Draft report

Analysis of 5 value chains – Yemen

(Fish, Honey, Coffee, Wheat and Qat)

Client: World Bank, Rural Development Team

Consultants: Small Micro Enterprise Promotion Service (SMEPS)

The Royal Tropical Institute (KIT)

July, 2009

Introduction

Scope and objectives

This report presents the findings of a research into the performance of five value chains in Yemen: qat, coffee, fish, honey and wheat.

The goal of the research is to understand the differences in performance across the five value chains, and to provide recommendations for policy interventions. The underlying hypothesis is that the qat and fish chains are dynamic and market-oriented, while the coffee, wheat and honey chains seem incapable to respond to the high prices in the market. To shed light on this puzzle, the research sets out to assess market performance and financial performance at each stage of the five value chains, from farmer to midstream agents to final consumer.

Specific issues addressed by the research are the following:

- Mapping of the chain actors and product flow
- Profiling of key chain actors and chain relations
- Analysis of constraints and opportunities as viewed by the chain actors
- Identification of finance flows, information flows, quality management, and chain service providers, with analysis of possible gaps/constraints
- Constraints in regulatory environment and physical infrastructure
- Cost/price formation and value-adding along the chain: variable costs, revenue, gross income, gross margin, added value, value shares
- Market performance of the chain: evolution in supply and demand, consumer satisfaction, the effects of im-/exports, (unmet) market opportunities
- Strategies and possible constraints for chain upgrading (products, processes, functions)

Background

The World Bank Agricultural and Rural Development Team as part of its ongoing work on, agricultural development in Yemen - Pathways out of rural poverty study - have commissioned this study to assist the Ministry of Planning and International Cooperation (MOPIC) of Yemen to assess the efficiency and competitiveness of the selected value chains.

The study has been conducted by the Small Micro Enterprise Promotion Service (SMEPS) from Yemen in cooperation with the Royal Tropical Institute (KIT) from the Netherlands:

1. The Small Micro Enterprise Promotion Service (SMEPS) is a young SME development agency established as a subsidiary of the Yemen Social Fund for Development in 2006. SMEPS through the market approach facilitates business development services to SMEs and engages in value chain development where by working closely with the private sector SMEPS supports linkages to markets for producer groups. SMEPS overall efforts are geared towards stimulating the progressive diversification of the Yemeni SME sector through innovative approaches. As such SMEPS introduced the value chain development approach to Yemen, and is investing in building local knowledge on a plethora of value chains and development approaches.
2. The Royal Tropical Institute (KIT) is a knowledge centre in the field of international sustainable development. Founded in 1910 in Amsterdam, the Netherlands, KIT develops knowledge and advisory services to contribute to sustainable development, poverty alleviation, and cultural preservation and exchange. KIT cooperates closely with the private sector in developing solutions to rural poverty through pro-poor business ventures and inclusive value chains. As an expertise centre, KIT generates and disseminates knowledge, methods and models for pro-poor value chain development. As facilitator of business development, KIT matches business partners and investors, builds capacity of smallholder producers, facilitates chain-wide learning and innovation, and structures, capitalizes and implements pro-poor business models.

Methodology

The research was conducted from November 2008 to June 2009. It proceeded as follows:

1. Desk research: the consultants collected and studied existing literature and policy documents on the five value chains
2. Methodology design: the consultants designed tailor-made templates for data collection in the field. The templates covered (a) sub-sector statistics, (b) mapping of the value chain; (c) profiling of chain actors and chain relations; (d) prices, margins and value shares in the chain; (e) quality management and consumer focus.

3. Methodology validation: the consultants interviewed chain actors and key informants to test and refine the data templates.
4. Fieldwork: the consultants interviewed 23 key informants and 144 actors from the value chains.
5. Tabulation and analysis: the consultants analyzed the collected data and entered the data into the templates.
6. Stakeholder workshops: the consultants presented the research findings in a series of five workshops with local stakeholders. Each workshop was attended by 10 to 15 representatives from the value chain (farmers, traders, exporters), government agencies (Ministries, research agencies), and branch organizations (exporters, farmers).
7. Reporting: the consultants drafted the report with key findings from the research and the workshops. The consultants introduce short cases studies from value chain representatives (farmers, traders, exporters) in to the main body of the report.
8. Policy workshop: the consultants presented and discussed the research outcomes and policy recommendation in a workshop with MOPIC and the World Bank.

Field work and data construction

Field interviews were in-depth and in some cases lasted for over 90 minutes. The approach was semi-structured and took the form of a conversation rather than a questionnaire. The data gathered during the interview was noted in field template sheets immediately after the interview from notes jotted down during discussion. Entire chain data from all interviews was then tabulated on to a master template for each chain. At this stage averages were worked out and qualitative data was summarized. Chain selection for each sub-sector is described as follows:

Qat: The study considered a long chain and a short chain. The long chain was Aden (market) and Dha'laa (production). The short chain was Sana'a district (production) and San'a city (market).

Wheat: Field research focused entirely on irrigated wheat production. The production centres selected were Wadi Hadramout, and Mareb because of the relatively high volume of irrigated production in both these areas.

Honey: At the production level 4 regions were researched – Hadramout, Abyan, Hodiedah, and Emran. Hadramout was selected due to its history and depth in Beekeeping, its high production of Seder (high grade honey) and hadrami access to the lucrative gulf market. Abyan was selected because of its higher concentration of modern beehives. Hodiedah on the other hand incorporates restaurants into the honey chain as a major distribution outlet where honey is embedded in the meal service. And lastly, Emran was selected due to the regions reputation for producing high quality Seder honey. The vast majority of the 75000 beekeepers own very few beehives, with the national average being 16 beehives per beekeeper. For this study, consultants interviewed beekeepers that were more commercially involved in the chain possessing between 50 and 200 beehives.

Fish: The fish component of the study focused entirely on the domestic market. The field research followed product movement from the major production hubs such as Mukalla (and nearby coast towns) and Hodiedah to in-bound wholesale/retail markets in Sana'a including restaurants. Fishermen interviewed operated from the smaller artisan boat (Gharib) as the larger boats (habri) service the export market.

Coffee: Three regions were selected. Yaffee in the south of the country located in both Lahaj and northern Abyan were the product flow differs considerably to other producing regions. The field team's suspicions that the Yaffee chain was shorter and heading largely towards the Saudi market was confirmed. Haraz (Ismaeli) located west of Sana'a was selected due to its reputation for superior quality, and high demand. The third area Talook (Taiz) offered a very typical producer group of small holder farmers and Talook producers are uniquely represented by a women's farmer association.

Structure of the report

	Section	Content
1	Introduction	Scope and background of the research
2	Synthesis	Key findings and recommendations (across sectors)
3	Fish value chain	Findings and policy recommendations for fish
4	Qat value chain	Findings and policy recommendations for qat
5	Coffee value chain	Findings and policy recommendations for coffee
6	Honey value chain	Findings and policy recommendations for honey
7	Wheat value chain	Findings and policy recommendations for wheat
8	Annex 1: value chain concepts	Key concepts and terms of value chain analysis

Further information

Small Micro Enterprise Promotion Service (SMEPS)

Subsidiary of the Social Fund for Development

Sana'a, Yemen

Tel: 009671 450910/11

Fax: 009671 450912

Web site: www.smeps.org

Synthesis

I. Key findings and recommendations per sub-sector

1. The qat sub-sector shows gradual and consistent growth in production volume and market demand. The qat chain is a showcase example of a demand-driven, well-coordinated value chain. Lead times are very short (1 day), the chain actors are specialized, and the chain features long-term business relations (8-12 years). The farmers get most of the added value in the chain, but traders operate with sound gross margins. The chain actors provide credit to one another and coordinate closely on quality grades and production volumes. The quality grading system is consistently applied from farmer to consumer, and all chain actors are well aware of consumer demands. All in all, the experience in the qat chain may provide for a culturally-embedded model of value chain development in Yemen. Key points for intervention are (a) investments in irrigation systems and training on chemical inputs and (b) support the diversification from qat into other business activities.

2. The fish sub-sector shows impressive growth since 2000, followed by decline since 2005. Export volumes are still increasing, but total export value is declining, due to a sharp drop in average export prices. The domestic market is in constant decline since 2005, as well as the average catch per fisherman. The fish chain features short lead times (14 hours) and long-term business relations (10-20 years). The fishermen associations are the dominant chain actor, but they operate at low margins. The fish value chain is a supply-driven bulk business. The chain actors are unaware of consumer expectations, and they do not know how to respond to market demand (more YFT, less catfish). The chain actors think in terms of volume rather than differentiation and value adding. Therefore, the key challenge is to make the fish chain more client-oriented and market-responsive. In absence of an effectively enforced policy framework, the sector had "predatory" characteristics. There seems to be over-fishing and declining stocks in certain species, though there are no statistics available. The sector seems to be on verge of decline. Key points of intervention are (a) capacity-building of the fishermen associations, (b) investment in value-adding; and (c) implementation of an effective monitoring and regulating system.

3. The honey sector is the smallest sub-sector but the most successful in terms of growth. It boomed between 2000 and 2005, but seems to be stagnating in recent years: production remains stable and exports are going down. Limiting factors are access to modern beehives and availability of natural nutrition for the bees (most notably Seder trees). The honey chain is marked by long-term cooperation, close coordination, and mutual credit flows between the chain actors. The chain actors are highly specialized and all are SMEs. There is a sophisticated quality grading system that is consistently applied from beekeeper to final consumer. All chain actors are aware of quality indicators, and there the quality grading system goes with clear price incentives. Nevertheless, chain actors express deep concern about the integrity of Yemeni honey and consumer

confidence. They are working towards the implementation of a quality certification system. Key points of intervention are (a) support the chain actors in implementing a quality certification system; (b) investments in infrastructure (Seder trees and modern beehives); (c) packaging and branding of Yemeni honey.

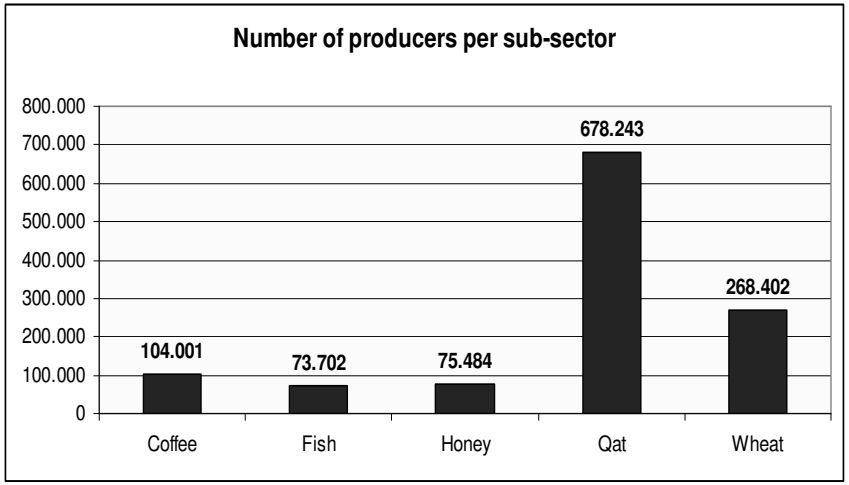
4. Recovering from a decline in early 2000s, the coffee sub-sector reached a production peak in 2008 with a record farm output, production area, number of farmers and yields. In sharp contrast with production, market performance is declining since 2005. Exports are going down, and more and more coffee does not even enter formal market channels. The coffee chain features small farmers and retailers, together with large processors and exporters. Farmers get the highest share of the consumer value. The operating margins of the processors are squeezed due to the value losses related to *qesher* and *duka*. Lead times are long, because the actors do not attach value to freshness of the product. Collectors, processors and exporters are highly specialized in coffee, while the other chain actors maintain important other business lines. Business relations are long-term (10-37 years) but farmers are less integrated into long-term relations. Credit flows among chain actors are limited, as well as their communication. There is an elaborate system for quality grading, depending primarily on origin, but it is not consistently applied throughout the value chain. At each stage of the value chain, the number, names and proportion of the quality grades change. Moreover, each region of Yemen has its own grading system. Hence, the quality grading system does not have the desired effect: the standardization, improvement and rewarding of Yemeni coffee quality. Key points for intervention are: (a) implement effective and consistent systems for quality grading/certification; (b) exploit opportunities for origin-branding; and (c) train and support the farmers to become specialized, fully-fledged business partners in the coffee chain

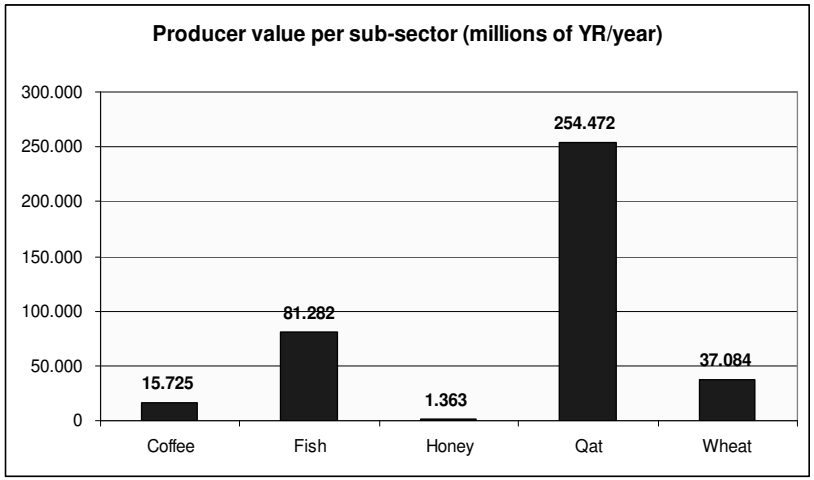
5. The wheat sub-sector is, like in many countries around the world, strongly impacted by government policies and the desire for national self-sufficiency. After a dip in the early 2000s, local wheat production is showing significant growth in recent years, in response to significant government support to local wheat production. However, domestic wheat production is still insignificant in relation to domestic market demand (<10%). Import prices for wheat are well below the domestic farm gate price. This suggests a lack of competitiveness of Yemeni wheat farmers. However, local wheat production cannot be compared directly with wheat imports, due to the different nature of local wheat varieties. Imported wheat is a low-price bulk product with low-protein content (bought from Australia, the USA and Syria). Local wheat varieties are rich in protein (but low in yields) and cater for specific market segments: (a) Yemeni consumers inside the country or (b) in the Gulf Region who attach value to the distinctive taste of Yemeni wheat, especially during the months of Ramadan; more recently (March 2009), the Government purchased wheat from farmers – it is still not clear how the government intends to market this wheat. The distinctive nature of local wheat varieties can be appreciated from the fact that they are sold in spice retail outlets rather than in ordinary supermarkets or grocery shops. The imported-wheat chain features a variety of very large and very small companies. The importers are huge enterprises reaching a turnover of more than hundred millions US dollars,

while the retailers' turnover from wheat is only a few thousand US dollars. The importers, bakers and small millers are highly specialized, while the agents, wholesalers and retailers maintain many other business lines. By contrast, the local-wheat chain features only SMEs. Farmers, wholesalers and retailers reach only modest turnover, even considering their other business lines. The imported-wheat chain features long-term business relations, from 7 years up to 18 years. Supplier credit is very common and can take up to 180 days. By contrast, the local-wheat chain features short-term business relations. There seems to be a spot market, where farmers and traders sell to whoever offers the best deal. Information exchange is very limited. Only retailers have long-term relations with their customers, which indicates the speciality character of the local Yemeni wheat. Key points for intervention are (a) implement a market-coherent policy of cheap bulk imports combined with local production of high-value speciality wheats; (b) lift the ban on exports of local wheat, and (c) continue to invest in technology development for local wheat production.

II. Relative importance of the sub-sectors

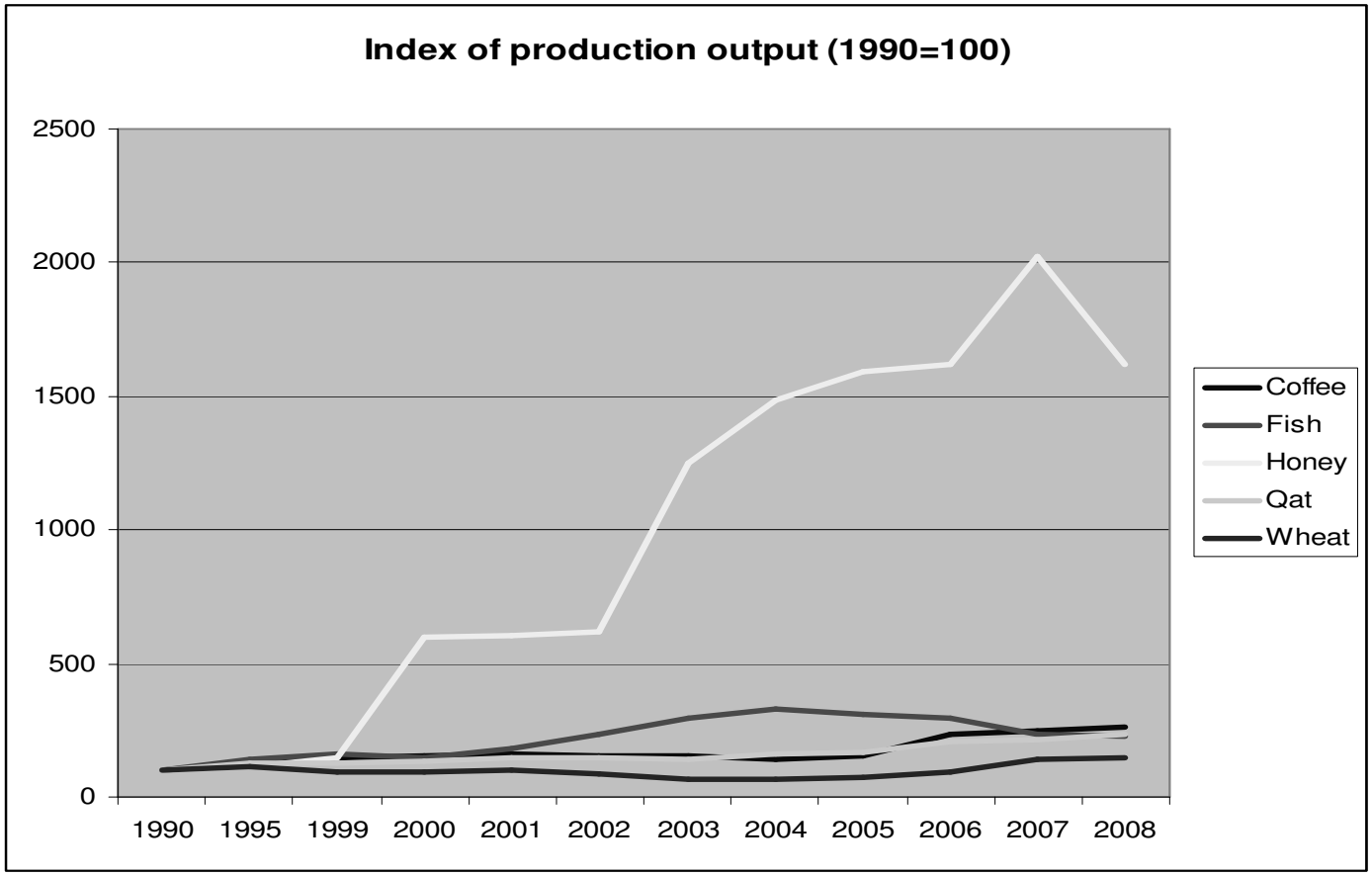
Looking at the number of producers and the value of their output, the qat sector is by far the most important business activity of all five value chains. It is followed by fish and wheat, then coffee and honey.





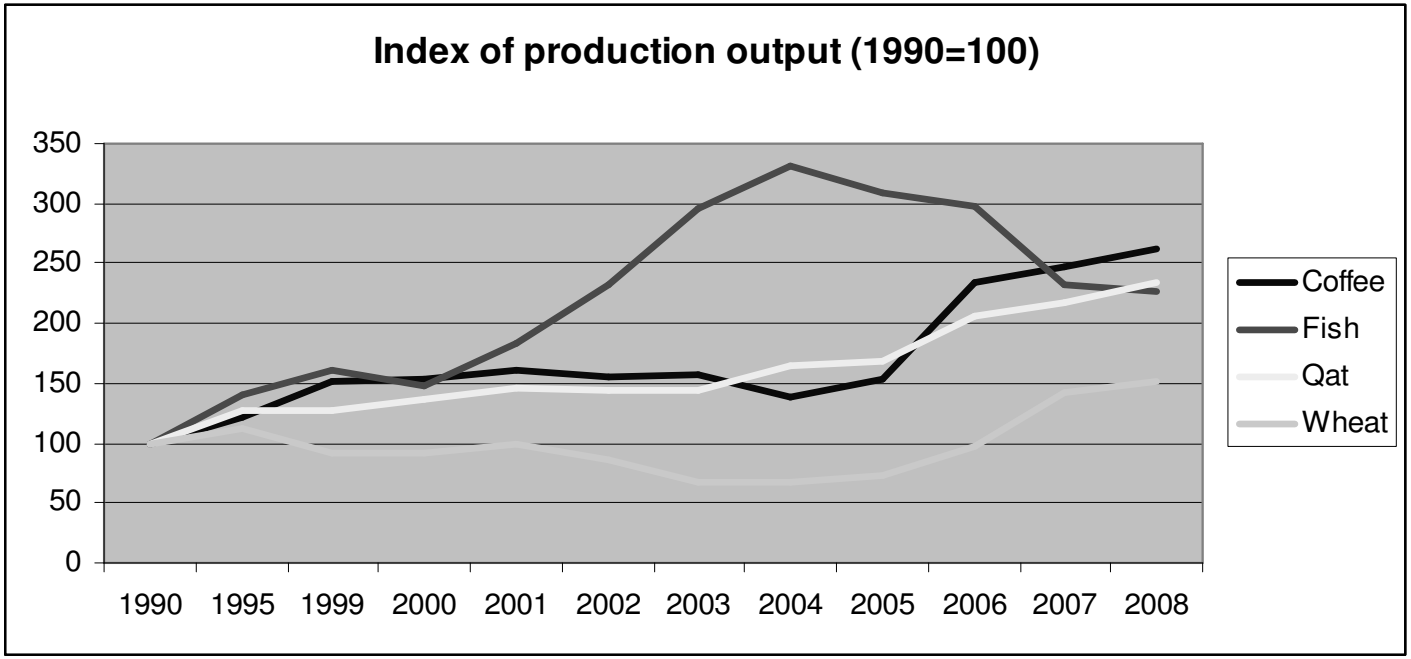
III. Production performance across sub-sectors

Looking at growth in production, the honey sub-sector is by far the most successful value chain, outperforming any other value chain. Coffee, fish and qat show similar overall growth rates, while wheat is a clear under-performer.



When leaving the honey sector out of consideration, the performance variations of the other sub-sectors become clearer. Fish has grown impressively since 1999, but is in decline since 2004. Coffee experienced gradual growth in the 1990s, stagnation in

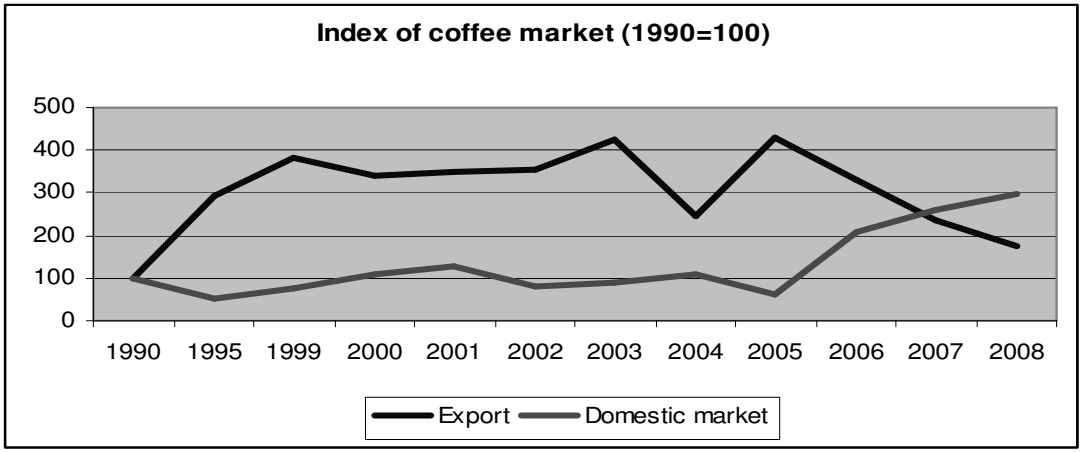
2000-2005, but is going up in recent years. Qat is in constant gradual growth over the entire period. Wheat has experienced crisis from 2001 to 2005, but is going up since then.

