However, in these cases the principals may just agree with them on the terms of purchase via the telephone and 'trader I' would then use his/her own money to procure merchandise before receiving money from the principal. On top of having their own working capital, having connections with large external traders represents a second competitive advantage for this group over village *dalalis*.

However, village trader I exists only where there are established village markets. In the absence of these markets, the trader I layer disappears from the supply chain and his/her place is occupied by village trader II. This fact was ascertained by observing the difference between supply chain actors in Morogoro and Muheza (Tanga). Muheza district has no established village markets, while Morogoro rural district has. The trader I layer is absent in Unguja for the same reason.

(d) Village trader II (*Mnunuzi msafirishaji*)

These are local traders with enough capital to buy spices from farmers for onward transportation and selling into urban markets. These village traders II could broker for incoming big external traders and also could use village *dalalis* and village traders I as their own brokers. Some times they collect merchandize direct from farmers especially during harvest season in order to gain a price advantage.

The career transition from village *dalali* – village trader I – village trader II is a gradual process that is governed by one's capital level. Many would start as village *dalalis*, gradually becoming a trader I after accumulating enough capital to meet the requirements of the rank, and finally climbing into a trader II position as their capital grew further.

In the past, all these traders were men. Recently, women have appeared as *dalalis*, trader Is, and trader IIs in Morogoro rural district. In Unguja, in Muheza, and in the highland Tegetero village in rural Morogoro women are typically more engaged in spice farming than trading. Women's involvement in spice trading is influenced by the traditional customs of the area in question.

(e) External / distant traders (*Wafanyabiashara wageni*)

These are inter-regional traders that collect spice consignments from farmers in the villages directly in person or indirectly through brokers as already explained above. The survey established four main sources of these traders, namely Zanzibar, Tanga, Morogoro and Dar es Salaam. The consignments purchased are transported to the urban markets in question as well as to spice shops in these locations, for onward selling to local consumers and export into low value markets such as Comoros, Kenya, Saudi Arabia, and Uganda. Tanga traders export the consignments they collect into Kenya.

Conventional companies' agents are among the major external/distant traders encountered in the villages. However, they are not easily identifiable as they do not have specific buying centres. Buying centres are always operated directly by the companies themselves. An example

observed during the survey was a M/S Fidahusseini buying centre (warehouse) for cardamom in Turiani division, Mvomero district in Morogoro region.

(f) Bulking market *dalali*

This is a broker at a central urban market that sells consignments brought to the market by incoming village trader II or by an external trader to buyers. The bulking market *dalali*, like the village one, never owns the consignment. Brokerage terms are such that the seller and the market *dalali* agree on a selling price for the merchandise. Thereafter the *dalali* may take over possession of the consignment. The seller will be paid after the consignment is sold to the buyer by the market *dalali*, whose commission consists in the difference between the two prices.

There are big and small urban bulking market *dalalis*, as there are village *dalalis*. Big market *dalalis* have their own business stalls in the market and have long term reputations as brokers. They are thus entrusted with possession of large consignments. Small market *dalalis* are not trusted, and therefore do not actually take possession of them. Instead they simply look for buyers and – on finding them – they will take incoming sellers to them. A price will have been agreed in advance between the *dalali* and the incoming seller, and the difference between the actual price paid by the buyer and this price will constitute their commission.

Kariakoo market *dalalis* in Dar es Salaam are the main players in this category. The reason is that Kariakoo is the major destination market for all spice consignments from up-country spice producing areas. It thus serves as a supply source for many urban markets in non-spice producing regions in Tanzania, for other primary produce markets in Dar es Salaam, and for numerous regional markets within Africa. Kariakoo spice traders maintain very close relationships with spice traders in urban markets in producing regions, especially those based in Tanga and Morogoro and Unguja. This is important for supply intelligence in cases of shortfalls of specific spice types on either side.

Regional export markets (Comoros, Kenya, Zambia, Zimbabwe, Malawi, Botswana and DR Congo) are all served by Kariakoo market (Babu Ali,⁹ personal communication, 2006). Spice(s) could either be transported by Tanzanian traders to these markets or else traders from these destinations might come to collect from Kariakoo. Major destinations in the former case are Nairobi, Mombasa, Kampala, Lusaka and Blantyre (to a smaller extent than the others). Due

⁹ Babu Ali is one of the major Kariakoo market *dalalis* / traders for spices.

to security threats, spice exports into war torn areas like Ethiopia, Sudan and Somalia are routed through Kenya, taking advantage of the presence of traders from Nairobi.