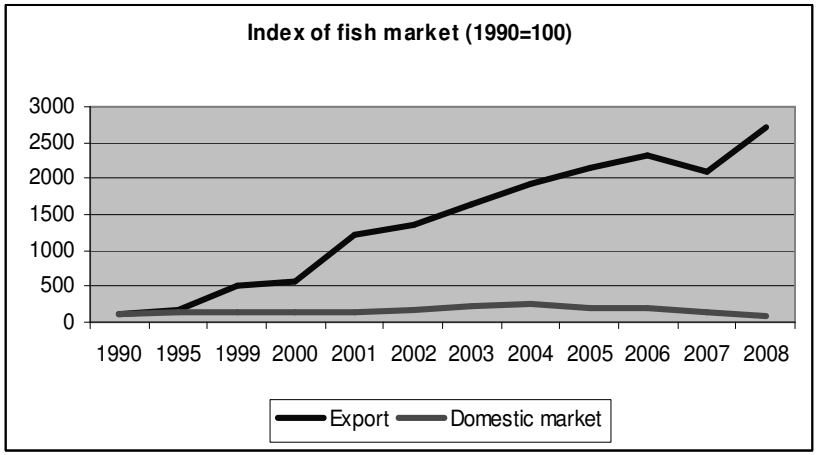


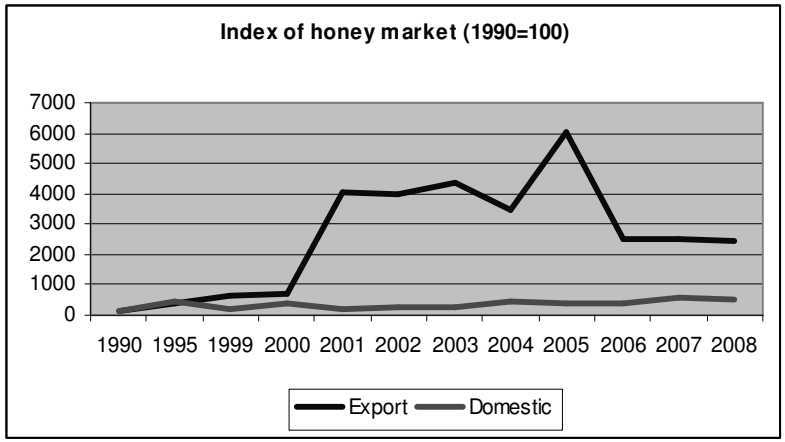
IV. Market performance across sub-sectors

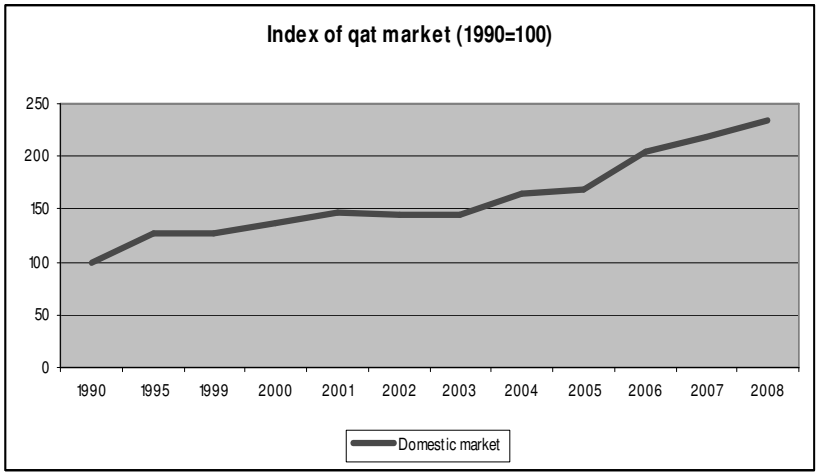
Looking at market growth (tons, not value!), the qat sub-sector is the most successful value chain, showing consistent growth rates over the years. The other value chains give the following picture:

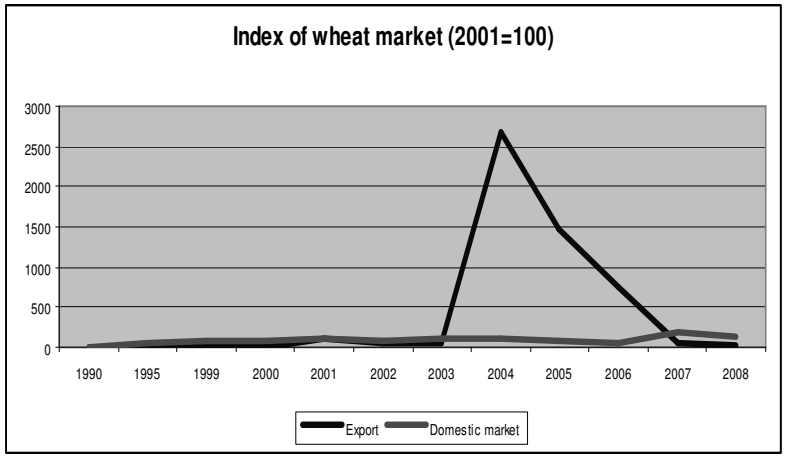
- The coffee sub-sector shows increase in exports in the 1990s, followed by stagnation and decline in recent years. The domestic market for coffee is stable in the 1990s and early 2000s, and has boomed since 2005.
- Fish shows spectacular and constant increase in exports, but decline in domestic market since 2004. Moreover, while the export volume has grown, the export value has declined in recent years due to lower prices.
- Honey shows spectacular but irregular growth in exports, and gradual growth in domestic market, especially in recent years.
- Wheat shows gradual growth in the domestic market, and a short-lived boom in exports between 2003 and 2006.


Index of coffee market (1990=100)
500
400
300
200
100
0
1990 1995 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Export
Domestic market

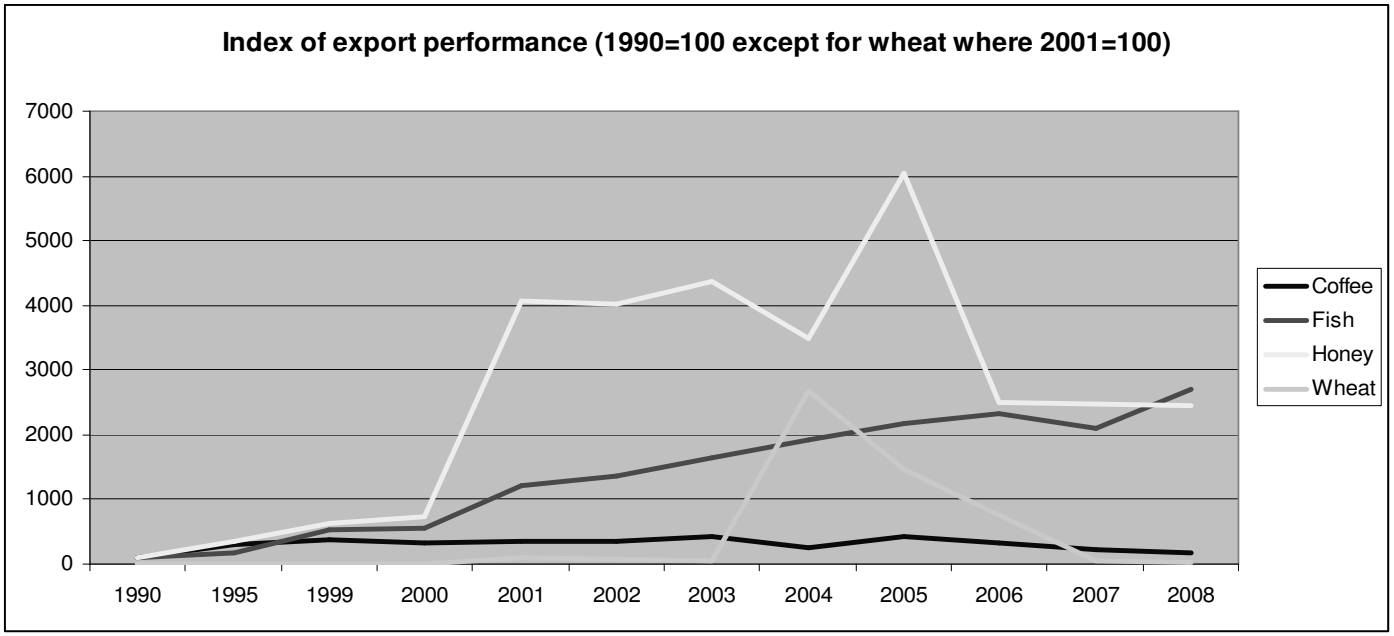

Index of fish market (1990=100)
3000
2500
2000
1500
1000
500
0
1990 1995 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Export
Domestic market


Index of honey market (1990=100)
7000
6000
5000
4000
3000
2000
1000
0
1990 1995 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Export
Domestic

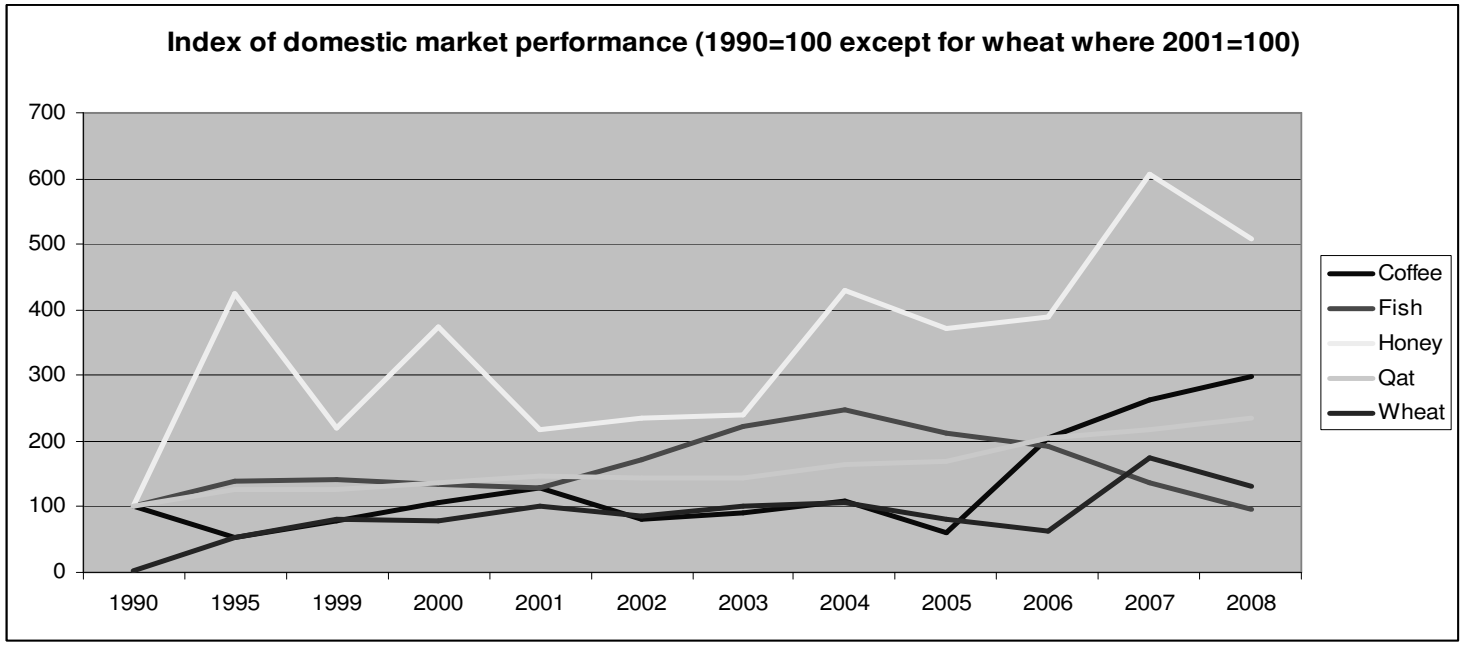




Looking at exports only, fish and honey shows similar growth rates in export volume. Fish shows constant growth, while honey shows fluctuations. Exports of coffee and wheat are in decline in recent years.



Looking at the domestic market only, honey shows strongest growth, albeit irregular. Second to honey is coffee, then follow qat, wheat and fish. Coffee shows strong growth in recent years. Qat shows constant growth. Fish shows strong growth in early years but decline since 2004. Wheat shows stagnation in early years followed by growth since 2006.


Index of domestic market performance (1990=100 except for wheat where 2001=100)
700
600
500
400
300
200
100
0
1990
1995
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Coffee
Fish
Honey
Qat
Wheat

V. Chain performance across sub-sectors

This section presents a cross-sector analysis of a number of factors that may drive value chain performance.

1. **Producer organization:** Only in wheat and fish there are significant producer associations[1]. These are the two sub-sectors that are most subject to public policy support. This is probably no coincidence. It suggests that the prime motive for Yemeni producers to organize themselves is to get access to the services of public agencies. Looking across the sub-sectors, there is no evidence that producer association is key to successful integration of smallholder producers in the value chain, nor that producer association is key to chain performance. On the contrary, honey and qat, where producers are unorganized, are the best performing value chains in terms of market- and production growth. This finding challenges the classic view that producers should be organized in cooperatives for successful participation in modern markets. Perhaps other models of chain organization, where midstream agents link unorganized farmers to the market, are more effective in the Yemeni context.

2. **Specialization:** The value chains in the different sub-sectors show a similar pattern in terms of specialization. Most market agents (traders, wholesalers, exporters) are highly specialized, deriving 80% to 100% of their income from the product, while farmers tend to be diversified, deriving only 50% to 70% of their income from a particular product. From a farmers' perspective this is logical considering the need for risk diversification in agriculture. Given its uniform pattern across the sub-sectors, specialization cannot be regarded as factor explaining the differences in chain performance. This does, of course, not imply that increased specialization of producers would not result in improved chain performance. In all sub-sectors, it is likely that more specialization will add business and consumer value.

3. **Turnover and value shares:** The two best performing value chains, honey and qat, are characterized by the fact that the midstream chain agents (traders, wholesalers) are dominant in terms of yearly turnover and, at the same time, appropriate fair shares of the total consumer value created in the value chain (between 9% and 20%). In other words, in the most successful value chain, the midstream chain agents are of significant size with sound profitability. The less successful value chains, coffee and fish, show a different picture. In fish, the fishermen associations are dominant in terms of turnover, while appropriating only low value shares (2% to 5%). In coffee, the processors-cum-exporters are dominant in terms of turnover, but they suffer from a margin squeeze (due to the loss of product value related to *qesher* and *duka*). Hence, it can be

[1] Associations are noted in both coffee and honey, however their activities are limited and do not involve purchasing, marketing or input supply provisions to producers. In honey, the beekeepers association's primarily role is on training its members and publications. Coffee producers (including those associated in formal groups) continue to sell individually. In most cases, coffee associations play a temporary role, such as when representing an area for government support on water irrigation.

concluded that chain performance improves, when midstream chain agents are well-established businesses and able to appropriate fair value shares. This finding suggests that it is legitimate to focus public policy toward supporting midstream chain agents in driving their performance. Such development would create spin-off benefits for producers and consumers in the value chain.

4. **Process integration:** The sub-sectors show wide diversity in terms of process integration in the value chain (that is, the degree of alignment between market demand and production processes). Qat and fish have short lead times (8 hours and 14 hours respectively), because freshness of the product is key to business value. But this does not imply that both value chains have high process integration. In fish significant business value is lost due to the lack of market orientation of the chain actors: entire species of fish are wasted because no market is developed for it; and export prices are consistently decreasing in recent years due to the faulty distribution system. In qat, however, production is fully integrated with market demand, as evidenced by the planned harvesting process, the producer-led development of new varieties in response to changing consumer demands, and the smooth and highly efficient transport system. In honey and coffee, lead times are not significant for business value. But honey shows high process integration: production and trading are closely coordinated and responsive to market developments and consumer concerns. In coffee, however, production and trading follow conflicting market signals: while the market rewards freshness, grading and traceability, production shows long storage and mixing of qualities and origins. Hence, it can be concluded that (a) short lead times do not lead to high process integration, and (b) the most successful value chain, honey and qat, show the best alignment between market and production.

5. **Chain relations:** In all sub-sectors long-term interpersonal relations are key to the operations in the value chain. In fish business relations between producers, traders and wholesalers are maintained on average between 12 and 20 years; in qat around 12 years; in coffee between 8 and 37 years; and in honey 5 years. Though honey is significantly lower, it should be noted that it was only 5 years ago that the sector became truly market-oriented, hence, the business relations have been maintained since the beginnings. In all sub-sector the business partners share information, though only in qat and honey there is effective coordination between market demand and production planning (as noticed above). Also, in all sub-sector except fish, there is trade credit between producers, traders and retailers. All in all, it can be concluded that in the Yemeni context interpersonal business relations are key to business performance.

6. **Quality management:** All sub-sectors have quality grading systems in place but to a different degree of success. The fish value chain is strongly focuses on freshness; the fish chain actors claim that 90% of the fish in the market is fresh, though in the case of export this proportion is much lower, thereby leading to low prices. In qat freshness is vital, together with a range of other consumer demands like the shape, colour and texture of the leaf and softness of the branch. The quality management system is consistently and rigorously applied throughout the entire qat value chain, and price incentives are

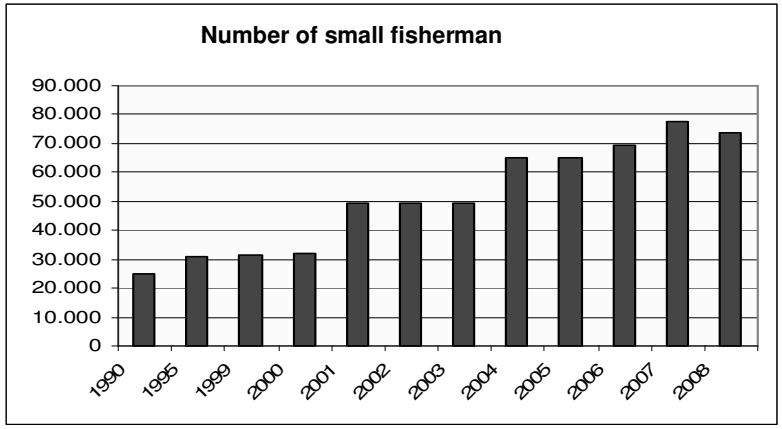
attached to the various quality grades. In the case of coffee, there is an elaborate quality grading system, primarily related to the origin of the beans. The coffee chain actors are all aware of quality indicators, the price differential, and the factors that influence product quality. However, there is not a clearly defined quality grading system that is consistently applied from farmer to consumer. At each stage of the coffee value chain, the number, names and proportion of the quality grades change. In honey there is a clearly defined quality grading system that is consistently applied from beekeeper to final consumer. The quality grading system is accompanied with clear price incentives. Yet in spite of the sophisticated quality grading system, the chain actors express concerns about cheating through mixing with imported honey. They mention that consumers might be loosing confidence in the quality of Yemeni honey. Therefore they attach great importance to the implementation of a quality certification system that guarantees the integrity and traceability of the honey. All in all, it can be concluded that the most successful value chain, qat and honey, show the most robust quality systems with clear price incentives and full alignment between production and market. The other two sub-sectors, fish and coffee, show a quality management system that is inconsistent.

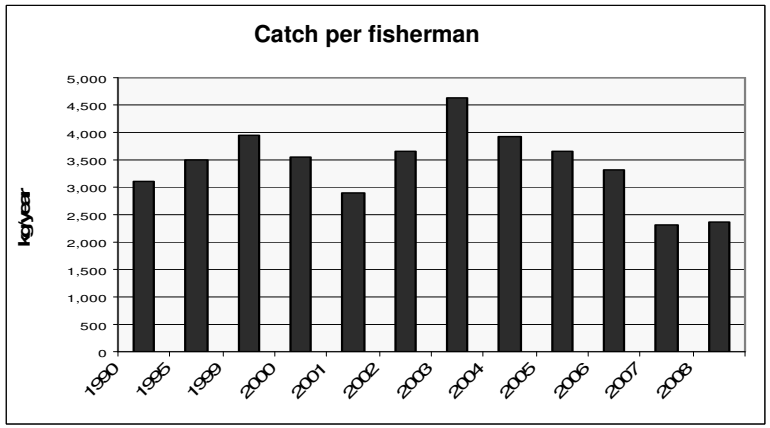
7. **Finance:** In all sub-sectors except fish there are important trade credit flows between producers, traders and retailers. In all sub-sectors except coffee the midstream chain agents have access to bank loans. Only in fish the producers have access to bank loans. Hence, in all sub-sectors there is significant opportunity to improve chain performance through the delivery of financial services at the various stages of the value chain.

Report fish value chain

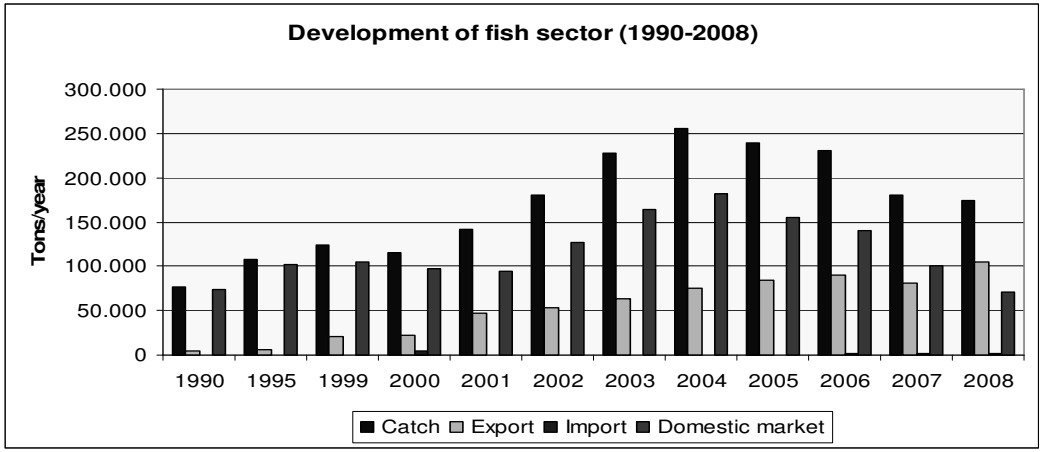
A. Sector performance

1. The number of fishermen is increasing steadily, but the catch per fisherman is going down since 2003.





2. Total catch is going down since 2004, but exports are still increasing, while imports are insignificant. Therefore there is increasing pressure on the domestic market. There are no statistics available on domestic market prices and demand, but traders are complaining about rising prices and competition from exporters on the auctions.



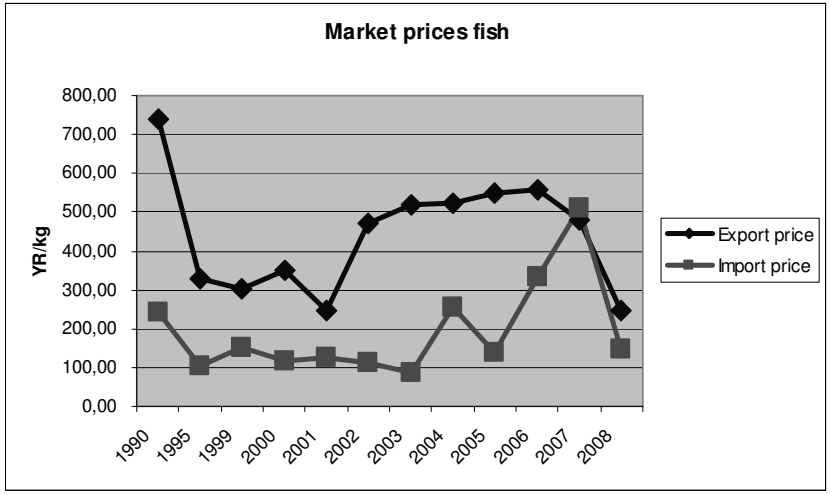
3. The best fish are exported such as Yellow Fin Tuna (YFT), Shrimp, Lobster, and Cuttlefish. The domestic market is left with the remainders: small fish of low weight. Mostly, Yemeni consumers demand only for a few fish species such as (YFT, Longtail, Kawakawa, Skipjack, King Fish & some white fish species as well). Other fish that are caught have less demand in the domestic market although they are produced in commercial quantities such as Catfish (The Ministry of Fish Wealth (MFW) assures that it considers Catfish as the highest stock of demersal fish species in Yemen).

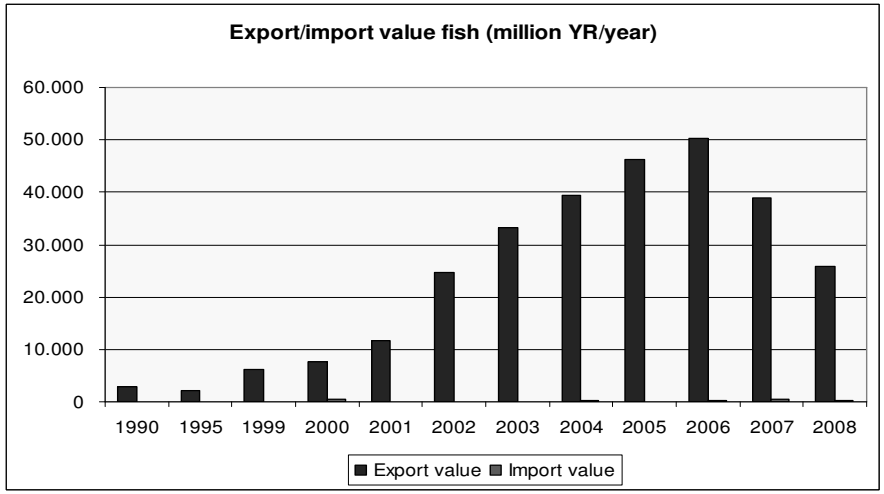
> **Retailer Buliali Fish Market, Sana'a**: *"local traders get what exporters do not want, at the same time fish size that we get in Sana'a is getting smaller I used to sell Dayrak (King fish) which was around 5kg we cut it into many slices and now we get Dayrak which is just 250g, try cutting this and selling it. How can you make a profit from it? Exporters get first choice on fish catch."*

4. Average export prices are declining in recent years despite the increasing export volume. The total export value is declining. Reports from exporters confirm this where more recently exports prices are nearing domestic prices. Exporters provide many reasons for the fall in export prices and top of their list is pertinent to the current on-going economic crises which they claim to have been feeling since 2007. However exporters are selling far less fresh fish to Spain and France in place of frozen to S.E. Asia (this is true even for those with the lucrative EU export license). This is due to the high risk associated with fresh fish against poor aviation infrastructure. In addition, it is reported 50% of exports end-up in Saudi Arabia, the quality of this fish is inferior fetching low prices (means of transportation are fiberglass vans carrying fish and ice where the ratio is no way near the recommended of 1 kilo of ice for every kilo of fish). As a result of falls in export prices, some exporters are seeking to develop the domestic market.

> **Large Exporter with EU certification based in Mukalla**: *"I don't want to mention names but I and other export companies have sold on many occasions' good fish below local prices. We are not getting the prices we used to for export. Our company is now investing in developing the local market. I don't believe in fresh fish arriving in Sana'a, it's*

not true when they say it is fresh. We are planning to open 100 small frozen fish outlets in Yemen. We are looking for good high street locations and we have modern glass top freezes with back-up batteries. We have opened the first shop in Sana'a, in Hadda zone and business is doing good."



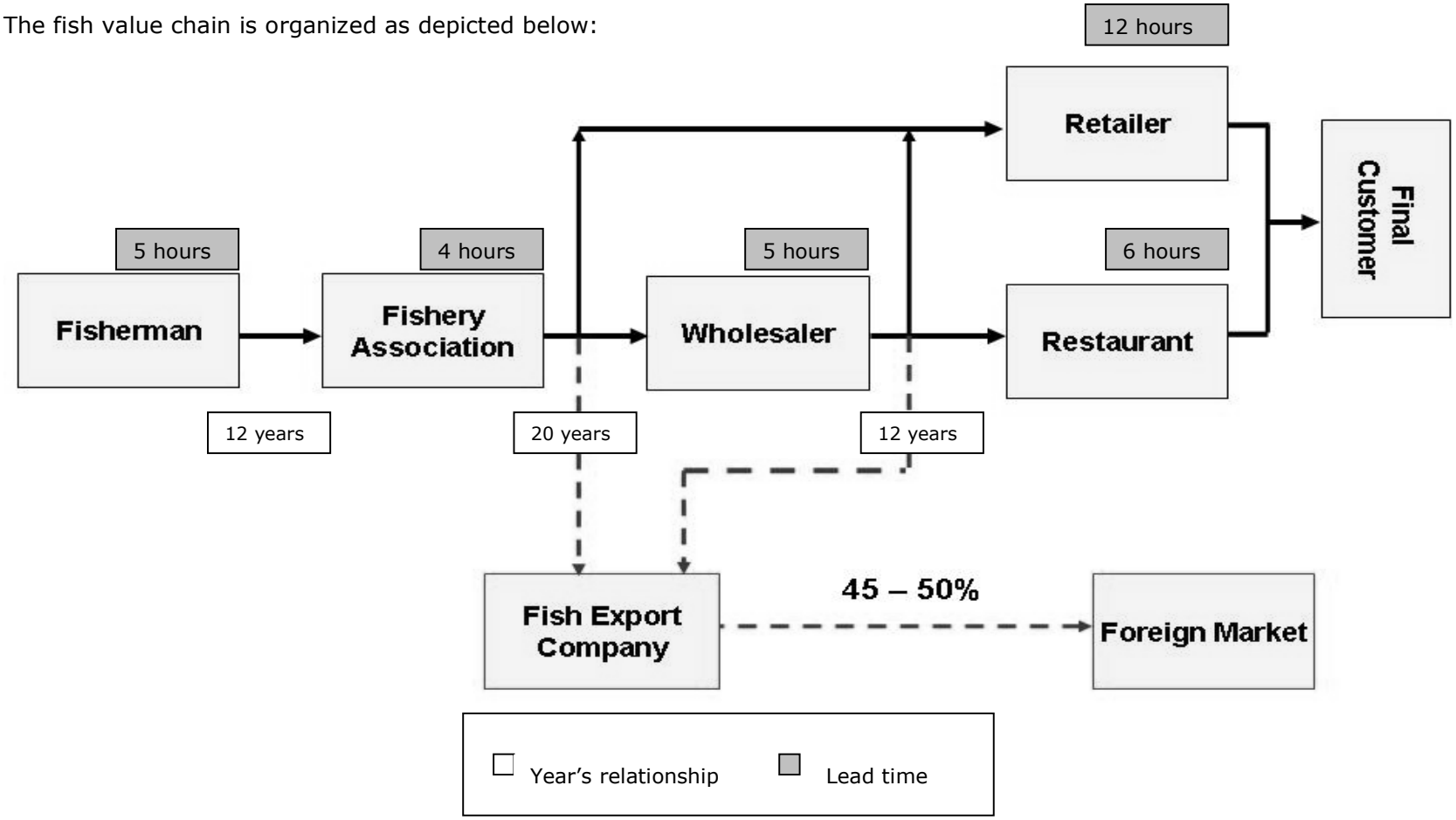


B. The value chain:

5. This study focused entirely on the domestic fish chain. The study mapped the relationships between the chain actors beginning at the fisherman and following through to markets (including restaurants) in fishing towns and the capital Sana'a. As the study focused on the domestic market those fishermen interviewed were small boat holders (gharib) and not owners of the larger habri boat which tend to serve the export market. Wholesalers and associations interviewed present an insight in to the growth of the fiber-glass vans (wholesalers). As an example, it was mentioned in Mukalla by several traders and associations that today there are 1000 of these fiber-glass vans compared to 300 10 years ago. This appears to mirror the growth in number of fishermen which is also 3 fold.

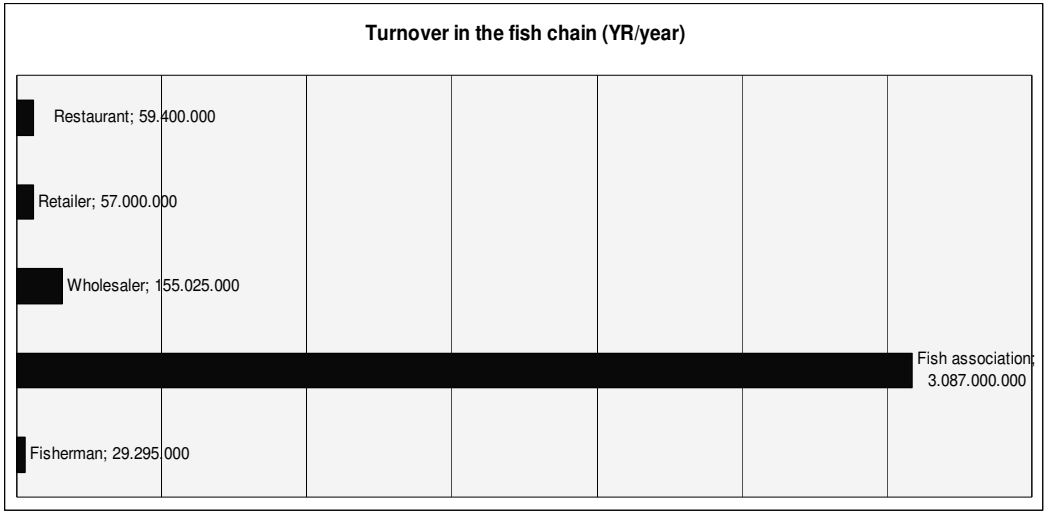
   Wholesalers may also act as retailers, and in some cases restaurants source from wholesalers at the fish market. In other cases wholesalers on vans approach restaurants directly.

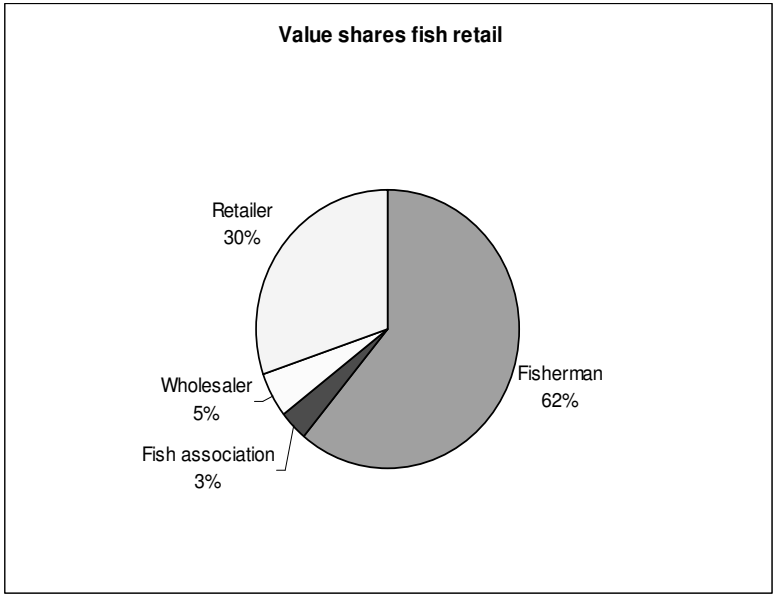
The fish value chain is organized as depicted below:

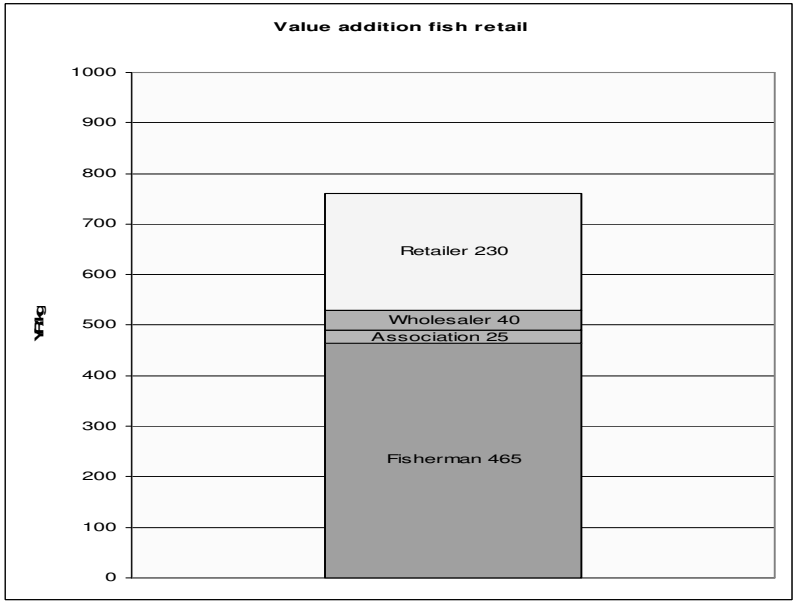


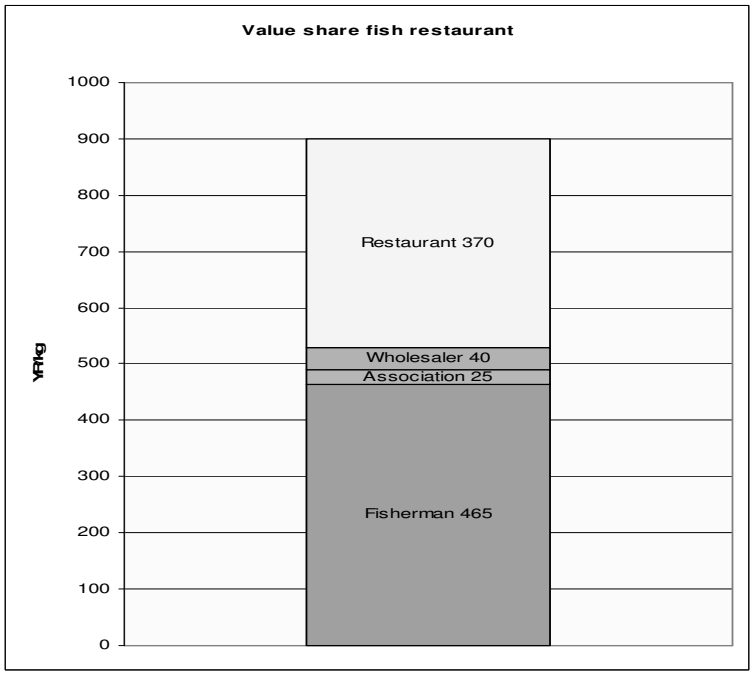
6. The fishermen associations are the dominant player in the fish value chain. In terms of turnover they are far larger than any other actor in the chain. However, the fishermen associations operate at very low operating margins. Together with the wholesalers, they suffer from a "midstream margin squeeze". Most of the value added ends up with the fishermen and with the retailer/restaurant. But with the associations degree of dominance in the chain with the right skills their margins could be much higher. One association interviewed was previously engaged in exporting to Europe but has since lost its HACCP certification. All other associations consider the value addition for export markets as a top investment priority. This contrast with the attitude of the exporter highlighted above is interesting.

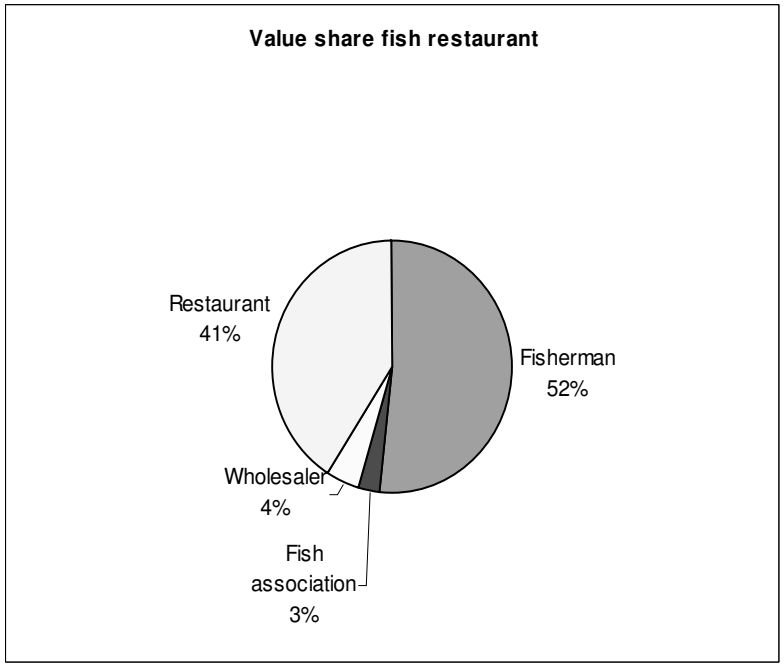
> **Al Shehir Association, Hadramout**: *"We used to export processed fresh fish, such as fresh whole and fillet yellow fin tuna to France. We did the processing in our own processing facility which has a 100ton cold storage capacity. We dealt through a commercial intermediary who provided us with foreign markets. We were the first association to get the European Export license, but unfortunately our export activity stopped when the European license was repealed by the MFW. We are still trying to restart the export business but still need support to get our processing facility back to EU criteria and if we had the right proficiency we could deal without an intermediary".*




Value shares fish retail
Retailer
30%
Wholesaler
5%
Fish association
3%
Fisherman
62%


Value addition fish retail
YR/kg
1000
900
800
700
600
500
400
300
200
100
0
Retailer 230
Wholesaler 40
Association 25
Fisherman 465


Value share fish restaurant
YR/kg
1000
900
800
700
600
500
400
300
200
100
0
Restaurant 370
Wholesaler 40
Association 25
Fisherman 465


Value share fish restaurant
Restaurant
41%
Fisherman
52%
Wholesaler
4%
Fish
association
3%

7. Lead times in the fish chain are short. There are only 14 hours from catch-on-sea to the retailer/restaurant in Sana'a (Annex 2).

8. Long-term interpersonal relationships are important in the fish chain. Buyers and sellers know each other on average between 10 and 20 years. Yet cooperation is limited. There is no exchange of information on supply or demand parameters (quantity, quality, packaging, etc.) (Annex 4). However on occasions when fish is left over at the auction site wholesalers and/or associations will begin to contact one another.

> **Wholesaler/Retailer Buliali Fish Market, Sana'a**: *"I have a van and usually travel to Hodiedah to buy fish. We also buy fish from other wholesalers that bring fish from Aden, Taiz and Mukalla. I sell to restaurants, hotels and other retailers at wholesale bulk price and sell retail by the fish or slice in kilo. Sometimes I get a call from Hodiedah from an exporter that has bought a lot of fish but does not want the smaller fish and I buy it from him. Sometimes it is the association that calls or other wholesalers and they want to get rid of extra fish so I buy it"*

9. The product is paid in cash on the spot. There is no pre-financing among the chain actors, nor do they make use of bank loans. The only exception are the fishermen associations: (a) they provide inputs on credit to the fishermen, and (b) in recent years they take bank loans to overcome the 3-months period that exporters take to pay for the product (Annex 4).

C. The chain environment

10. The chain actors do not make use of support services (except the associations using bank loans) (Annex 4). In recent years fishermen have begun purchasing GPS devices. Although they are well represented by the associations they have not been able to convince the GPS traders to offer support services on using the devices. Current use of GPS is limited to tracking route.

11. The policy framework to regulate the fishery sector is at best incipient. Anybody seems to be able to become a fisherman – there are no formal criteria that they have to comply with (licenses, training, or asset requirements). There are no monitoring data, zoning policies, or fish quotas to safeguard the fish population. There is no policy on "side-catches."

12. The few regulations which exist (such as the banning of particular fishing tools "seines/cages" in specific seasons of some fish species) but still are not effectively enforced. The MFW, local authorities, and fishermen associations refer to each other for responsibility. The MFW was supported with the purchase of 20 boats to help monitor and enforce regulations. However the boats purchased were too big requiring a sizable crew, and with two engines consumed too much fuel, which made it an expensive operation. The boats are no longer operational.

D. Constraints and opportunities in the fish chain

13. Lack of production of YFT fish due to the illegal & unregulated fishing in the Yemeni territorial waters. On the positive, there is oversupply of some fish species such as Catfish, can markets be found for this fish?

14. The domestic market is characterized by harsh competition, increasing costs, declining supply, and rising market prices. All chain actors are price takers and compete on basis of volume/price; nobody seems to have a differentiating business model. More recently the export market appears to be moving in this direction with the bulk of exports still entering Saudi Arabia at the lower market end where export prices are too being squeezed.

15. At the same time all chain actors are interested in expanding their business. However they think in terms of up-scaling, rather than looking for value-adding or differentiation. In recent years imports have begun creeping up with imported products containing considerable value added such as packaged dried cuttlefish, smoked fish, vacuumed seasoned Tuna slices…etc (Annex 3).

> **Fisherman (former Yemeni expatriate of Saudia Arabia:** *"I used to own a small grocery shop in Saudia Arabia. We would sell fresh fish by the kilo. Then I bought a small vacuum packaging machine and began slicing into steaks of 300grams, packing and freezing. My profit doubled from 1.5 Saudi Rials to 3 SR per kg. Demand for clean packaged slices was increasing. I think this would be good for the our local market (Yemen domestic market)"*

16. The export market is seen as an important business opportunity, but this study focused only on the domestic market. Exporters mention that more attention should be given to developing the domestic market and supporting access to higher value regional markets.

E. Quality management and consumer focus

17. The most important quality feature in fish is freshness. All chain actors know how to distinguish fresh fish, and they are aware of the factors affecting quality (ice on boat, exposure to sunlight, long fishing period, & bad handling on the landing sites). They mention that at least 90% of the fish is fresh. This seems consistent with the short lead times in the chain (Annex 6).

18. Nevertheless, some actors mention low quality problems, apparently related to the lack of ice on the boats, bad handling at the landing site and during transport of the fish. This may explain the declining export prices.

19. Traceability is not of any concern to the chain actors (Annex 6). However as mentioned above timing is important and when customers enquire about traceability they are really asking when the fish was caught. Here fish traced as fresh (time between catch and market) could demand a higher price.

20. Not a single chain actor is able to articulate domestic consumers' expectations regarding fish quality (Annex 6). There is a sense that the problem lays with the consumer. Outside of the big fishing towns such as Sana'a, fish types known to the customer are truly limited. Whereas in the fishing towns consumers are familiar with squid, shark meat, crab, octopus and many other varieties. Retailers in Al Bulaili market (Sana'a) mention that consumers that purchase squid or crab or less familiar products are usually expatriates or Yemeni that have come from the coast or lived abroad.

F. Overall conclusions

21. The fish value chain is a supply-driven bulk business. The chain actors are unaware of consumer expectations, and they do not know how to respond to market demand (more YFT, less catfish). The chain actors think in terms of volume rather than differentiation and value adding. Therefore, the key challenge is to make the fish chain more client-oriented and market-responsive.