(g) Spice shops / processors

Spice shops and processors are mostly found in Dar es Salaam and Unguja. These operations buy spice(s) from either market *dalalis* or direct from village trader IIs. They also grind spices for onward selling to local consumers and for sales into low value export markets like Kenya, Comoros, and Saudi Arabia. M/S MADAWA Ltd is a leading processor and blender of medicinal herbs and spices in Unguja. However, all spice traders at urban markets in Tanga, Morogoro, Dar es Salaam, and Unguja also grind and mix spices for local consumers. Furthermore, this seems to be a general practice in many other urban markets in Tanzania.

5. Conformity to international food standards

Conformity to EU Certified Organic standards entails that organic companies ensure adherence by their contracted farmers to certified organic regulations. In order to do so they provide extension and supervision. It also entails rigorous control of all post-harvest processes, particularly to maintain segregation. Post-harvest processes are therefore entirely confined within their warehouses. The companies believe that the certified organic standard is more likely compromised during post-harvest processing, hence this intervention.

Verification of compliance involves maintaining an ICS, as described, as well as maintaining farmer records in order to assure traceability and maintenance of a reliable 'input-output' balance. 'Input-output relationship' refers here to assurance that certified farmers deliver only their own certified produce to the organic company (J. A. Juma, personal communication, 2005).

Organic companies also reported the existence of a practice which requires them to submit samples to their EU buyers at the start of every season for analysis.¹⁰ It was not clear (to the exporters) whether the analysis concerned was to test for substances or residues whose pre-

¹⁰ During a second survey in November 2006, organic exporters confirmed that samples are required for each separate EU-destined consignment.

sence was banned or restricted under EU food safety rules, or whether it concerned testing for quality attributes, or both. Nor was it clear by whom the testing was actually carried out. Aloui and Kenny (2004) report a similar practice of sending samples abroad for testing, on the part of Moroccan citrus and tomato exporters complying with Eurep-GAP standards. In this case however, the analysis was explicitly for chemical testing.

Conventional spice producers do not knowingly comply with any specific food safety standard. While fertilizers and pesticides are not used in spice farming in Tanzania, other sources of food safety risk are present. Conventional farmers typically sell their produce in a dried form. Drying is done while the produce is spread on bare ground, thus the risk of microbial contamination is very high.

Conventional buyers observe three quality traits; proper drying, produce maturity, and absence of physical contaminants. However, even when one or more of these traits is absent, the produce will always be purchased. Under certain circumstances, a price penalty might be imposed if the buyer has to correct a failure -as is common for improperly dried produce. Inspection for these traits is done visually.

Harvesting of immature crop is instigated by roving middlepersons. In the absence of by-laws restricting this practice, farmers are easily lured into harvesting and selling their crop in an immature state. They however incur weight losses as immature crop is lighter than mature crop. This weight loss results in financial losses as lighter produce earns less. It is due to this that conventional farmers in some of the surveyed areas were found to be indulged in intentional adulteration of their produce with various contaminants in an attempt to reduce weight loss. The physical adulterants used vary according to location, as shown in Table 2.

Table 2: Common adulterants of spice produce in the surveyed areas

Location	Adulterant (common / local name)	Adulterant (scientific name)	Spice produce affected
Morogoro	Fine sand and pebbles	-	Various
	'Mkumburu' barks	Synsepalum msolo (Pachystela msolo)	Cinnamon
Muheza	Papaya seeds	Carica papaya	Black pepper
	<i>Mvuti</i> seeds	Lantana camara	Black pepper
	Avocado barks	Persea americana	Cinnamon

Immature produce not only has short shelf life but also is of low quality in terms of its active ingredient. An example given was that of immaturely harvested black pepper. Farmers boil immature peppers before drying so that they will attain their proper black colour. The boiled product is however said to be of low piperine content and also blacker than dried mature crop. In addition, the effects of some of these physical adulterants being added to spices might be potentially harmful to consumers.

6. Compliance costs

Since, as noted, the main standard conformed to by Tanzanian spice farmers was the organic one (for certified producers only), the discussion of compliance costs presented here will confine itself to actors in this chain. The actors incurring such costs comprise organic spice farmers and export companies. On the part of farmers in the surveyed areas, compliance costs are incurred under following headings:

Land clearance

Certified organic spice farmers are required to strictly adhere to a 'no burning' policy. By implication, organic farmers will incur additional labour costs, as compared to conventional farmers, in removal of plant residues and other trash for either onward processing into compost or final disposal. Violations of this requirement is however rampant in North Unguja's 'A District', as chilli farmers practice shifting cultivation. New areas of the coral rag are brought into cultivation at 2-3 year intervals. The difficulty of manually clearing coral rag underlies these violations.

Planting

Treated seed may not be used by organic farmers. Hence, a part of farmers' produce must be used as seed. The cost implication is that the organic farmer incurs the opportunity cost of not selling this part of the crop on the market at a premium price (less whatever the cost of purchasing treated seed would have been). In conversion situations, organic farmers could be compelled to establish their own nurseries or acquire planting materials from approved nurseries. Both moves are likely to entail significant costs as compared to conventional farmers, who would not be bound by this requirement

Fertilizer application

Inorganic fertilizer is not permitted so, if fertilizer is to be used, it must be organic. This can have the following cost implications:

- Necessity to make compost or collect farmyard manure, which might call for more labour.
- Organic fertilizer is more bulky than inorganic fertilizers thus it might be more costly to transport it.

Of course, these costs need to be balanced against the savings entailed by the non-purchase of inorganic fertilizer. However, the real compliance cost entailed here will be influenced by the extent to which use of organic fertilizer is prescribed by scheme operators, and by the extent to which fertilizer use is customary in conventional agriculture.

Pest and disease management

Certified organic farming forbids the use of chemical pesticides. This may have the following cost implications:

- Loss of farmers' produce due to pest attacks
- A need to prepare biological pesticides from fermented plant extracts like ginger, chillies, onions, garlic, neem, marigold (*mtegeta*), *Tephrozia spp* (*Utupa*), moringa (a legume) etc. This could relatively be more costly in terms of time, labour, and costs of raw materials when compared to conventional farming.

Harvesting

Under conventional spice production, harvesting (for example turmeric) may be extended over a six months period. However, in the organic schemes surveyed, farmers are given shorter specified harvesting periods (say 2-3 weeks) to enable homogeneous bulk post-harvest processing ready for export. In the first case, farmers may not need to hire labour for harvesting but in the second case they are compelled to hire labour to meet the harvest deadline. This extra labour is a compliance cost. It should be noted that this cost is not entailed by the adoption of organic farming practices as such, rather it is an add-on requirement by scheme operators.

Post-harvest handling

Organic farmers are allowed to carry out drying of some spices. However, exporters do not allow this for spices like turmeric, cardamom, black and white pepper, as these are very sensi-

tive. In situations where drying is allowed, farmers are expected to incur costs in purchasing drying membranes (tarpaulins), and polythene rolls for fencing processing sites. These materials are not usually used by conventional farmers.

Training

Farmer training is done either individually during on-farm inspections or in groups through arranged seminars/workshops. The latter has a cost implication for the farmer as he or she will have to forego labour time in training in terms of labour hours that would otherwise have been used working on the farm. On the other hand, this cost needs to be weighed against the possible benefits of training, in terms of increased productivity of capital and labour and – in the cases observed – income from training allowances.

Organic companies' compliance costs

- *Farmer registration* – Registration entails surveying the farm of each farmer on a given scheme and calculating their expected cash crop output.
- *Documentation/record-keeping* – In order to conform with certification requirements, the company records for each farmer their land preparation methods, training and extension received, internal inspection results and sales. The latter are checked against the estimates of output made during farmer registration, to prevent cases of fraud.
- *Internal inspection costs* – salary and overtime allowances for internal inspectors.
- *External inspection* – inspection fees rate per farmer, transport, and accommodation for IMO inspectors.
- *Training costs for farmers* – these are fees and allowances paid to participating farmers. Normally, there are 3 seminar sessions per year involving 50 farmers in each session.
- *Agency costs* – salary, allowances and transport costs for field representatives.
- *Office costs* – salary and wages for permanent and temporary staff and computer for record keeping.
- *Post-harvest processing*
 - costs of tools and instruments: tarpaulins, saucepans, trays, disinfectant (soap), firewood, packing materials.
 - labour costs: for boiling, first sorting, drying, second sorting, packaging, salaries and allowances for permanent and temporary processing staff.
 - warehouse costs: rent, annual inspection fees, fumigation fees, annual renovation and repairs.
 - sample analysis: testing fees and courier service charges.
- *Price premium* – however, the survey did not observe payment of price premiums to certified organic spice farmers in Tanzania.