22. Due to the (relatively) attractive operating margins, many Yemeni start a fishing business. Due to the lack of an effectively enforced policy framework, the sector had "predatory" characteristics. There seems to be over-fishing and declining stocks in certain species, though there are no statistics available. The sector seems to be on verge of decline.

G. Policy recommendations

23. The fishermen associations are the key point of intervention, because they are dominant in the chain. Key areas of intervention: (a) build capacity to enforce regulations; (b) improve business skills and develop a market-oriented mindset, (c) develop capacity for vertical chain cooperation, starting with coordination and exchange of information; and (d) start to move into value adding and differentiation.

24. Develop and implement an effective regulatory framework and enforcement mechanism to safeguard the fish populations.

25. Promote a service industry for value adding (freezing, branding, logistics).

26. The unused fish species represent a clear business opportunity! Domestic market awareness on fish varieties or health gains associated from fish is weak.

27. Very little quantitative and scientific information is available on the fisheries resource. Where information is available it is somewhat dated (15 – 30 years) and focuses in on a limited set of species (cuttlefish, rock lobster). Small pelagic species were surveyed in the period 1975-84 and the estimates then on potential yields were between 130000 – 150000 tonnes. A fish stock survey is needed and could act as a launching pad for a structural sector monitoring system.

ANNEX 1: SUB-SECTOR GROWTH FISH

Year	Number of small fishermen	Yearly catch (ton)	Catch per fishermen (kg)	Export (tons)	Export price (YR/kg)	Export value (millions YR)	Export (% of catch)	Import (tons)	Import price (YR/kg)	Import value (millions YR)	Domestic market (tons)	Domestic market (% of catch)
1990	25,000	77,310	3,092	3,883	739.48	2,871	5%	1	241.00	0	73,428	95%
1995	30,895	107,970	3,495	6,525	329.04	2,147	6%	35	102.86	4	101,480	94%
1999	31,538	124,384	3,944	20,274	301.04	6,103	16%	412	151.21	62	104,522	84%
2000	32,182	114,750	3,566	21,963	348.46	7,653	18%	4,824	117.74	568	97,611	82%
2001	49,114	142,198	2,895	47,522	244.84	11,636	33%	60	124.33	7	94,736	67%
2002	49,114	179,584	3,656	52,759	469.35	24,762	29%	45	112.11	5	126,870	71%
2003	49,114	228,116	4,645	64,000	518.82	33,204	28%	54	85.19	5	164,170	72%
2004	65,198	256,366	3,932	75,000	524.77	39,358	29%	655	254.20	167	182,021	71%
2005	65,198	239,000	3,666	84,000	549.19	46,132	35%	618	136.89	85	155,618	65%
2006	69,608	230,000	3,304	90,000	558.29	50,246	39%	821	335.08	275	140,812	61%
2007	77,581	180,000	2,320	81,000	481.56	39,006	45%	1,120	509.82	571	100,120	55%
2008	73,702	174,800	2,372	105,000	245.14	25,740	60%	864	148.50	128	71,154	41%

ANNEX 2: CHAIN MAP FISH

Step number	Value chain actor	Chain function	Lead time (hours of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Fisherman	Performing catch fish on the sea by small boat	5	Mukallah, Shehir, and Hodida	One small or medium fishing boat, 1- or 2 boat engine, & fishing tools, with 3- 6 workers.
2	Fish association	Fishermen association performs fish marketing & provides fishery facilities on the landing site	4	Mukallah, Shehir, and Hodida	Members, ice plant, auction hall. And the association in Shehir has cold storage, fuel station, & sale shop of fishing tools/engine spare parts
3	Wholesaler	Buying fish from the associations on the landing sites and distribute it.	5	Mukallah, Shehir, Sana, Aden, and Hodida.	One refrigerated van,& one assistant driver
4	Retailer	Buying fish from the associations on the landing sites and distribute it in centre fish market in (Mukalla, Sana, Aden, etc …)	12	Mukallah, Shehir, Sana, Aden, and Hodida.	Cutting knifes, one scale
5	Restaurant	Buying fish from the domestic fish market in Sana'a.	6	Sana'a	Equipped restaurant, 14 workers

ANNEX 3-A: PROFILE OF THE FISH CHAIN ACTORS continued on next page

Step number	Value chain actor	Volume of business (kg/day)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources (besides XXX)	% of XXX on total income	Sources of capital, including %
1	Fisherman	350	29,295,000	146,475	29,295,000	146,475	None	None	100% private capital
2	Fish association	35,000	3,087,000,000	15,435,000	157,500,000	787,500	Sales of ice, fuel, fishing tool, spare parts, boat maintenance services	25% is fish, 30% is ice, 40% is fuel, 5% is maintenance	Shareholders (usually from fishermen)
3	Wholesaler	1,950	155,025,000	775,125	14,040,000	70,200	None	None	100% private capital
4	Retailer	250	57,000,000	285,000	10,350,000	51,750	Sales of chicken	Approximately 50% income from fish	100% private capital
5	Restaurant	200	59,400,000	297,000	13,320,000	66,600	None	None	100% private capital

ANNEX 3-B: PROFILE OF THE FISH CHAIN ACTORS

Step number	Value chain actor	Three main perceived constraints	Main perceived business opportunity	Top priority for investment
1	Fisherman	1. Unable to do long trips (further 30 miles) due international martial ships; 2. Shortage of YFT production; 3. Increased engine prices ($1500)	Increase catching white/YFT fish to satisfy high market demand	New boats with fully equipped fishing equipment
2	Fish association	1. The shortage of YFT production; 2. Lack of marketing for some kind of fish such as Catfish (available in high quantities); 3. Illegal fishing by foreign trawlers; 4. Lack awareness among fishermen of quality aspects	Increase the production of high-demand fish species such as YFT, white fish, cuttlefish, etc	1. Processing company for export markets; 2. Improved access to export markets; 3. Factory for fishmeal in Hodaida
3	Wholesaler	1. Shortage of the required red meat fish (YFT); 2. Increased fish prices on the auctions due to exporters' presence; 3. Lack of business capital	Distributing the product to other areas such as Sana'a & Aden	Purchase more vans
4	Retailer	1. Shortage of the required red meat fish (YFT); 2. Increased fish prices on the auctions due to exporters' presence; 3. Sometimes low profits due to harsh competition		Purchasing fully equipped fishing boat. Reason: a fisherman is not worried about selling his daily production, unlike the retailer.
5	Restaurant	1. Fish on the wholesale market does not always meet the required quality; 2. Most customers ask specific fish species such as Emperor/Cobia, but our profit is greater in un-required species; 3. Increased fish prices on the market due to high demand and little supply.		Purchase of a new restaurant

ANNEX 4: RELATIONS IN THE FISH CHAIN

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Fisherman	12	Cash payment by the association or trader's agent on the auctions	None	3	On credit through the association or trader's agent	None	None	None	None
2	Fish association	20	Usually cash, but exporters on credit for up to 3 months which affects liquidity	None	12	Cash payment	None	Dealing with some local banks to cover the association financial liquidity	None	None
3	Wholesaler	12	Cash payment	None	12	Cash payment	None	None	None	None
4	Retailer	10	Cash payment	None	10	cash payment	None	None	None	None
5	Restaurant	4	Cash payment	None	4	Cash payment	None	None	None	None

ANNEX 5: PRICES, MARGINS AND VALUE SHARES IN THE THE FISH CHAIN

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share retail (%)	Value share restaurant (%)
1	Fisherman		465	465	100%	61%	52%
2	Fish association	465	480	25	5%	3%	3%
3	Wholesaler	490	530	40	8%	5%	4%
4	Retailer	530	760	230	30%	30%	
5	Restaurant	530	900	370	41%		41%

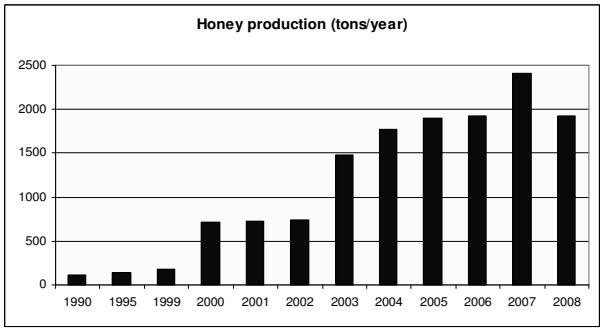
ANNEX 6: QUALITY MANAGEMENT IN THE THE FISH CHAIN

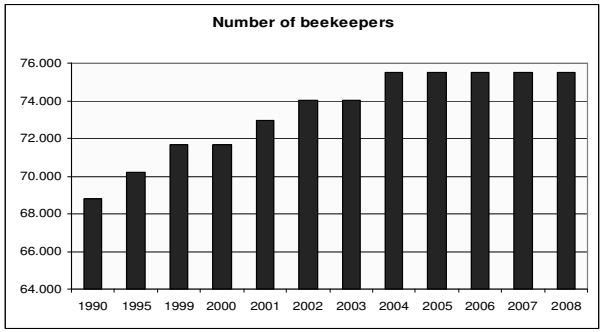
Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
Fisherman	Fresh fish (red color meat)	Eye (bright, clear & black pupil), Gills(bright red or pink), Skin (glossy), Texture (firm & smooth to touch), Smell (inoffensive)	90% best quality, 10% medium quality	100/kg average	Ice on boat, time of fishing trip, exposure to sunlight, bad handling on landing sites		
Fish association	Fresh fish (red color meat)	Eye(bright, clear & black pupil),Gills(bright red or pink), Skin(glossy),Texture (firm & smooth to touch), Smell(inoffensive)	90% best quality, 7% medium quality, 3% low quality	100/kg average	Ice on boat, time of fishing trip, exposure to sunlight, bad handling on landing sites		
Wholesaler	Fresh fish (red color meat)	Eye(bright, clear & black pupil),Gills(bright red or pink), Skin(glossy),Texture (firm & smooth to touch), Smell(inoffensive)	100 % best quality	One of the traders we've met said "30/kg average of low quality".	Quantity of ice in vans, long distance of trips		
Retailer	Fresh fish (red color meat)	Eye(bright, clear & black pupil),Gills(bright red or pink), Skin(glossy),Texture (firm & smooth to touch), Smell(inoffensive)	100 fresh good quality		Lack of ice inside the boxes holding fish.		
Restaurant	Fresh fish	Eye(bright, clear & black pupil),Gills(bright red or pink), Skin(glossy),Texture (firm & smooth to touch), Smell(inoffensive)	100% fresh fish (good quality)		Lack of ice inside the boxes holding fish.		

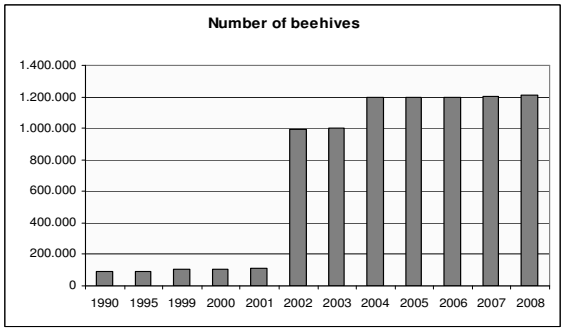
Report honey value chain

A. Sector performance

1. The honey sector has experienced turbulent growth between 2000 and 2005, but seems to be stagnating in recent years. Limiting factors are the availability of modern beehives and natural nutrition for the bees (particularly Seder trees).



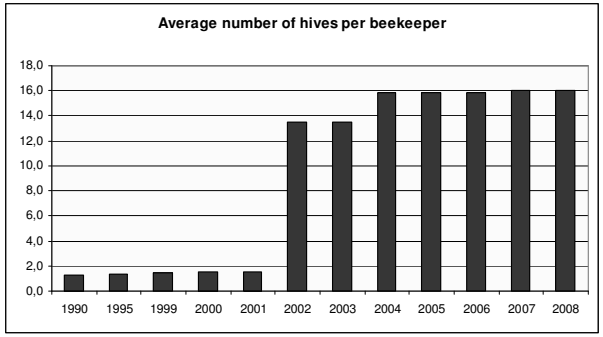


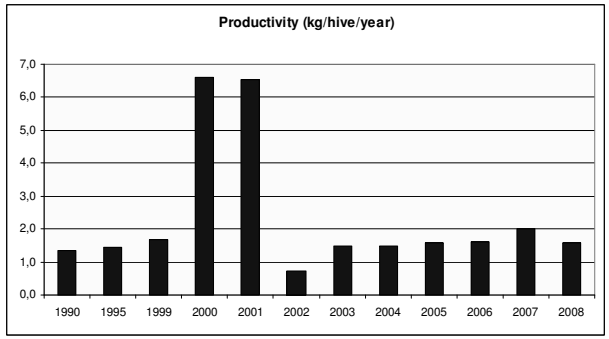


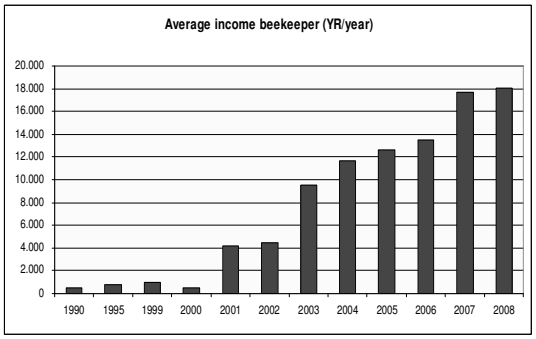
2. In those years, honey production has evolved to become serious business, with a steady increase in number of beehives per beekeeper and income derived from honey. Productivity has remained stable. (NB: statistics 2000/2001 seem unreliable, the Ministry of Agriculture and Irrigation in 2000 undertook a national survey of beehives. This was followed in 2002 by a sample survey. All data since have been extrapolated from these two surveys). The field research confirms increased commercialization of the sector in recent years. In Abyan (east of Aden), generations of beekeepers considered it rude to sell honey but more recently more beekeepers are doings so.

Beekeeper Wadi Hassan, Abyan: *Before 6/8 years most of us here didn't sell our honey. We used to produce for medicine and when somebody needed honey we would give them some for money. Before we did not used to travel between fields we would keep the beehives next to our homes. Today I have 200 beehives and we move a lot between the season and my son has 150 beehives and the income from honey is good.*

Beekeeper (20 traditional beehives) Wadi Hassan, Abyan: *From my grandparents until now we never did market honey. Honey is a gift from God. When I need cash I sell the entire beehive with the honey and bees*. (This beekeeper worked for the Ministry of Agriculture).



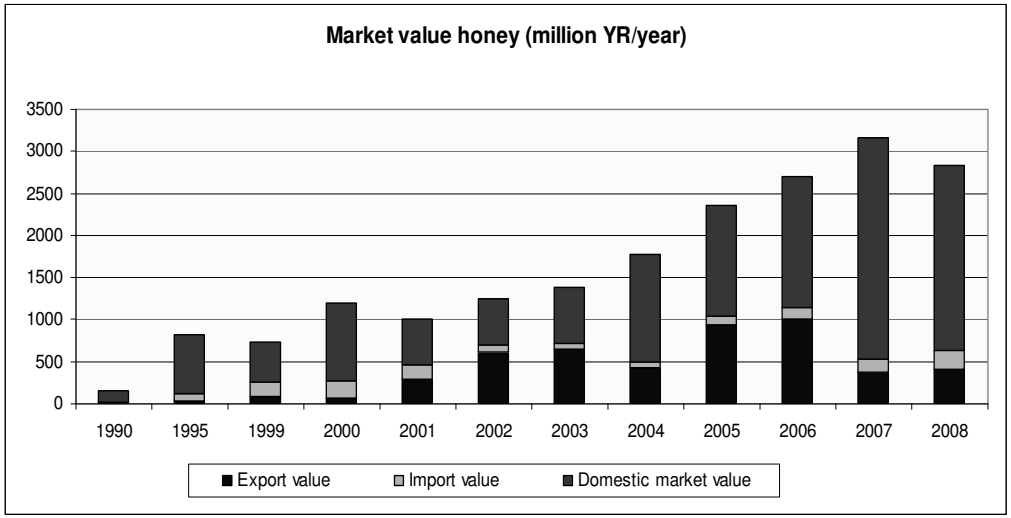


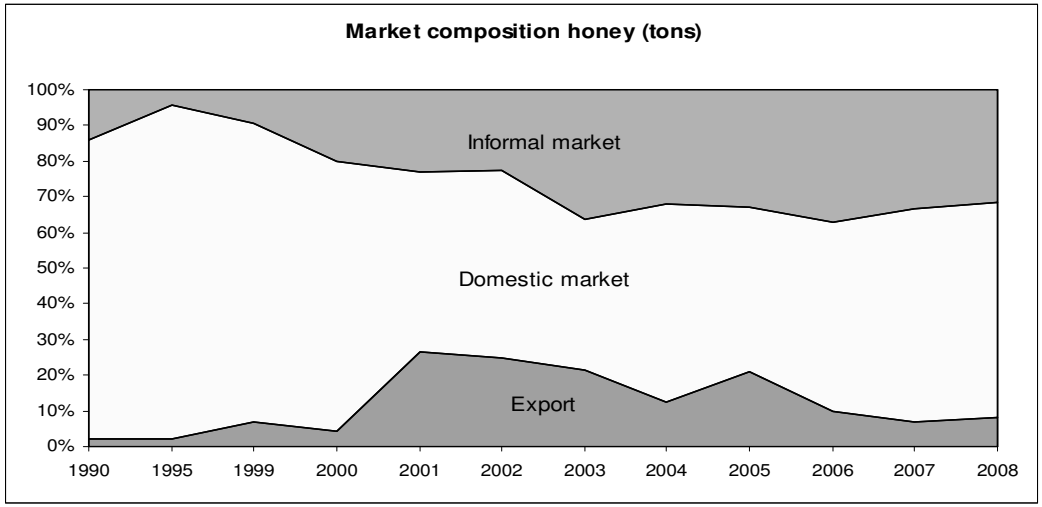


3. The main destination for the honey is the domestic market. Honey exports have been fluctuating, and are in decline in recent years. Imports are relatively insignificant. A significant proportion of the honey does not enter formal market channels, but is used for self-consumption, gifts, or informal trading. Traders complain that in recent years cheating (mixing high grade with imported Kashmiri honey or low grade local honey) is eating away at the reputation of Yemeni honey in the gulf. Traders blame this on the recent dip in exports.

Wholesaler, Qatn Hadramout: *We have been able to build a strong market in Kuwait. Last year I sold 150 7kg containers to one Kuwaiti customer. He was not happy with the honey and claimed his test revealed it is not pure Seder and returned the whole lot from Kuwait. We could not test the product locally, and even if we can, who should do this the traders after buying or the beekeepers before selling?* (This concern on cheating and testing was a pertinent point of discussion during the stakeholder workshop held in Seiyoun Hadramout).

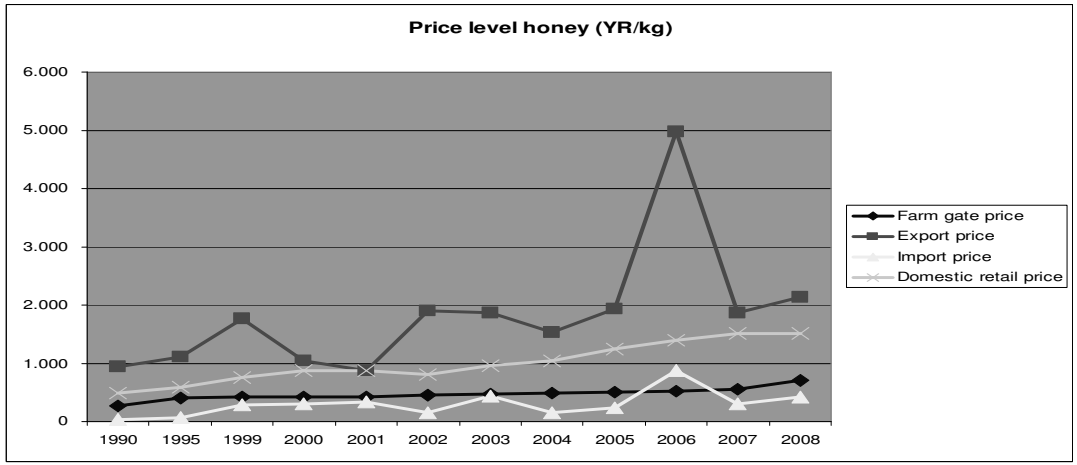
Member of the Beekeepers Association, Tarim Hadramout: *We have seen a lot more beekeepers and beehives in the last few years. During the Seder season thousands of beekeepers come to the Wadi, but unluckily these thousands have grown even more. And to make things worse a big Saudi investor has purchased 1000 modern beehives and reserved a territory with a number of Seder trees which makes the problem worse. Productivity decreases which pushes the beekeepers to feed the bees more sugar to keep them alive and even worse some cheat by mixing with Kashmiri. All this affects quality and buyers in the gulf like us know when the quality is weaker. If our government demands Kashmiri honey is imported in small containers, we make it more difficult and more expensive to mix.*





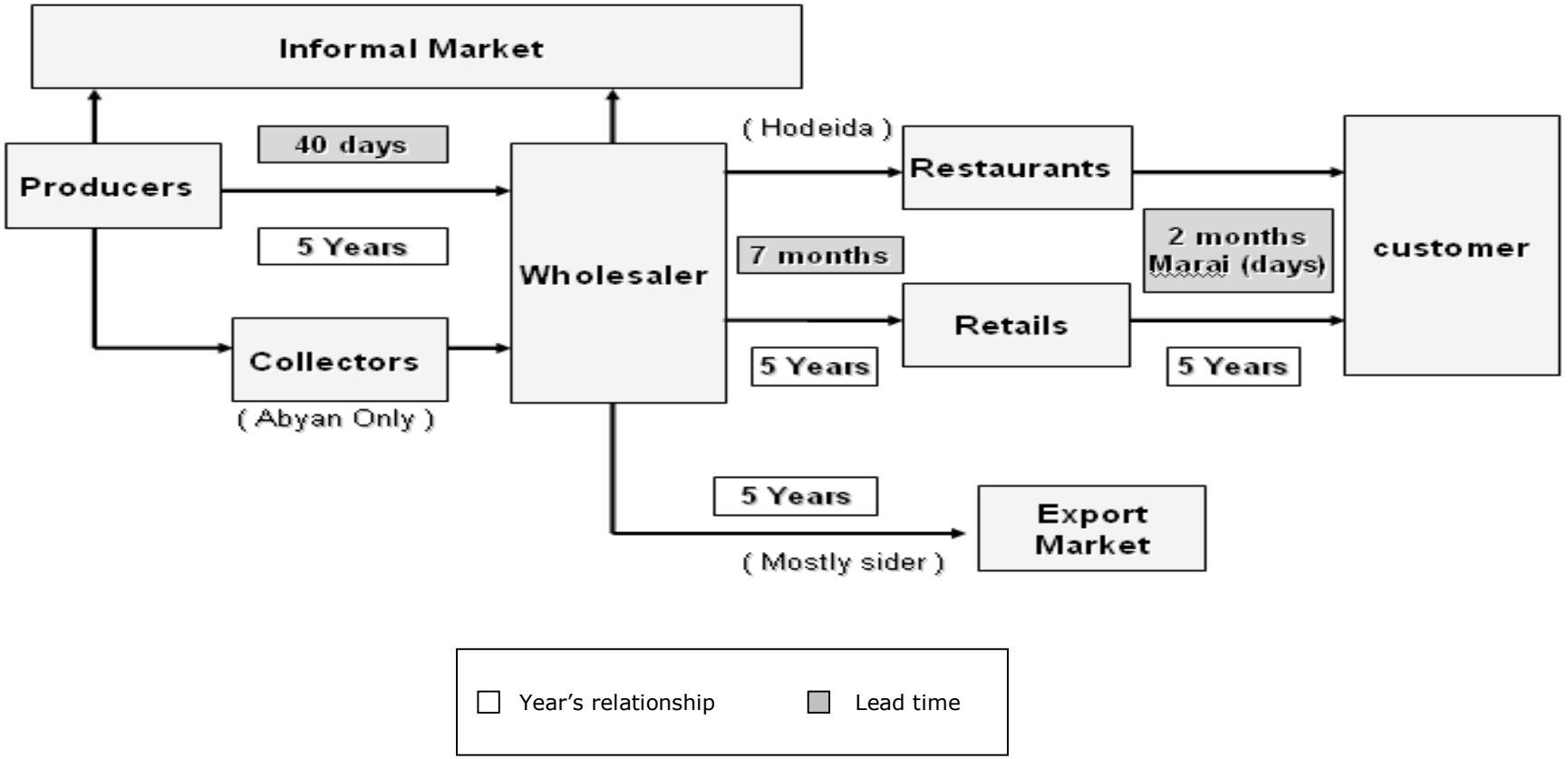
4. At first glance the fact that export prices are well above domestic market prices, one may consider it remarkable that the domestic market is dominant. The study revealed that the far majority of exported honey is the expensive Seder type (high grade). This may explain for the high price of exports relative to domestic prices, local prices will include the wide spectrum of local varieties including the less expensive Maryee (floral). In both markets, prices have risen steadily over the years.