7. Benefits of compliance

For farmers, four main benefits of compliance were reported during the surveys, viz:

- (i) Enhancing smallholders' ability to access high value markets (eg. EU) for their high value crops (spices). However, this benefit can be said to be realised only if a price premium is observable and if farmers are assured that their crop will be purchased. Neither of these seems to be the case. This concern was aired at one of the Tanzania Organic Agriculture Movement (TOAM) policy initiative forums, held at the Courtyard Hotel in Dar es Salaam in May 2006. At this forum, the response from the organic exporters present was that premium prices were things of the past. Market access, environmental conservation, and improved human health were stated instead as the major benefits of organic agriculture promotion.
- (ii) Besides the possible cash savings referred to in the discussion of costs above, organic farmers may benefit from increased productivity, as a result of higher yields. The latter may arise from greater use of yield-enhancing techniques such as composting, or from techniques adopted as a result of participation in farm training.
- (iii) A spill-over effect of safe products (spices in this case) being traded on the local market, contributing to improved health for locals. Probably more than 50% of produce from certified organic spice farmers ends on the local market.

The major benefits for scheme operators are market access to the EU, with its higher prices for spices; any organic premium received in addition to these prices; improved access to working and sometimes investment capital via European partners; access to donor support via projects like EPOPA; and improved public profile through association with more environmentally-friendly forms of production and trade.

8. Vertical coordination in the sector

According to Mighell and Jones (1963), the term vertical coordination describes the different ways in which vertical stages of production and marketing may be related. Some of the alternative means of coordination are the market/price system, vertical integration, contracting, and

cooperation singly or in combination. The term thus encompasses a continuum of possibilities from open market spot transactions at one end to full vertical integration at the other, including strategic alliances, joint ventures and different types of contracting (Hobbs and Young, 2001). Theoretically, these different coordination forms are seen as means of minimising the transaction costs facing particular supply chain actors in different situations.

Three coordination forms can be discerned in the Tanzanian spice industry namely, spot market transactions, contracting, and vertical integration. Section 4 of this paper profiled the whole range of supply chain actors and described the nature of the relationships that exist between them. It also illustrated the movement to a closely coordinated supply chain when farmers convert from traditional agriculture methods to certified organic production methods through producer: buyer contracting. This is important in two ways; first in making the organic chain more responsive to buyers' needs and secondly, in allowing the local smallholder farmers to conform to international agro-food standards.

The non-organic chain is characterized by spot market transactions, while contracting and vertical integration are absent. This chain serves local, regional (within Africa), and low value Asian export markets that have less differentiated and stringent consumer demands – thus making close chain coordination unimportant. Vertical integration has however surfaced in a special way in the spice value chain and is therefore discussed further below.

Full vertical integration occurs when a single firm carries out two or more consecutive stages of the production-to-distribution chain (Hobbs, 1996). Both backward and forward vertical integration are evident in the Tanzanian organic spice value chain. As already noted, the two are inspired by the need to guarantee crop supply volume reliability and to meet specific export market requirements. Backward vertical integration is mainly concerned with the former and is also a more recent phenomenon in the sector.

(I) BACKWARD VERTICAL INTEGRATION

In a bid to address incessant supply problems facing the spice sector, Tanzanian organic spice exporters are now integrating backwards by becoming producers whilst maintaining their original buyer roles. M/s TAZOP, for instance, has acquired 500 acres (with 300 more in the offing) in the newly inaugurated Kilindi district, formerly part of Muheza district. The firm's ambition is to source some of its supply requirements from its own farm and more importantly, to become a source of planting materials for various spice types for their registered farmers.

It is not clear whether this approach will also be adopted by other organic companies that are dealing in spices in Tanzania. M/s ZANGERME Enterprises (the first organic spice company to operate in Tanzania) had originally planned to carry out primary production in Zanzibar way back in 1991. Production was to be carried out jointly with *Jeshi la Kulinda Uchumi* over a 100 acre area. The plan did not materialize for undisclosed reasons.