5. Traders explain the 2006 spike in export prices as the result of a temporary ban on Kashimiri honey imports by the Saudi government.



B. The value chain

6. This study focused on the three most traded varieties of Yemeni honey (Seder, Summur and Maryee (floral)). The chain is short with the exception of Abyan where collectors act as middlemen between producers and wholesalers, whereas in other areas producers deal directly with wholesalers. The wholesalers play the most prominent export role, and the most exported honey is Seder. Field findings showed that in Hodiedah restaurants play a dominate role in moving honey. Restaurants serve small portions (average serving 56 grams for 100YR) with lunch. Although restaurants offer a variety of honey types and grades the vast majority is Maryee honey (floral). The honey chain is organized as depicted below:

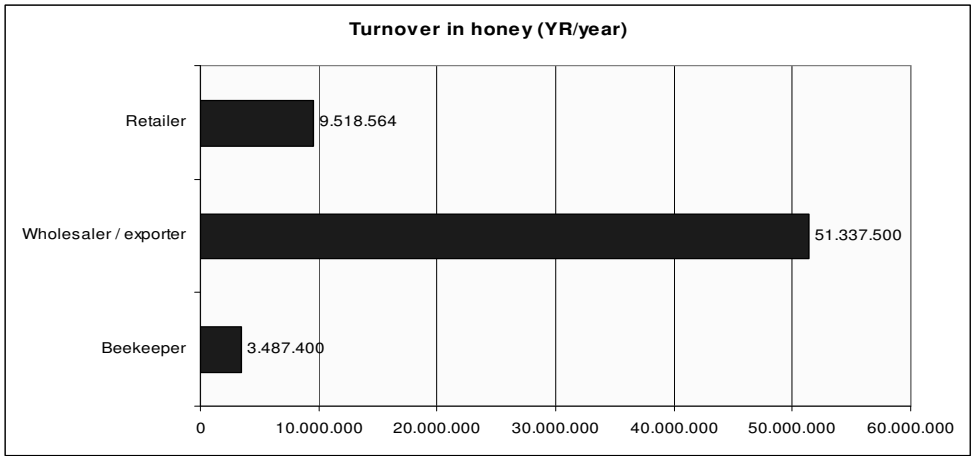


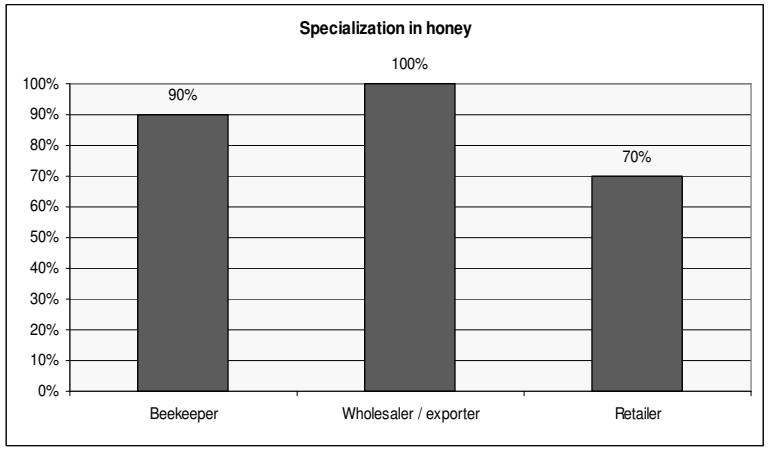
7. Honey is perfectly conservable and speed throughout the chain is not an issue. Therefore lead times in the chain are long. Beekeepers require 40 days from placing the beehives and extracting and selling the honey. Traders often purchase in bulk and will release to market over a period of time. The price of Seder falls slightly during its season and increases during the rest of the year.

8. Honey is a specialized business activity. Particularly the wholesalers-cum-exporters are specialized, around 100%. Honey producers have other business lines, but their main income is derived from honey. Retailers are specialized in honey, but they also sell oil, perfumes and henna.

9. The wholesaler-cum-exporter is the dominant actor in the honey chain. Their yearly turnover is vastly higher than that of the producers and retailers. Yet all honey chain actors can be classified as SME.

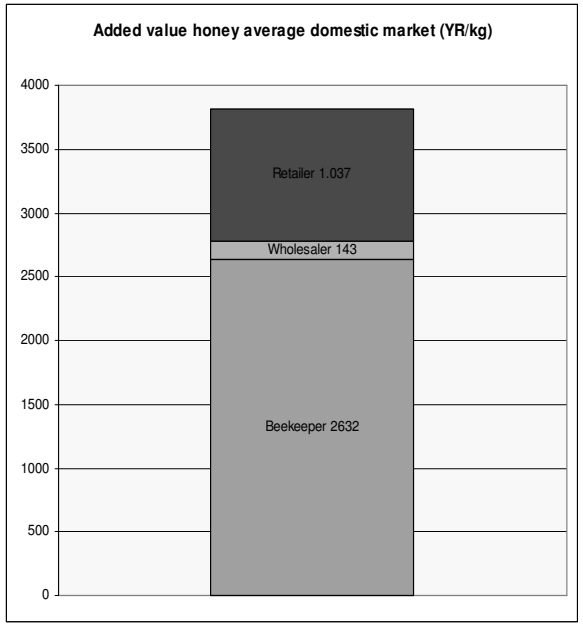
Wholesaler/retailer located in down town Aden, a small business that moved backwards in the chain to guarantee supply: *I work here with my dad and my brother and one or two casual workers. My dad started the business about 15 years ago where we used to buy and sell honey locally. 9 years ago we started to export to the gulf and invested in beehives to secure honey for our markets, today we own 2500 beehives which are mainly located in Shabwa but we move them according to the season. All together we employ 13 workers, 10 look after the beehives and 3 drive the trucks*. (This trader moves between 14000 and 20000 Kilos of Honey per year).

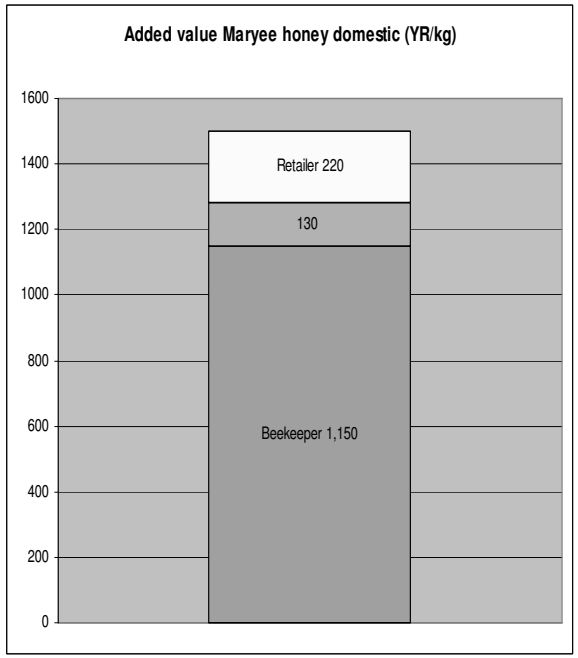


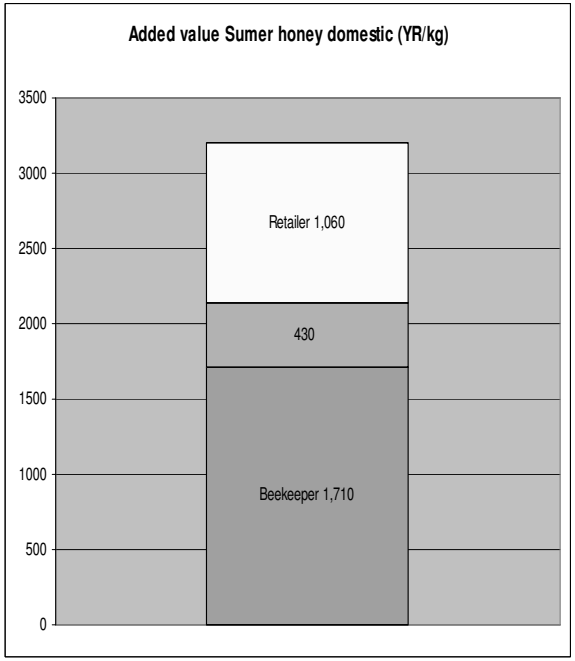


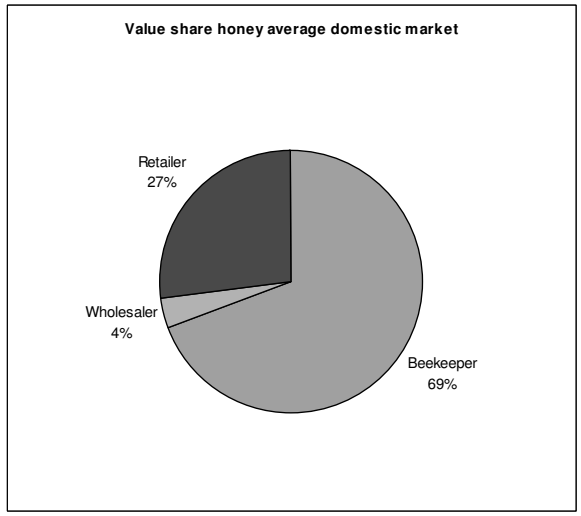
10. Beekeepers fetch the highest share of added value in the honey chain, on average 69%. Wholesalers appropriate only a small portion of added value, on average 4%. Retailers receive on average 27% of the added value in the chain.

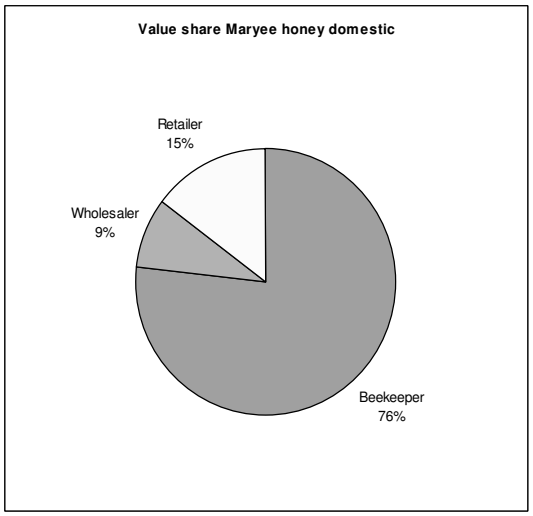
11. But there are important variations in the different qualities of honey. Beekeepers get their highest value share (76%) in Maryee, the lowest quality of honey but available through-out the year. Retailers get their highest value share (33%) in Sumer, the mid-quality honey and produced just a few months each year. Wholesalers get their highest value share (14%) in Seder, the top-quality honey also produced a few months per year. When exporting Seder, wholesalers double their value share to 29%.

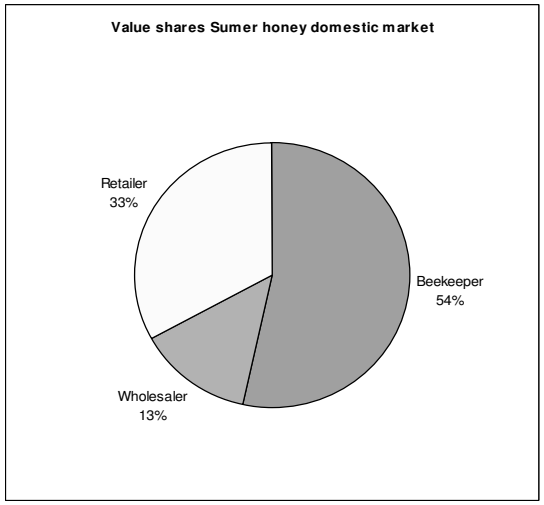

Added value honey average domestic market (YR/kg)
4000
3500
3000
2500
2000
1500
1000
500
0
Retailer 1.037
Wholesaler 143
Beekeeper 2632

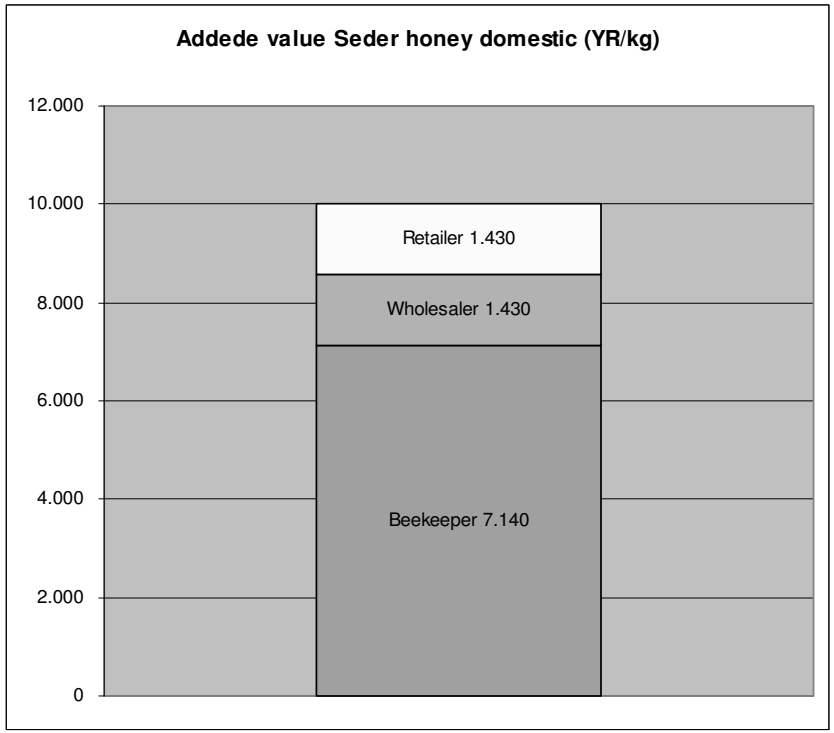

Added value Maryee honey domestic (YR/kg)
1600
1400
1200
1000
800
600
400
200
0
Retailer 220
130
Beekeeper 1,150

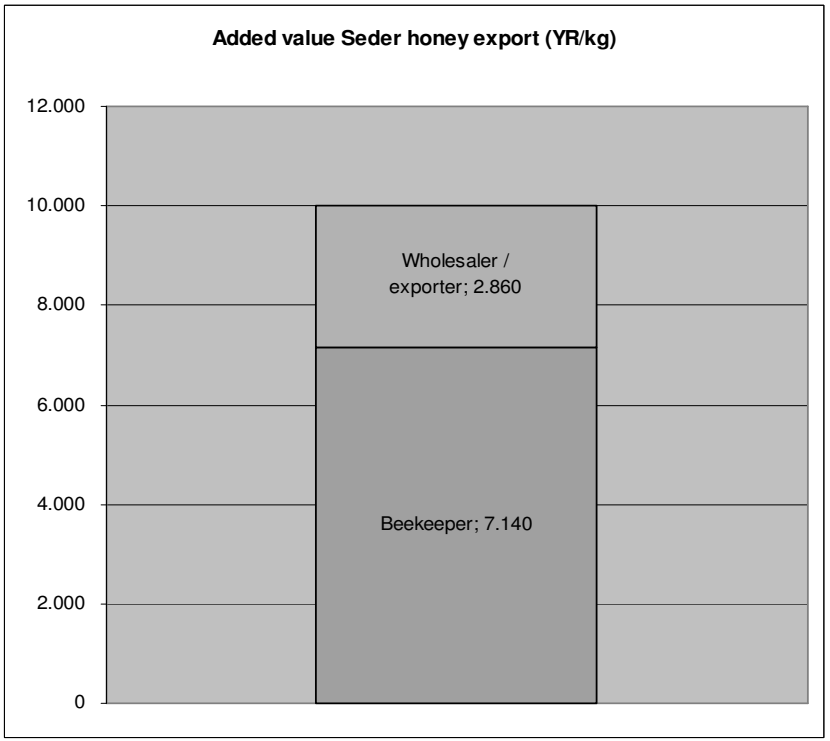

Added value Sumer honey domestic (YR/kg)
3500
3000
2500
2000
1500
1000
500
0
Retailer 1,060
430
Beekeeper 1,710

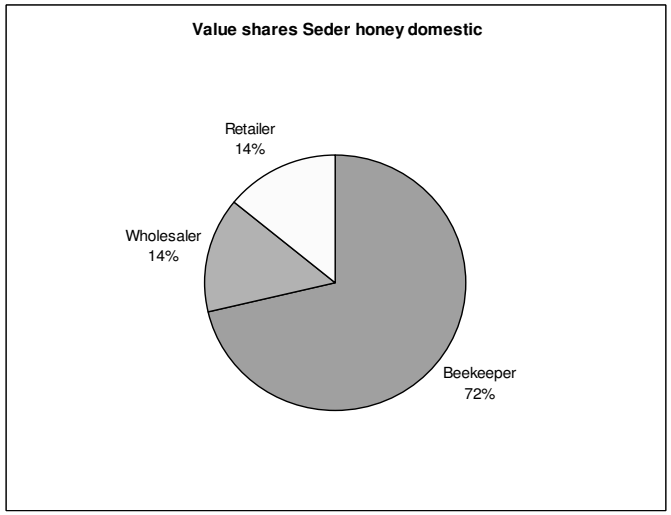

Value share honey average domestic market
Retailer
27%
Wholesaler
4%
Beekeeper
69%

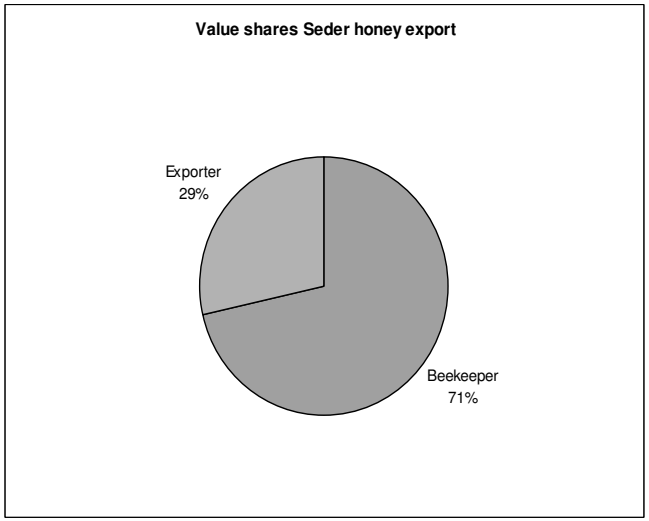

Value share Maryee honey domestic
Retailer
15%
Wholesaler
9%
Beekeeper
76%


Value shares Sumer honey domestic market
Retailer
33%
Beekeeper
54%
Wholesaler
13%

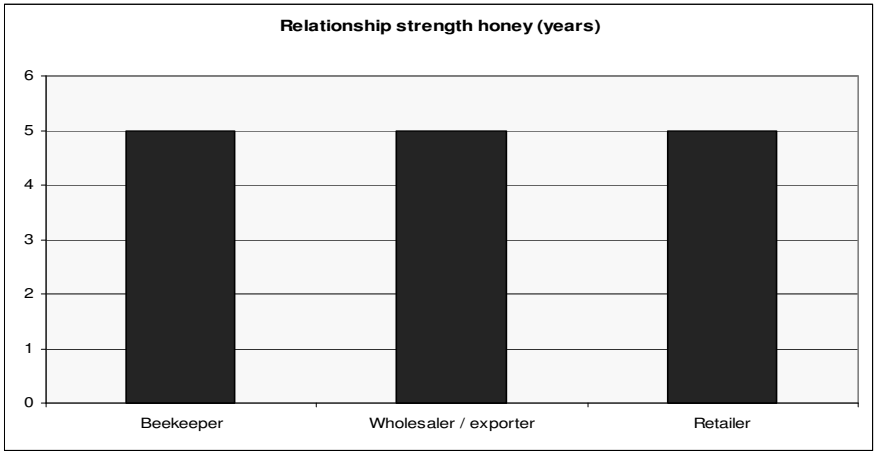

Addede value Seder honey domestic (YR/kg)
12.000
10.000
8.000
6.000
4.000
2.000
0
Retailer 1.430
Wholesaler 1.430
Beekeeper 7.140


Added value Seder honey export (YR/kg)
12.000
10.000
8.000
6.000
4.000
2.000
0
Wholesaler / exporter; 2.860
Beekeeper; 7.140


Value shares Seder honey domestic
Retailer 14%
Wholesaler 14%
Beekeeper 72%


Value shares Seder honey export
Exporter 29%
Beekeeper 71%

12. The business relations in the honey sector are on average 5 years. They seem to have remained stable since the "boom" in the sector. There are credit flows between buyer and seller, especially between beekeepers and traders. Often their relations evolve into partnerships where a trader will purchase beehives and offer them to beekeepers to manage and the profits are shared. In other cases a beekeeper may be employed by a trader to manage the trader's beehives. There is close coordination on product quality and volumes. Traders regularly visit beekeepers to check up on production and quality.



C. The chain environment

13. Beekeepers, wholesalers and retailers operate individually, they are not organized.

14. The honey chain actors report no significant support from outside chain supporters. Wholesalers tend to have bank loans, but there is little support from government agencies. Beekeepers' 'supplies shops' are limited to hadramout and still there is weak availability of supplies. In early 2009 a public-private venture was established in wadi hadramout which offers honey testing services. Still many traders are not yet aware of the service. The Social Fund for Development has supported efforts at improving quality and productivity including support on the introduction of modern beehives.

Member of the beekeepers association and beekeeper trainer, Tarim Hadramout: *It is true that the modern beehive is increasing in the market, it increases production and they can be stacked on top of each other so they are easy to move. They are more productive because the bee does not make the wax, this is already there. We have imported wax sheets that we place in side the beehive; we can put several sheets in one. But this imported wax is not pure or natural. These sheets have an unnatural smell. We think these sheets make the problem of disease worse. There is one local (hadramout) producer of natural/pure wax sheets for the modern beehive. He buys wax from beekeepers but many do not know of the value of wax and throw it away. So he can not produce for all the beekeepers. But to protect our honey we need to solve the problem of the imported wax or the modern beehive will become a problem.*

D. Constraints and opportunities in the honey chain

15. The chain actors report a wide range of constraints:
    - Beekeepers are concerned with the imports of Kashmiri honey, the difficulties in obtaining modern beehives, and diseases in beekeeping:

      (i) Kashmiri honey imported from Saudia Arabia is similar in taste, texture and color to Yemeni Seder honey. In recent years mixing of the Kashmiri honey with local Seder has become a problem. It is difficult by taste and the naked eye to notice a difference. The practice of cheating is eating away at the reputation of Yemeni honey resulting according to key traders in Wadi Hadramout to a dip in exports.

      (ii) Modern beehives producers are beginning to cluster in the towns of Tarim and Seiyoun in Wadi Hadramout they are not so readily available in other governorates.

      (iii) Beekeepers complained about disease that attacks the bees. Beekeeper supplies shops (available in hadramout) do now stock vitamins for bees. Beekeepers with modern beehives complained that the imported wax which came with a strong petro-chemical smell contributed to increase disease.

    - Wholesalers-cum-exporters express concern about cheating through mixing (with Kashmiri) honey, poor packaging, and problems in obtaining the necessary certificates for exports;
    - Retailers report that consumers do not trust the quality of the honey, that prices rose too high, and the need for better packaging.

16. All chain actors express strong willingness to continue to invest in **HONEY** business. They perceive the following business opportunities:
    - Beekeepers mention better packaging, modern beehives, and reproduction of local beeswax;
    - Wholesalers-cum exporters better packaging, marketing/promotion, and new value-adding product lines such as cosmetics;
    - Retailers mention better packaging in smaller quantities, better distribution, and promotion/marketing.

Honey trader, Aden: *For both our export and local market the current packaging is poor. Firstly it does not look nice but more importantly it can make the taste change. I have been to Dubai and negotiated with a supplier of a PET plastic bottling line to set up bottle production in Yemen. It is something we are seriously thinking about. We are worried that the price is too expensive, but still compared to the honey it is very cheap, but how will the market respond?*

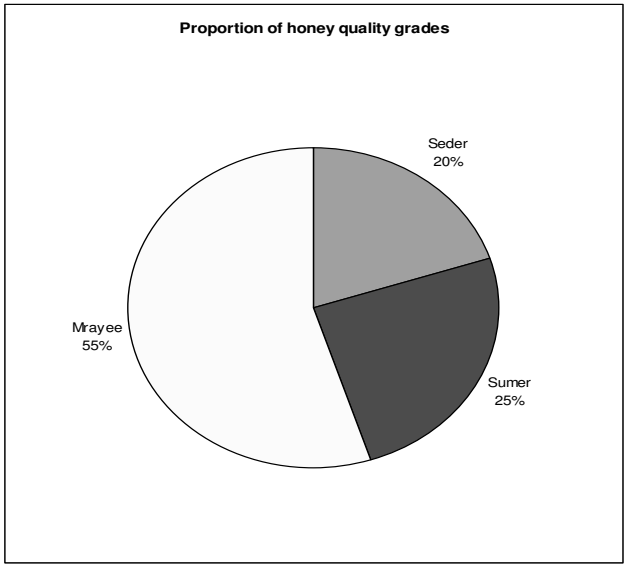
E. Quality management and consumer focus

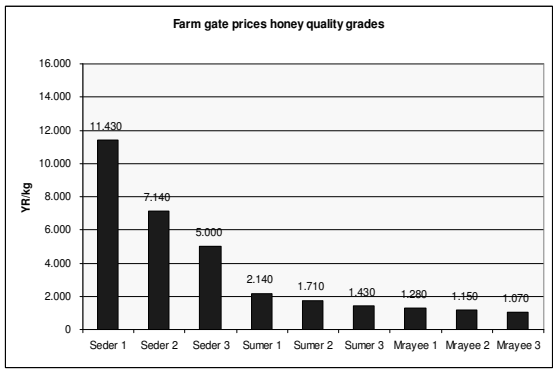
17. There are other kinds of honey which are not mentioned in this study, such as SALAM produced in specific regions such as Tihama and Ibb. Customers suffering with diabetes prefer Salam as it is believed it does not increase or reduce sugar counts in the blood. Many other types of honey are purchased for remedial properties for a wide array of medical conditions of which customers appear to be well aware of. For example it is a common practice in Yemen to treat burns with pure Seder honey, however mixed Seder, is considered detrimental.

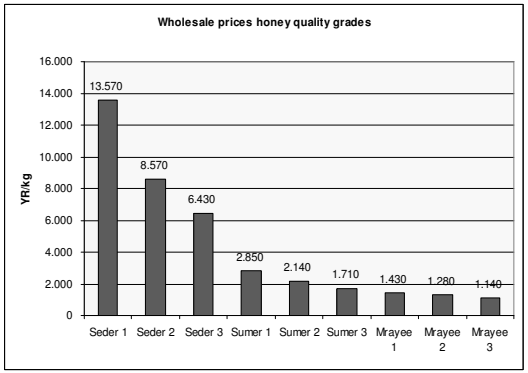
18. All chain actors are well aware of quality grades, quality indicators, and the factors influencing quality. There is a clearly defined quality grading system that is consistently applied from beekeeper to final consumer. The quality grading system is accompanied with clear price incentives. The price differences between the various quality grades are huge and with the advent of the modern beehive it is expected further market segmentation will follow as depicted in the following example:

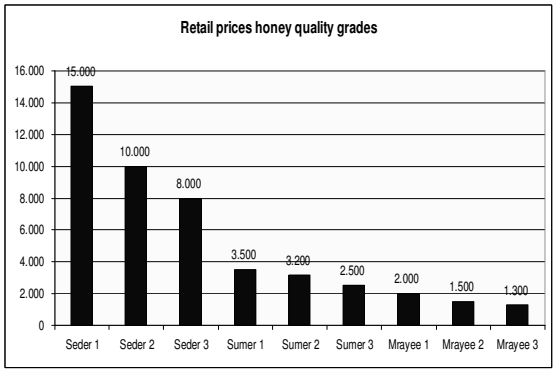
Trader, Tarim Hadramout: *Modern beehives are good because they produce more honey. But I will always buy and sell honey from traditional beehives for more money because the taste is 100% natural and I have customers that ask for honey from traditional beehives. So to have both methods is good even if the modern beehive is widespread, there will still be demand for traditional honey because it is like a premium honey.*

Grade	PRICES FOR QUALITY GRADES OF HONEY (YR/kg) Farm gate price	Wholesale price	Retail price
Seder 1	11.430	13.570	15.000
Seder 2	7.140	8.570	10.000
Seder 3	5.000	6.430	8.000
Sumer 1	2.140	2.850	3.500
Sumer 2	1.710	2.140	3.200
Sumer 3	1.430	1.710	2.500
Mrayee 1	1.280	1.430	2.000
Mrayee 2	1.150	1.280	1.500
Mrayee 3	1.070	1.140	1.300









19. In spite of the sophisticated quality grading system, the chain actors express concerns about cheating through mixing with imported honey. They mention that consumers might be loosing confidence in the quality of Yemeni honey. Therefore they attach great importance to the implementation of a quality certification system that guarantees the integrity and traceability of the honey. During the stakeholder workshop all honey traders' present exchanged contact details with the representatives from the newly established honey testing center mentioned above.

F. Overall conclusions

20. The honey sector has grown impressively between 2000 and 2005, but seems to be stagnating in recent years. Production has stopped increasing and exports are going down. Limiting factors are access to modern beehives and availability of natural nutrition for the bees (most notably Seder trees).

21. The honey chain is marked by long-term cooperation, close coordination, and a clearly defined quality grading system. Nevertheless, chain actors express deep concern about the integrity of Yemeni honey and consumer confidence. They are working towards the implementation of a quality certification system.

G. Policy recommendations

22. Support the chain actors in implementing a quality certification system to guarantee the integrity and traceability of Yemeni honey.

23. Invest in plantation of Seder and Sumer trees.

24. Support the adoption of modern beehives and the recycling (production) of bee wax into natural bee wax sheets used in modern beehives.

25. Support the development of better packaging.

26. Implement a country campaign for branding and promotion of Yemeni honey tied into 22 above where the gulf market buys into a deeply augmented product (brand, quality associated to it, assurances etc) similar to how Swiss watches or Dutch cheese are mar

ANNEX 1 : SUB-SECTOR GROWTH HONEY

Year	Number of smallholder beekeepers	No. of beehives	Hives per beekeeper	Farm output (tons)	Yield (kg/hive)	Farm gate price (YR/kg)	Farm output value (million YR/year)	Average income bee-keeper (YR/year)	Export (tons)	Export value (million YR/year)	Export price (YR/kg)	Export (%)
1990	68,813	88,000	1.3	119	1.4	277	33	480	8	7.5	938	2%
1995	70,217	93,000	1.3	134	1.4	403	54	769	29	32	1,103	2%
1999	71,650	104,000	1.5	174	1.7	420	73	1,017	51	90	1,765	7%
2000	71,658	108,000	1.5	714	6.6	425	33	465	59	61	1,034	4%
2001	72,985	110,000	1.5	721	6.6	425	306	4,197	326	285	874	26%
2002	74,004	996,000	13.5	736	0.7	450	331	4,475	321	611	1,903	25%
2003	74,004	1,001,000	13.5	1,484	1.5	472	701	9,472	350	654	1,869	21%
2004	75,484	1,196,000	15.8	1,771	1.5	495	876	11,602	279	427	1,531	13%
2005	75,484	1,197,000	15.9	1,897	1.6	502	952	12,612	484	938	1,938	21%
2006	75,484	1,198,000	15.9	1,930	1.6	526	1,016	13,460	201	1000	4,975	10%
2007	75,484	1,206,000	16.0	2,410	2.0	553	1,332	17,646	199	372	1,869	7%
2008	75,484	1,209,000	16.0	1,926	1.6	708	1,363	18,057	196	417	2,128	8%

Year	Import (tons)	Import value (million YR/year)	Import price (YR/kg)	Domestic market (tons)	Domestic market value (millions YR/year)	Retail price (YR/kg)	Domestic market (%)	Informal market (%)
1990	224	6	27	287	138	481	84%	14%
1995	1,166	80	69	1,217	715	587	94%	4%
1999	578	167	289	631	480	760	84%	9%
2000	704	210	298	1,073	930	866	76%	20%
2001	516	171	331	623	544	874	50%	23%
2002	551	85	154	672	545	811	52%	23%
2003	151	65	431	691	662	958	42%	36%
2004	446	70	157	1,230	1,280	1041	55%	32%
2005	412	100	243	1,066	1,319	1237	46%	33%
2006	158	137	867	1,115	1,562	1401	53%	37%
2007	495	149	301	1,742	2,630	1510	60%	33%
2008	498	209	420	1,458	2,202	1510	60%	32%

ANNEX 2 : CHAIN MAP HONEY

Step number	Value chain actor	Chain function	Lead time (no. of days/week/months of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Beekeeper	Beekeeping, bulking, cleaning, packing, transferring beehives from field to field according to honey seasons around Yemen (packing in 5 liters gallon gives 7kg)	40 days for each harvest	Hardramout , Abyen, Hodaidah, Emran	60% of beehives are modern, each produces 3 to 5 kilos in good seasons. Beekeeping tools, beesmokers, face veil, frame lefter, honey extractor.
2	Wholesaler / exporter	Packing in gallons or small plastic cans, wholesaling, retailing and exporting (in 5lt bottles). They operate in partnerships with beekeepers or own substantial beehives	Taking into account all varieties 7 months	Hadramout (Siyoun, Al Qaten,Al Mukallah , Tarim) Aden , Sanna, Hodaidah.	All traders met rented shops, and owned cars or vans. In many cases they owned considerable numbers of beehives, and some had workshops.
3	Retailer	Selling in kilograms (small quantities). What really differs retailers to wholesalers is the size of average sale. If retailer sells a complete 5lt bottle in one go it would be sold at a price nearer the wholesale price	Taking into account all types 2 months. Floral honey can be a few days	Sanna , Aden , Hodaidah	Retailers met, rented small shops with high investments in shop deco

ANNEX 3 – A : PROFILE OF THE HONEY CHAIN ACTORS

Step number	Value chain actor	Volume of business (kg/year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources (besides honey)	% of honey on total income	Sources of capital, including %
1	Beekeeper	1,325	3,487,400	17,437	3,487,400	17,437	Two of those interviewed have an income from teaching and solidering	90%	100 % family and self finance
2	Wholesaler / exporter	18,500	51,337,500	256,688	2,645,500	13,228	Honey only	100%	100% family and self finance
3	Retailer	2,497	9,518,564	47,593	2,589,389	12,947	Honey, perfumes and oil	70%	100% family

ANNEX 3 - B : PROFILE OF THE HONEY CHAIN ACTORS

Step number	Value chain actor	Three main perceived constraints	Main perceived business opportunity	Top priority for investment
1	Beekeeper	1- Big quantities of imported kashmeri honey 2-problems in mobilising modern beehives 3-diseases	1- Better packing for the honey 2-promotion for the modern behives 3-reprodution for the local wax	Honey (beehives)
2	Wholesaler / exporter	1-Imports of kashmiri honey and cheating/mixing 2- poor packaging 3- Problems in specification and health certificates specifically with exports	1-Good packaging 2- exhibitions 3- new lines from honey (cosmetics)	Own more beehives, purchase more honey
3	Retailer	1- High prices in the last seasons 2- no trust from the customers for the quality 3- better packing	1- New packing in small quantities 2- cars for distribution or distribution companies 3- promotion for honey	Honey, beehives, and cars for distributing honey

ANNEX 4 : RELATIONS IN THE HONEY CHAIN

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Beekeeper	5	Mainly cash, but in hadramout traders do provide finance or go into partnerships with produces	Quantity & type of honey	-	-	-	no	no	no
2	Wholesaler / exporter	5	Cash, and on account for big orders or resellers	Quantities	5	cash	Quantities and types of honey	2 of the traders met have loans from bank	no	no
3	Retailer	5	Cash	Quantities and quality	5	credit	Quantities and types of honey	no	no	no

ANNEX 5 : AVERAGE PRICES & MARGINS FOR ALL TYPES OF HONEY (DOMESTIC MARKET ONLY)

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share (domestic) (%)
1	Beekeeper		2,632	2632	100%	69%
2	Wholesaler	2,632	2,775	143	5%	4%
3	Retailer	2,775	3,812	1,037	27%	27%

ANNEX 6 : PRICES AND MARGINS MARYEE HONEY

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share (domestic) (%)
1	Beekeeper		1,150	1,150	100%	77%
2	Wholesaler	1,150	1,280	130	10%	9%
3	Retailer	1,280	1,500	220	15%	15%

ANNEX 7 : PRICES AND MARGINS SUMER HONEY

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share (domestic) (%)
1	Beekeeper		1,710	1,710	100%	53%
2	Wholesaler	1,710	2,140	430	20%	13%
3	Retailer	2,140	3,200	1,060	33%	33%

ANNEX 8 : PRICES AND MARGINS SEDER HONEY

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share (domestic) (%)	Added value (export) (%)
1	Beekeeper		7,140	7,140	100%	71%	71%
2	Wholesaler	7,140	8,570	1,430	17%	14%	
3	Retailer	8,570	10,000	1,430	14%	14%	
4	Exporter	7,140	10,000	2,860	29%		29%

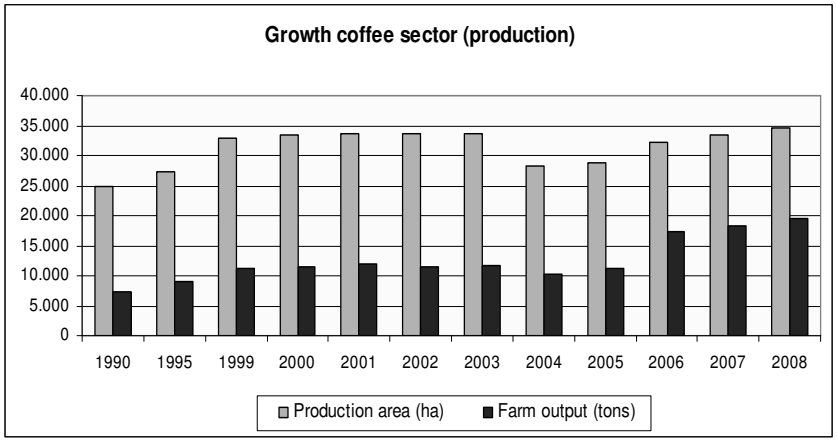
ANNEX 9 : QUALITY MANAGEMENT IN THE CHAIN

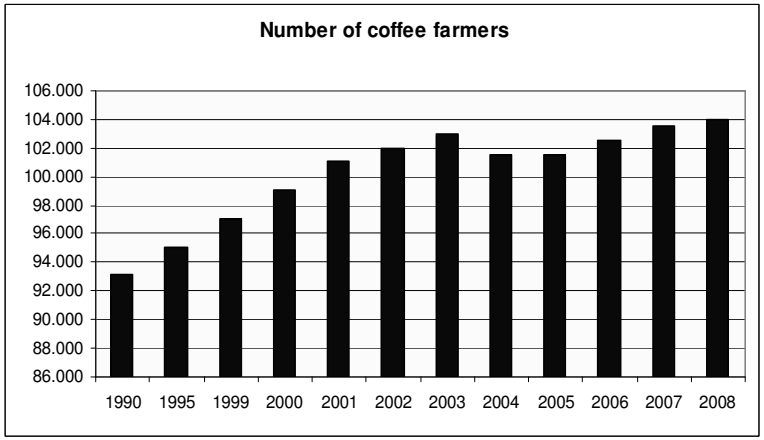
Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Beekeeper	3 grades per type of honey studied: Seder, Summur, Floral (9 in grades in total)	Fields / smell of honey / liquidity / taste / color	50% mrayee, 30% sumer, 20% sedr	Floral 9% diff. between each grade, Summur 18% diff. between each grade, Seder 34% diff. between each grade	Diseases in the bees / fields / cheating and mixing	-	no
2	Wholesaler / exporter	3 grades per type of honey studied: Seder, Summur, Floral (9 in grades in total)	Fields / smell of honey / liquidity / taste / color	60% mryee, 10% sumer, 30% sedr	Floral 11% diff. between each grade, Summur 22% diff. between each grade, Seder 31% diff. between each grade	Diseases in the bees / fields / cheating and mixing	-	no
3	Retailer	3 grades per type of honey studied: Seder, Summur, Floral (9 in grades in total)	Fields / smell of honey / liquidity / taste / color	55% mryee, 25% sumer, 20% sedr	Floral 19% diff. between each grade, Summur 15% diff. between each grade, Seder 26% diff. between each grade	-	-	no

Report coffee value chain

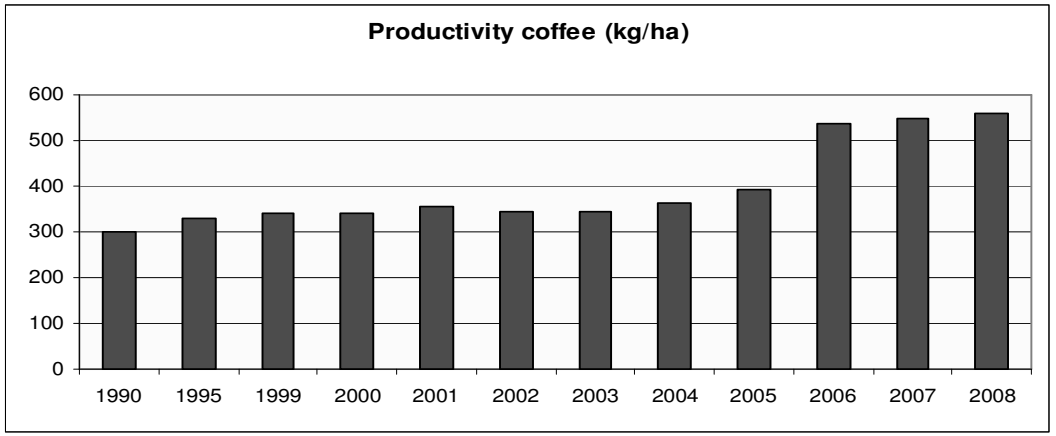
A. Sector performance

1. The Yemeni coffee sector has recovered from a production dip in 2004/2005. In 2008 it reached a historic height in terms of production area, farm output, and number of coffee farmers.

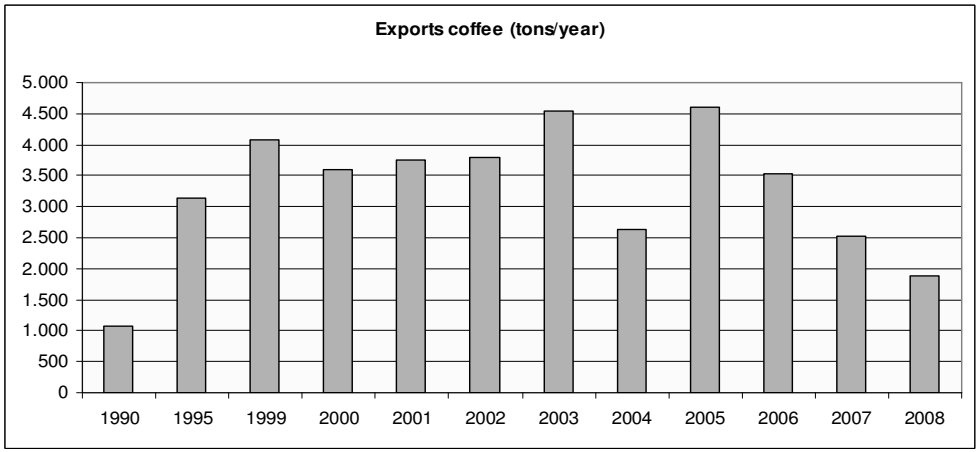




2. Remarkably, in recent years, productivity is also increasing to historic heights, despite the widely reported shortage of water and problems of pests and diseases (a number of fungi and pests attack the coffee trees; most farmers interviewed lack the resources or the inclination to purchase agrochemicals and rely on traditional methods handed down by generation). During the course of the field research, visits to nurseries indicate increased activity in the sales of coffee seedlings, one nursery in Al Mahweet north of Sana'a reported in access of 25,000 seedlings sold in 2008. In Talook, Taiz, a nursery established for business in mid 2008 has planted more than 8,000 seedlings that will be marketed during the rainy seasons of 2009.