Levels of organisation and financial strength are a major precondition for a company to move towards this type of vertical integration. For instance, much of the capital investment requirements for M/S TAZOP's project, especially in relation to farm machinery, are met by its international partner – M/s TAZOP Swiss (Khamis I. Mohamed, personal communication, 2006). In these regards, M/s TAZOP look better off than the other operating organic spice companies given its higher levels of sales, management resources, numbers of registered farmers and territorial coverage

(II) FORWARD VERTICAL INTEGRATION

This is exemplified in the structure of most existing organic spice export companies, whereby M/s TAZOP Ltd and M/s ZANGERME Ltd. maintain a foreign partner for both working capital augmentation and marketing abroad. It is unclear whether it applies also to the upcoming non-producer export company, M/s Global Africa (Arusha), or to the Morogoro-based producer-exporter of organic spices, Kimango farm.

The partnerships between the local companies and their allies abroad are institutionalised on the basis of share subscriptions rather than simply contracts. For instance, M/s TAZOP Swiss owns half of M/s TAZOP, while M/s ZANZGERME Germany owns over 60% of the shares of M/s ZANZGERME. Despite these arrangements, relationships between these partners have not always been beneficial to the local companies. M/s ZANGERME Zanzibar, for example, is said to have been brought to its knees over the last 2-3 years following opportunistic behaviour by its foreign partner (Bente Saidi, personal communication, 2006)¹¹. On account of working capital constraints, the company's exports declined from 32 containers (over 250 tons) in the late 1990s to nil in 2006. In this year the company managed only to sell to other exporters. However, according to company personnel, there is no possibility of operating without a foreign partner – not least because trust is said to be minimal in the international spice trade. Local companies are compelled to have foreign allies to closely follow up matters

¹¹ Bente Saidi is the Managing Director for M/s ZANZGERME Zanzibar.

abroad; otherwise losses will always be experienced. These kinds of partnerships will thus continue in future notwithstanding their ineffectiveness in some cases.

9. Concluding remarks

A belated recognition has occurred by the Tanzanian government, of spices' export potential. This has been accompanied by some efforts towards promotion of these crops. On the mainland, there have been campaigns to introduce high value vanilla and paprika in the spice producing districts. However, such production campaigns should go hand in hand with promotion of reliable markets for the would-be new production to avoid frustrations and losses such as those suffered by paprika farmers in Muheza in the 2003/04 season.

In the Isles, donor recommendations to further promote chillies and turmeric have been shelved. This is a serious shortcoming especially for a monocrop economy like Zanzibar. The coral rag area provides an environmental niche for chillies in Unguja. Moreover, it is the only spice crop that is suited to this type of terrain – which covers over a half of the island. It is high time that investments are directed into this sub-sector to realize the anticipated benefits for Zanzibar's economy.

Most spice exports in the non-organic chain go unrecorded as transactions are carried out informally. In addition, local sales (for both organic and non-organic chains) are not being recorded. This deficiency also has arguably negative effects. Prospective investors may be attracted if the industry's potential could be demonstrated more clearly.

Organic spices are currently produced for the European market. Initially, organic farmers were able to command significant benefits from premium prices. However, premium prices for organic spices are waning. Conventional buyers offer higher prices than their organic counterparts at times. In a situation where there are so few active exporters and where the local market for organic spices is very thin, the sustainability of the organic chain becomes problematic. Concerted efforts are required from all stakeholders (public, private, local, and foreign) to support development of the local market for organic spices, if production is to be sustained in the absence of an export price premium. The health benefits from organic spice consumption should be publicised locally to reduce dependence on producing only for export markets and for premium earnings.

Stronger regulation is called for in the area of compliance with safety/quality standards. District-level and village-level institutions should be able to enforce by-laws that would prohibit harvesting of immature crop. This should be accompanied by introducing an officially announced buying season start date. Arguably, the same institutions should ensure conformity to contracts between farmers and organic companies. Organic companies often approach farmers via village and district local government, meaning that the latter should be under an obligation to protect farmers' interests in event of contracts being broken.

Finally, what farmers are saying is also important and should be carefully listened to. To brand farmer opinions as mere complaints with little content will only exacerbate the sub-sector's supply side problems. Farmers deserve protection from unscrupulous buyers just as is happening now with cashew farmers in southern Tanzania. Ground rules (both formal and informal) governing production, exchange and distribution are part of the institutional strengthening that is badly needed in the industry. Exploitative marketing should be discouraged by helping farmers to form associations and cooperatives to enhance their collective bargaining position.

There is a strong need to differentiate between control and regulation. The sub-sector should be properly regulated to safeguard interests of all stakeholders especially the vulnerable groups like farmers. Failure to enforce contracts is an institutional weakness and should be addressed as already discussed above.

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