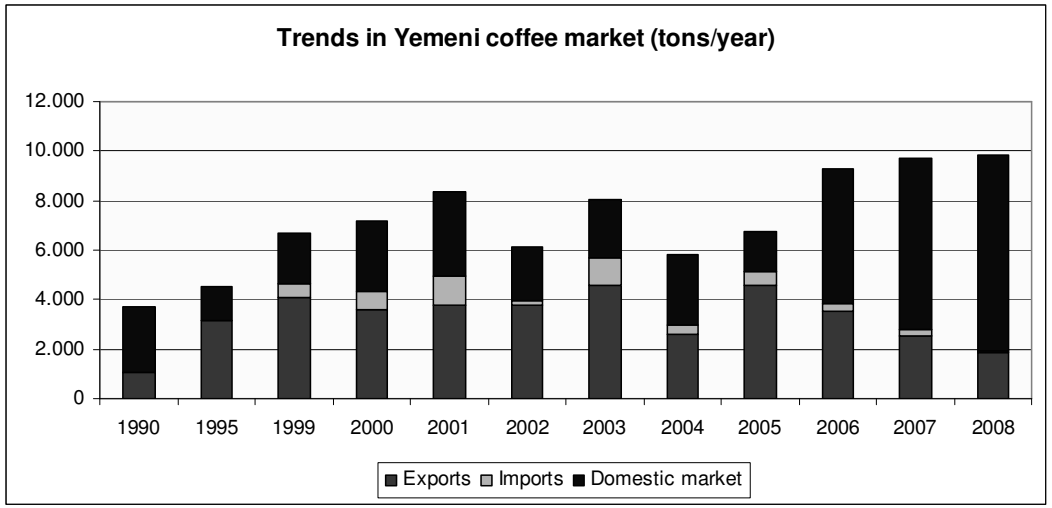


3. In sharp contrast with increasing farm production, in recent years coffee exports are decreasing sharply.



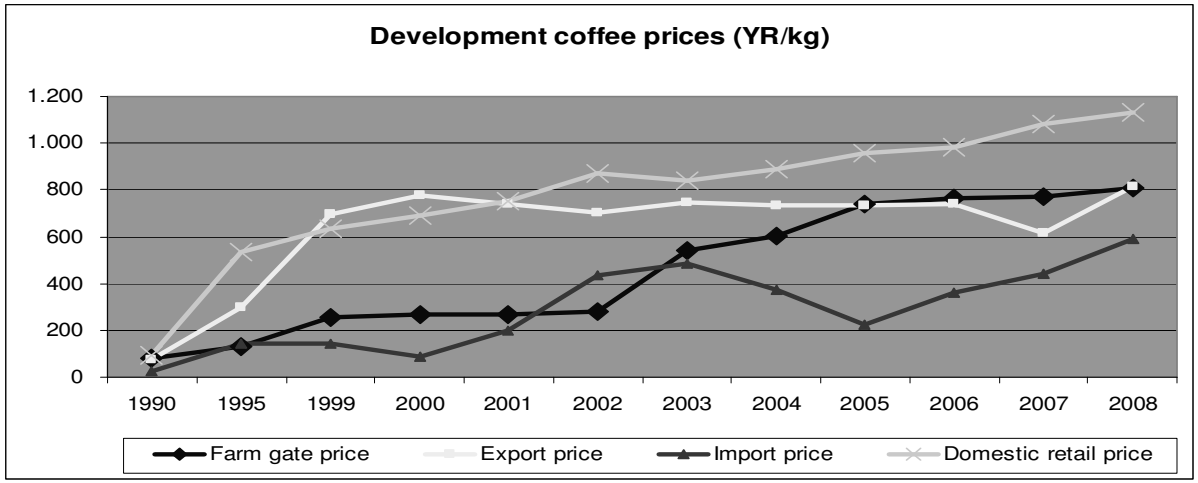
4. More coffee is consumed inside Yemen itself. The size of the domestic market has been increasing rapidly in recent years, thereby replacing exports.

> **Spice retailer and coffee roaster, Sana'a:** *Just a few years ago we used to buy 1 ton of green beans every 3/4 months. Today we buy 1 ton every 6 weeks. Embassies are buying a lot sometimes as much as 100 kilos each at a time and we are selling more to hotels. We are also roasting to different taste; we can do a Saudi mix with cardamom, Egyptian mix, a Shami mix (Syrian, Jordanian, and Palestinian), Turkish which is very popular and then the Yemeni mix. Those traveling will buy coffee as a gift from Yemen.*

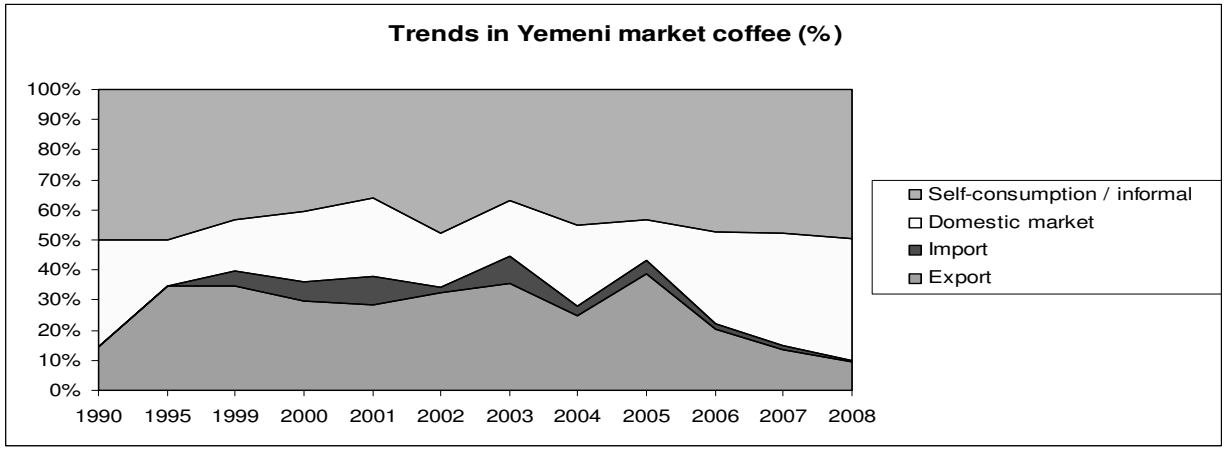


5. The substitution of exports by the domestic market is related to the high prices in domestic retail of coffee. Since 2001, domestic retail prices in coffee are higher than export prices, and the price gap has been increasing consistently. Remarkably, export prices have remained stable since 2000, presumably indicating that Yemeni coffee has reached its top price in the international market, and that further value-adding is needed to increase the price of Yemeni coffee (e.g. through certification, branding, and traceability).

> **Roaster and Exporter, Sana'a:** *In Europe and the USA all buyers want Organic coffee and I do not mean our Organic, it has to be certified. I was in Europe at a coffee event and met many buyers. When I presented my samples they liked the beans very much and then we begin speaking about traditional farming in Yemen but as soon as they hear that it is not certified as Organic they give me back the samples. It is not easy to market Yemeni coffee because it is already so expensive.*

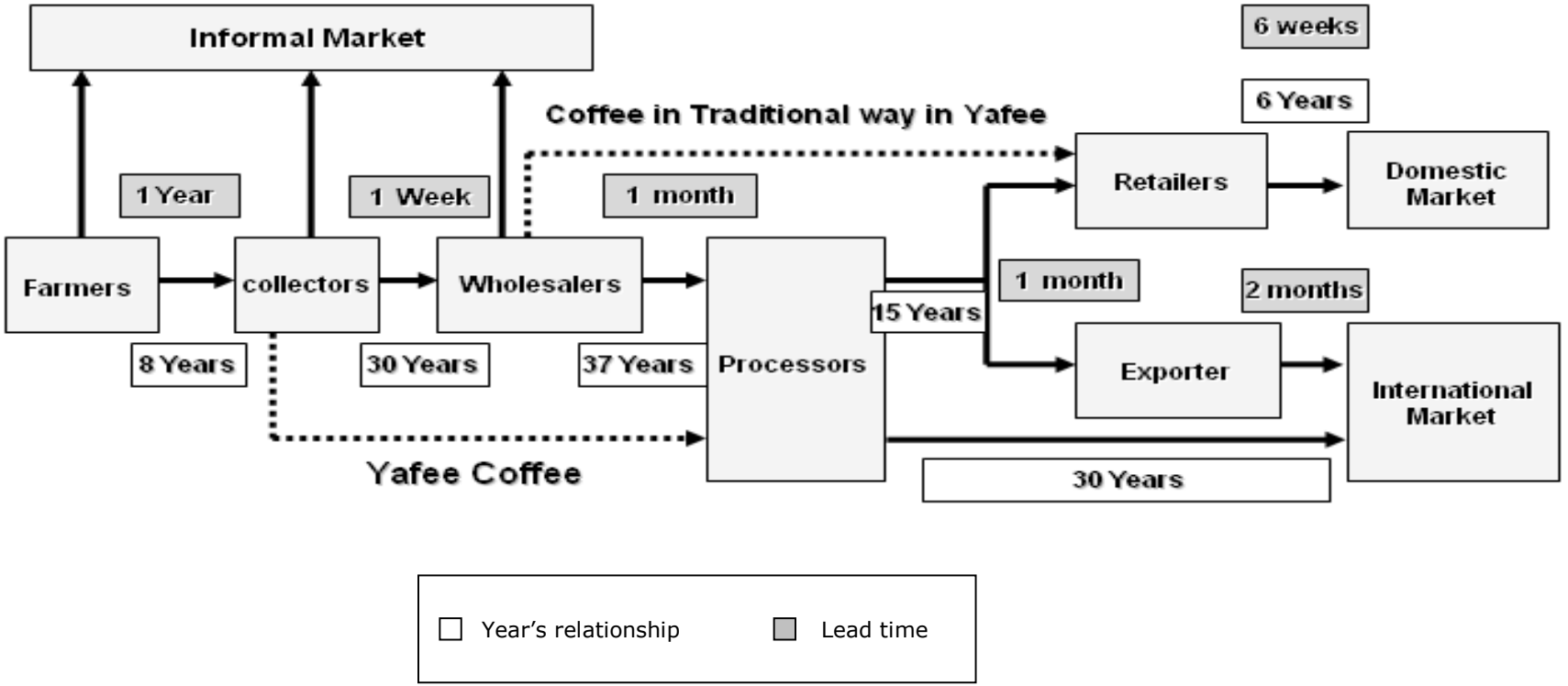


6. But a second factor is also driving the decrease of Yemeni coffee exports. More and more coffee does not enter the formal market channels. The size of the informal market has been growing consistently since 2005. This informal market consists of the following elements: (a) self-consumption on the farm; (b) gifts by the farming family in the community; (c) storage of the coffee on the farm, sometimes for several years. *Farmers perceive coffee as currency or gold; this is particularly so in Yaffee (Lahaj and Abyan in the southern regions of Yemen) were field research discovered stocks as much as 10 years old and where farmers would store fresh coffee and sell previous year's stock in accordance to liquidity needs.*



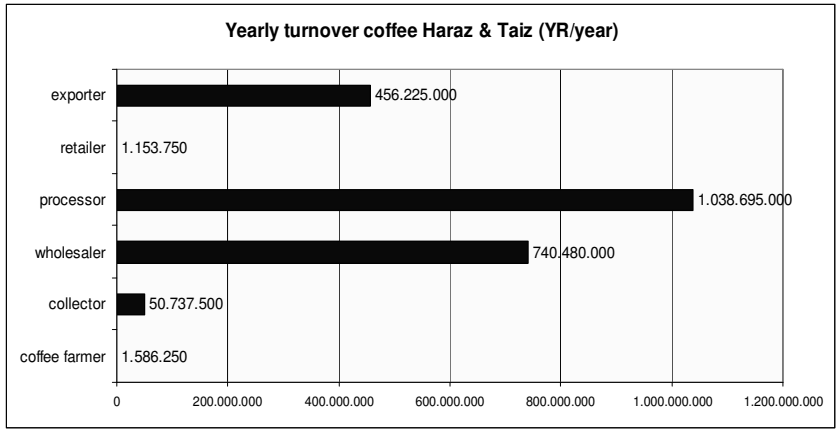
B. The value chain

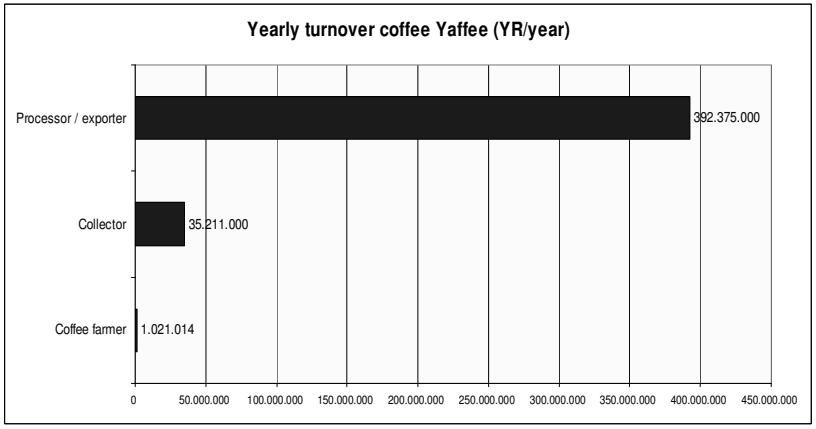
7. All coffee is hand picked and pickers may return to the tree 3 or 4 times per seasons. All farmers visited (and likely true of all coffee farmers) sun dry their cherries in the open air, on the roof tops of their homes. Because the beans are not turned, the drying is uneven and results in mold and fermentation. The cherry peel (Qesher) and the fine membrane layer that covers the green bean (Duka) are marketed and consumed as a hot drink. Depending on variety and size of the cherry, the net weight of the green bean in a kilo of coffee could range between 350 and 450 grams. The Qesher accounts for up to 450 grams and the Duka 100 grams. The separation of Qesher, Duka and green bean for commercial quantities is done in Sana'a by a number of processors. (In Abyan, Al Baida, and Shabwa to make a cup of coffee, the entire cherry is roasted and then grounded, hence separation of the bean and cherry does not occur as the whole cherry is roasted). The coffee chain is organized as follows:



8. Lead times in the coffee chain are long. The farmers do not attach value to freshness of the coffee. Farmers and traders are reported to store the coffee beans up to ten years and certainly in Yaffee farmers displayed a belief that the flavour of aged coffee was preferred to fresh coffee. This view is certainly not shared downstream in the chain. Specialist exporters with access to European, USA, and Japanese markets, mention that they pay a higher price for fresh beans.

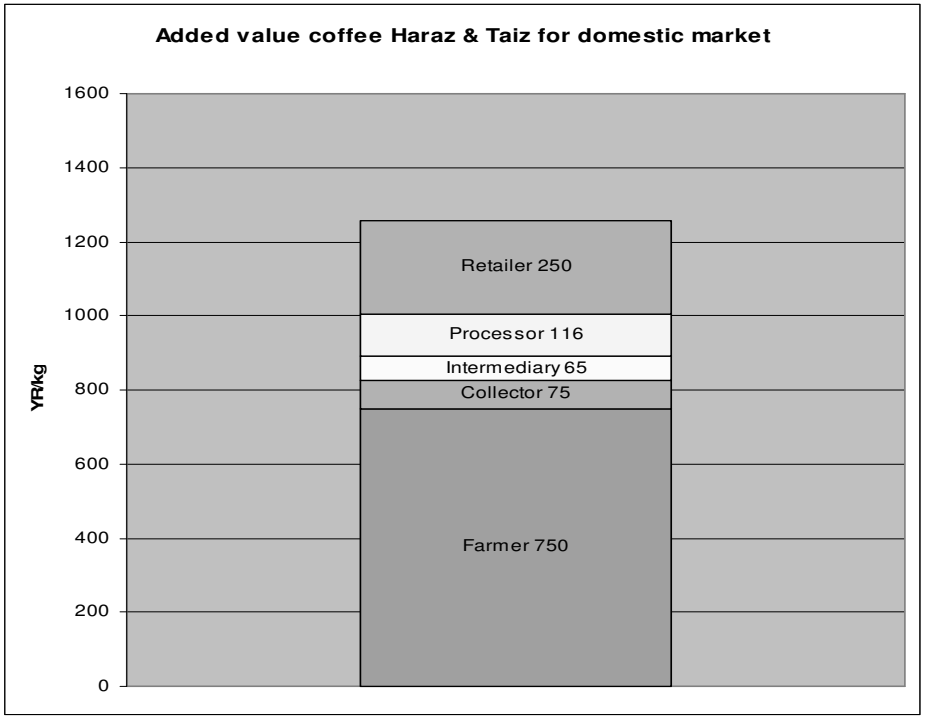
9. In terms of turnover, the processors/exporters are the dominant chain actor. Their volume of business is significantly higher than that of any other actor in the chain, particularly when they combine processing with exporting.

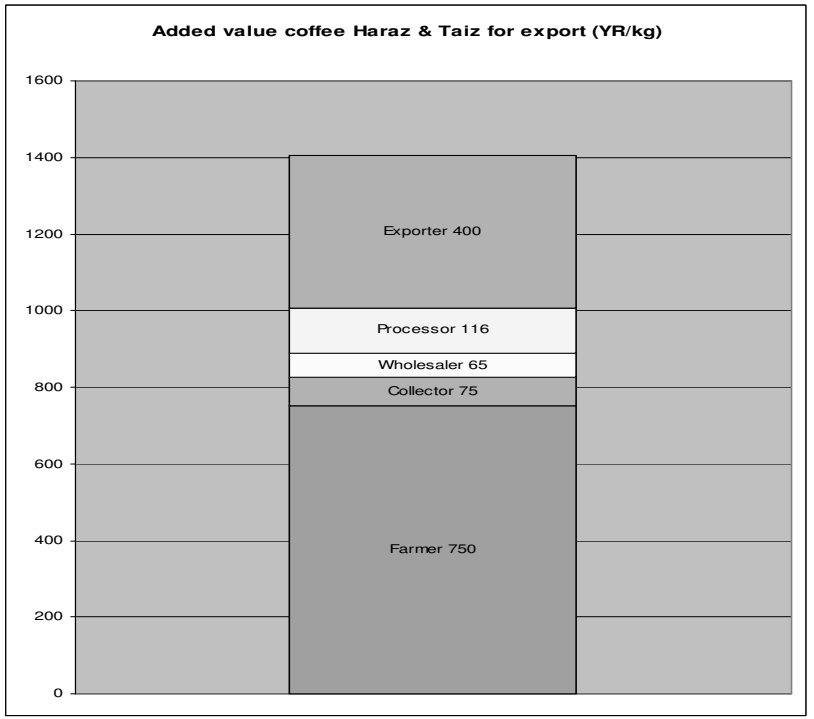


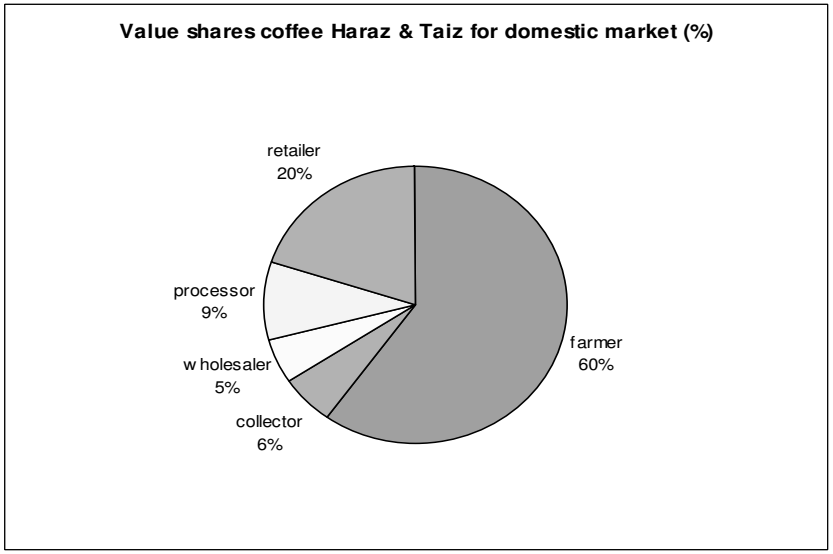


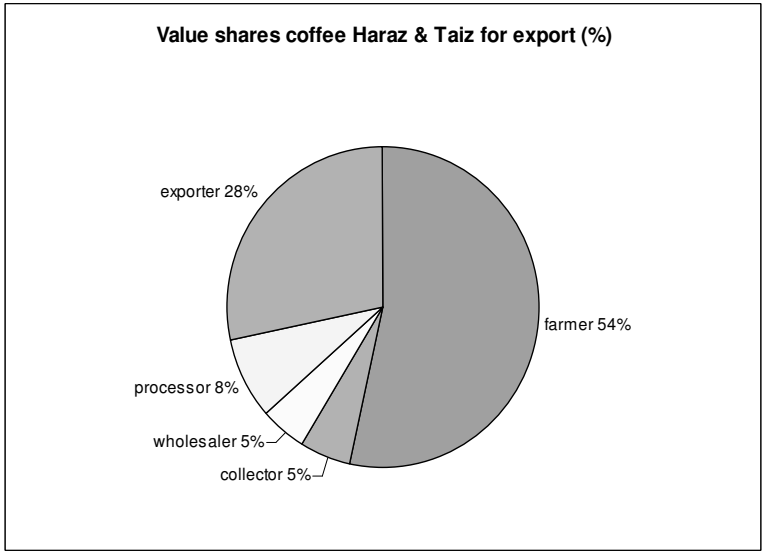
10. In terms of value share, the farmers are the dominant chain actor. Though they produce small quantities and sell individually, they receive 54% to 80% of the total product value. The midstream chain actors (collectors, wholesalers and processors) work at low operating margins (between 7% and 12% gross operating margin, see Annex 5).

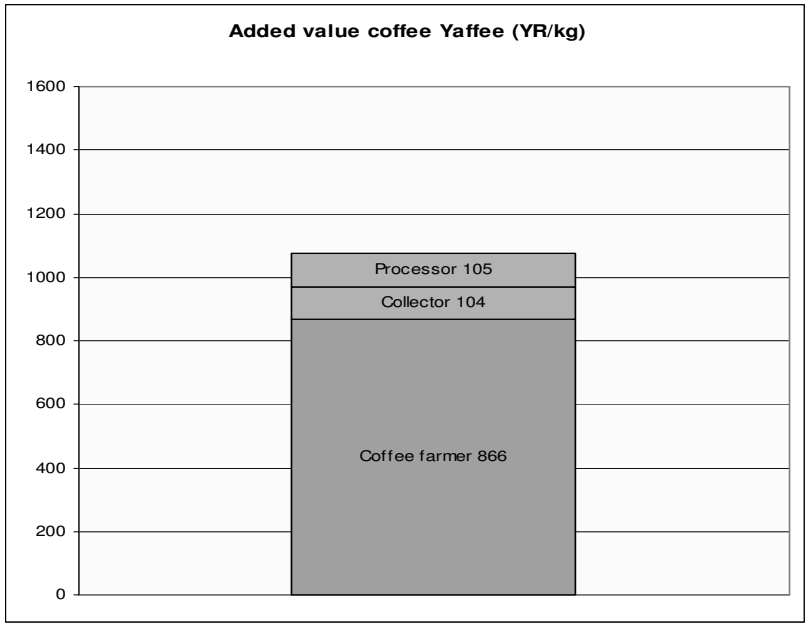
11. The low value shares for midstream chain actors is particularly problematic for the processors: they buy 1 kg of coffee berry at a buying price of 890 YR/kg, which they process into 450 grams of green coffee bean at a sales price of 1525 YR/kg, 450 grams of *qesher* at a sales price of 600 YR/kg, and 100 grams of *duka* at a sales price of 270 YR/kg. Providing a gross margin of 10%. Hence, while the processors add value to the product (processing raw coffee berries into green beans), they loose value-to-business as the net weight of the primary product is more than halved. Hence, the processors suffer from a margin squeeze, which they can only compensate through capturing the added-value of the export process.

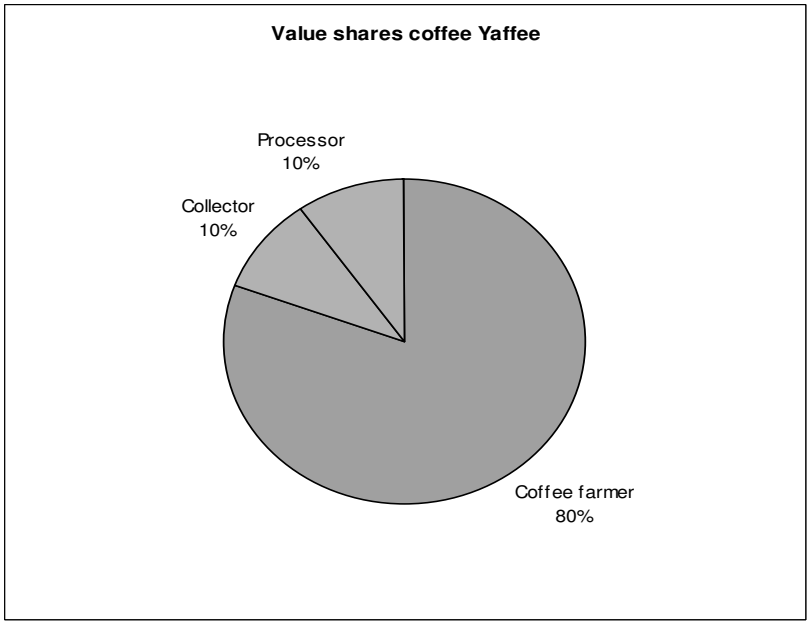

Added value coffee Haraz & Taiz for domestic market
YR/kg
1600
1400
1200
1000
800
600
400
200
0
Retailer 250
Processor 116
Intermediary 65
Collector 75
Farmer 750


Added value coffee Haraz & Taiz for export (YR/kg)
1600
1400
1200
1000
800
600
400
200
0
Exporter 400
Processor 116
Wholesaler 65
Collector 75
Farmer 750

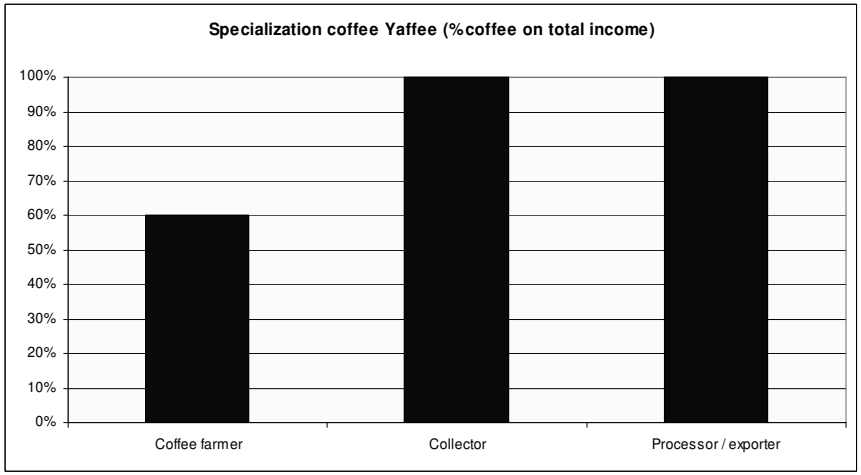

Value shares coffee Haraz & Taiz for domestic market (%)
retailer 20%
processor 9%
w holesaler 5%
collector 6%
farmer 60%

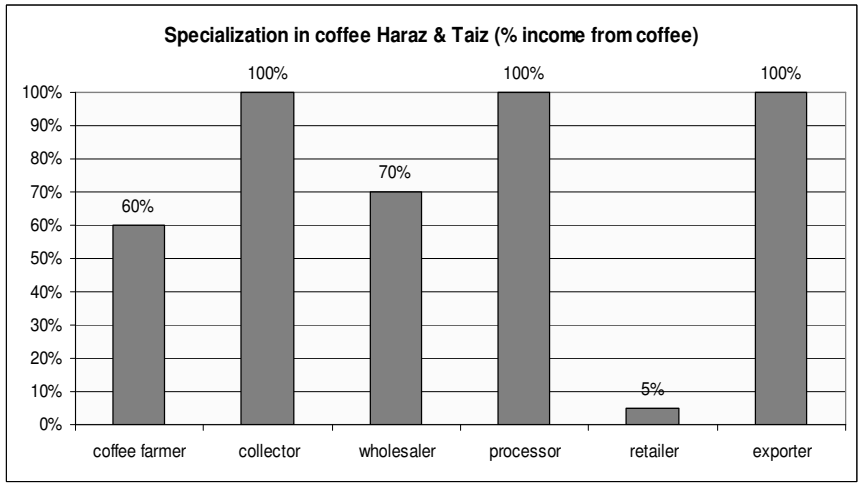

Value shares coffee Haraz & Taiz for export (%)
exporter 28%
farmer 54%
processor 8%
wholesaler 5%
collector 5%



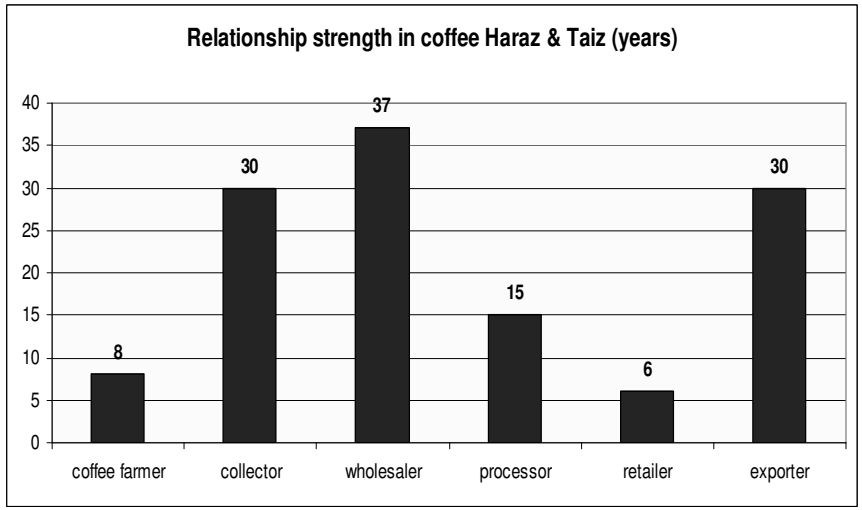


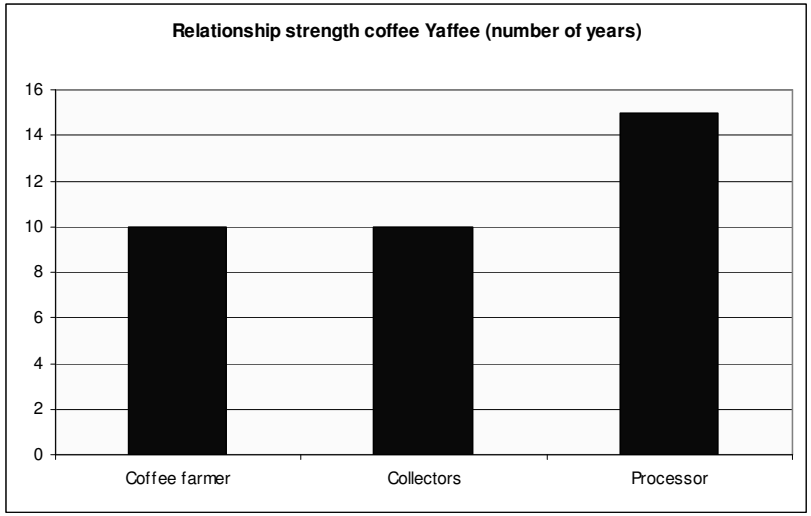
12. Collectors, processors and exporters are highly specialized chain actors, deriving 100% of their income from coffee. Farmers, wholesalers and retailers tend to have other business lines beside coffee.





13. Business relations in the coffee chain are long-term. In Yaffee the relations are at least 10 years (prior to the unification of Yemen in 1990 a command market system applied – Yaffee coffee was bought by the central government). In Haraz & Taiz the relations are between 8 years and 37 years. It is remarkable that farmers are less solidly integrated into the value chain: apparently they switch from one business partner to another more frequently than the other actors in the coffee chain.





14. In the coffee chain of Haraz & Taiz, where business relations are more long-term, there are credit flows between buyer and seller. In Yaffee trade credit is absent, but the affluent Yaffee expatriate community in the gulf do trade or barter with Yaffee coffee farmers.

> **Coffee farmer (150 trees) and Doctor, Wadi Yahar, Yaffee**: *These trees (coffee) have been in the family for generations, we consider them as members of the family. We send beans each year to family and friends in Saudi Arabia and we keep enough for the family here. Every couple of years we receive a car or other gift in return, or if I need money the send me money.*

15. Buyers and sellers usually exchange information on volumes, quality and prices, but there seem to be no significant coordination taking place in the coffee chain (see also section on quality management).

C. The chain environment

16. Farmers and traders are not organized; they operate individually. Collectors arrive at the farm, and in most cases negotiate on a one by one basis. However, farmers in Yaffee appear to be aware market situations.

> **Coffee farmer and member of the Dhi Nakib Coffee Association in Dhi Nakib, Yaffee:** *Prices fall when imports increase. When we know that coffee has arrived in Aden, we do not sell; sometimes we just wait until near Ramadhan when prices are better than we sell. We want to protect our price but also important for us is to prevent mixing of Yaffee coffee with imports or other local varieties. We would like to keep the Yaffee coffee image protected especially in our Saudi market, but traders treat all coffee as one.*

17. None of the chain actors reports significant relations with outside chain supporters. Government agencies do not play a role, and banks are remarkably absent, even at the level of processors and exporters.

D. Constraints and opportunities in the coffee chain

18. The chain actors report a wide range of constraints:
    - Farmers are concerned with the shortage of water, pests and diseases, qat plant as competitor and the high costs of fertilizers, and wage labour;

> **Coffee farmer, Dhi Nakib, Yafee (plantations were usually in the wadi with each farmer seperated by a stone wall):** *You can see from how yellow the leaves are that water is a problem. Some of these trees will need uprooting because of drought. Other trees will produce less coffee and poor quality small cherries. This farmer here has better coffee, see his trees are greener because he buys water from a van. It can cost 1000 YR per tree, and if it is really dry than you can expect to water 4 times and pay 4000 YR.*

    - Collectors and wholesalers express lack of access to trade credit, lack of supply, bad roads, and high taxes;
    - Processors/exporters report lack of supply, faulty quality assurance, cheating, and lack of marketing.
    - Weak information flows between farmers and specialist exporters on opportunities and needs (indeed this includes specialist buyers in developed markets as indicated in meetings with buyers at a European organic event held in February, 2009 and follow-up meetings with specialist buyers).

19. All chain actors express strong willingness to continue to invest in coffee business. They perceive the following business opportunities:
    - Farmers mention value-adding (roasting and packaging);
    - Collectors and wholesalers mention improvement of the quality of the coffee and penetration of new markets;
    - Processors and exporters mention better packaging, better quality, and branding the image of Yemeni coffee.

E. Quality management and consumer focus

20. All chain actors distinguish different coffee quality grades. They know the quality indicators, the price differential, and the factors that influence product quality. However, there is not a clearly defined quality grading system that is consistently applied from farmer to consumer. At each stage of the value chain, the number, names and proportion of the quality grades change. Moreover, each region of Yemen has its own grading system and units of measurements. Hence, in the end, the coffee quality grading system does not have the desired effect: the standardization, improvement and rewarding of Yemeni coffee quality in order to satisfy the consumer, either in the domestic market or abroad.

COFFEE QUALITY GRADES YAFFEE			
Chain actor	**Quality grades**	**% of total volume**	**Price (YR/kg)**
Coffee farmer	Grade 1	70%	1.000
	Grade 2	30%	870
Collector	Grade 1	60%	1.030
	Grade 2	20%	1.000
	Grade 3	20%	970
Processor	1: Yaffee	60%	1.900
	2: Ismali	10%	1.600
	3: Kwlaani	10%	1.400
	4: Haymee	10%	1.225
	5: Matree	10%	1.075

COFFEE QUALITY GRADES HARAZ & TAIZ			
Chain actor	**Quality grades**	**% of total volume**	**Price (YR/kg)**
Coffee farmer	1: Gadee Abyad	65%	800
	2: Hrazi	35%	700
Collector	1: Mahalany	?	?
	2: Borayee kafif	?	?
Wholesaler	1: Mahalany	?	?
	2: Borayee	?	?
	3: Hrazi	?	?
Processor	1: Ismali	60%	1.525
	2: Kwlaani	10%	1.400
	3: Haymee	10%	1.300
	4: Matree	10%	1.225
Retailer	1: Matree	90%	1.775
	2: Hrazi	10%	1.475
Exporter	1: Ismali	20%	1.925
	2: Kwlaani	20%	1.400
	3: Haymee	20%	1.225
	4: Matree	20%	1.075

21. The coffee chain actors and Yemeni consumers attach great value to the origin of coffee. However, with the exception of a small group of 500 farmers in Haraz there is no traceability system in place. The case presented in point 17 above insinuates towards a tracing system at the farmer level but with little buy-in from traders.

22. Consumer-focus:
    - Exporters mention demand for Organic certified and traceability.
    - Farmers lack clarity on customer requirements (storing fresh beans)
    - Processors aware of size, fullness and freshness requirement of exporters however recently they seem to keep best beans for their own export clients.

Specialized exporter, Sana'a: *We do not deal in qesher, it is too complicated and messy. We export green beans to specialized buyers in Japan, Europe, the US and some clients in the gulf. We have invested a lot in machinery for sorting and grading so that we guarantee for our clients really good beans that are free of impurities and are the same size and not broken. We resell the weaker beans into the local market. We used to ask for the best green beans from the processors, and within a few days we would have our beans, mostly good with little being resold into the local market. These days it takes much longer to get the beans we want from the processor, and the quality is not as good as before because, the processor is now exporting too and needs the good beans himself. I remember before the processors used to call us when they had good stock, now we chase them.*

F. Overall conclusions

23. The coffee sector shows increasing production performance, but a decreasing market performance. Production area and farm output are going up since 2005, but less coffee is being exported and more coffee does not enter formal market channels.

24. The coffee chain actors attach great value to product quality and traceability; however, there are no appropriate systems in place.

25. Farmers are less specialized and less integrated than the other chain actors. They appear to be the weakest link in the chain.

26. Deficiencies of information. This is common in all parts of the chain; at the farmer level they lack knowledge on the lucrative final market and its requirements and benefits. Traders too share on these information deficiencies as do buyers in markets further a field.

G. Policy recommendations

27. Support access to specialty markets even before certification.

28. Implement effective and consistent systems for quality grading, certification, and traceability.

29. Exploit opportunities for origin-branding based on promoting sound information flows into the chain from end markets to farmers.

30. Train and support the farmers to become specialized, fully-fledged business partners in the coffee chain

31. Support farmers in water harvesting and irrigation systems

ANNEX 1: SUB-SECTOR GROWTH COFFEE

Year	Number of smallholder producers	Production area (ha)	Area per produce r (ha)	Productivity (kg/ha)	Farm output (tons/year)	Farm gate price (YR/kg)	Farm output (million YR/year)	Export (tons)	Export price (YR/kg)	Export value (millions YR/year)	Export (%)
1990	93,113	24,804	0.3	299	7,411	80	593	1,068	74	79	14%
1995	95,094	27,347	0.3	329	8,993	128	1,151	3,130	301	942	35%
1999	97,075	32,837	0.3	341	11,182	257	2,874	4,089	695	2,840	35%
2000	99,056	33,443	0.3	340	11,363	266	3,023	3,603	778	2,804	30%
2001	101,037	33,641	0.3	354	11,906	266	3,167	3,747	742	2,780	29%
2002	102,028	33,545	0.3	343	11,499	279	3,213	3,799	702	2,668	33%
2003	103,018	33,662	0.3	345	11,608	543	6,299	4,549	745	3,390	36%
2004	101,532	28,354	0.3	362	10,260	600	6,158	2,627	736	1,935	25%
2005	101,532	28,821	0.3	393	11,331	740	8,389	4,598	732	3,366	39%
2006	102,523	32,260	0.3	536	17,292	763	13,190	3,534	741	2,618	20%
2007	103,514	33,451	0.3	548	18,330	771	14,132	2,527	613	1,548	14%
2008	104,001	34,686	0.3	560	19,430	809	15,725	1,878	812	1,524	10%

Year	Number of smallholder producers	Import (tons)	Import price (YR/kg)	Import value (million YR/year)	Import (%)	Domestic market (tons)	Retail price (YR/kg)	Domestic market value (millions YR/year)	Domestic (%)	Self-consumption and informal market (%)
1990	93,113	2	25	0	0%	2,640	95.00	251	36%	50%
1995	95,094	4	143	1	0%	1,370	535.00	733	15%	50%
1999	97,075	542	141	77	5%	2,044	632.00	1,292	17%	43%
2000	99,056	753	88	66	6%	2,832	692.00	1,959	23%	41%
2001	101,037	1,211	201	244	9%	3,417	754.00	2,576	26%	36%
2002	102,028	190	435	83	2%	2,141	872.00	1,867	18%	48%
2003	103,018	1,120	486	545	9%	2,375	839.00	1,993	19%	37%
2004	101,532	341	375	128	3%	2,844	889.00	2,528	27%	45%
2005	101,532	538	226	121	5%	1,606	956.00	1,535	14%	43%
2006	102,523	320	362	116	2%	5,432	980.00	5,323	31%	47%
2007	103,514	269	439	118	1%	6,907	1,079.00	7,453	37%	48%
2008	104,001	58	593	34	0%	7,895	1,133.00	8,945	41%	50%

ANNEX 2a: CHAIN MAP COFFEE YAFFEE

Step number	Value chain actor	Chain function	Lead time (period of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Coffee farmer	Farming (raising coffee tree for 3-4 years, cleaning the soil 4 times/year, harvest, drying, storing, and sell it).	1 year	Yafee (al hade) (de nakeb)	Average 250 trees
2	Collector	Trader / buy from farmers, put it in bags, then sell to traders	1 year (traders stock and sell according to liquidity needs as well as price movements)	Albyedah	Cars and storage room
3	Processor / exporter	Buy from the village trader and process (peel cherry and sell the cherry too) Yaffee green coffee is primarily exporter to Saudi, some roast for local market but not much	6 months	Sanaa	A handful of large traders (100ton - 300ton) export Yaffee coffee to Saudi (we think less than 7/8). They possess peeling machines, cleaning instruments (local tools), big stores, weighing scales and bags

ANNEX 2b: CHAIN MAP COFFEE HARAZ & TAIZ

Step number	Value chain actor	Chain function	Lead time (period of product in hands)	Location(s)	Actor profile
1	Coffee farmer	Farming (raising coffee tree for 3-4 years, cleaning the soil 2 times/year, fertilize, harvest, drying, storing, and sell it).	1 year	Haraz, and Taiz	Two farmers interviewed had 1000 coffee trees, however the area average in Taiz was 150 in Taiz and Haraz 300. Average for both regions is 225
2	Collector	Buying coffee from farmers, transfer it into Bagel, and sell it to wholesalers there	Around 7 days	Bara'a, and Al-mahwit	Rented cars //// rented donkeys //// workers stores
3	Wholesaler	Buying coffee from collectors, grading, package it in pages, then sell it to traders	Around 1 month	Bagel	Stores //// scales
4	Processor	Buy from the village trader and process it to be sold as green coffee , peeled (peel also marketed)	6 months	Sanna	Peeling machines , roasters , cleaning/sorting equipment, big pages , big stores ////////
5	Retailer	Buy the coffee from the processors as green coffee and sell it in the market and some of them roast	Yearly; specially in ramadan and haj seasons	Sanna	These are usually spice shops located in busy market streets (high rent). They also own small vans, and invest a lot in store decorations ect…
6	exporter	Buy from processors and traders and process it to be ready for export, packaging etc. This is usually green bean but with additional sorting and packaged in jute bags for the US, Japan and Gulf market. Two exporters in recent years have successfully exported to Europe (Germany and Holland)	yearly	Sanna	Peeling machines // Separating machines to remove alien objects e.g. bullets, cartridges etc // Vacuum sorting machines// roaster// stores // packing machines /// ect.

ANNEX 3a: PROFILE CHAIN ACTORS COFFEE YAFFEE

Step number	Value chain actor	Volume of business (kg/year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources	% of coffee on total income	Sources of capital
1	Coffee farmer	1,179	1,021,014	5,105	1,021,014	5,105	Van-driver, soldier, qat grower, guard, and worker	60%	100 % private
2	Collector	36,300	35,211,000	176,055	3,775,200	18,876	None	100%	100 % private
3	Processor / exporter	365,000	392,375,000	1,961,875	38,325,000	191,625	None	100%	?

Continued from previous ANNEX 3a: PROFILE CHAIN ACTORS COFFEE YAFFEE

Step number	Value chain actor	Three main perceived constraints	Main perceived business opportunity	Top priority for investment
1	Coffee farmer	Shortage of water, diseases, expensive labor, qat plant as competitor	Small factory for peeling, roasting, crashing, and packaging the coffee, in additional looking for high price market	All of farmers we've interviewed wanted to invest in the same field "coffee"
2	Collector	Low quantity of fresh coffee, and roasting factory is unavailable.	Peeling, roasting, and crashing the coffee, looking for better markets	Invest at the same field "coffee "
3	Processor / exporter	Weak marketing; production is very low	Exporting more; better packaging	Invest in buying more coffee and export it

ANNEX 3b-1: PROFILE CHAIN ACTORS COFFEE HARAZ & TAIZ

Step number	Value chain actor	Volume of business (kg/year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources (besides coffee)
1	Coffee farmer	2,115	1,586,250	7,931	1,586,250	7,931	various jobs: van-drivers, soldiers, growing Qat, guards, and laborers
2	Collector	61,500	50,737,500	253,688	4,612,500	23,063	None
3	Wholesaler	832,000	740,480,000	3,702,400	54,080,000	270,400	Other trading, cold-storage services
4	Processor	1,032,500	1,038,695,000	5,193,475	119,770,000	598,850	None
5	Retailer	650	1,153,750	5,769	162,500	813	Spices shop
6	Exporter	237,000	456,225,000	2,281,125	94,800,000	474,000	Mixed trades

ANNEX 3b-2: PROFILE CHAIN ACTORS COFFEE HARAZ & TAIZ

Step number	Value chain actor	% of coffee on total income	Sources of capital, including %	Three main perceived constraints	Main perceived business opportunity	Top priority for investment
1	Coffee farmer	60%	100 % private	Shortage in water, disease, expensive fertilizer, and labor, qat plant as a competitor	Looking for high price market	All of farmers we've interviewed wanted to invest in the same field "coffee"
2	Collector	100%	100 % private	Low pre-finance, bad roads	High quality coffee, and high demand in the market	Invest at the same field "coffee "
3	Wholesaler	70%	100 % private	Low finance supporting, and taxes	High quality coffee, and high demand in the market	Invest at the same field "coffee"
4	Processor	100%	_____	Week marketing/// production is very low	Exporting more /// better packaging	Invest in buying coffee
5	Retailer	5%	family	High prices; dry weather; low income	New packaging as gifts	Spices
6	Exporter	100%	_____	There is no quality monitoring; production is very low; cheating	Cheap labor , quality and image of Yemeni coffee	Invest in coffee buying and selling there are high demands world wide

ANNEX 4a: CHAIN RELATIONS COFFEE YAFFEE

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Coffee farmer	10	Cash	Quality and quantity	-	-	-	-	-	-
2	Collectors	10	Cash payment	Quantity, quality, and price	10	Cash payment	Quality, and quantity	None	One of them has peer "family"	None
3	Processor	15	Cash	Quantity	15	Cash payments	Quantity	None	None	None

ANNEX 4b : CHAIN RELATIONS COFFEE HARAZ & TAIZ

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Coffee farmer	8	Finance from trader in Sana'a, and some traders buy coffee before it grows	Quality and quantity	-	None	None	None	Just one of farmer interviewed has peer "family" but we suspect this to be common	Water tank in the valley in "Haraz".
2	Collector	30	Credit for short period of time	Quantity, quality, and price	30	Pre-finance for some farmers, and cash payment	None	None	None	None
3	Wholesaler	37	Credit for short period of time	Quantity, quality, and price	37	Credit, and cash payment	None	None	None	None
4	Processor	15	Cash	Quantity	15	Cash payments	Quantity	None	None	None
5	Retailer	6	Credit for some trusted but mainly cash	Quality and quantity	6	Buy in credit from traders	Quantity , quality ,, process	None	None	None
6	Exporter	30	Credit in some cases	Quality and quantity	30	One export (also green bean processor) offers finance to some farmers near Sana'a	Quality and quantity	None	None	None

ANNEX 5a: PRICES, MARGINS AND VALUE SHARES IN COFFEE YAFFEE

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share (%)
1	Coffee farmer		866	866	100%	81%
2	Collector	866	970	104	11%	10%
3	Processor	970	1075	105	10%	10%

ANNEX 4b: PRICES, MARGINS AND VALUE SHARES COFFEE HARAZ & TAIZ

Step number	Value chain actor	Purchase price (YR/kg)	Selling price (YR/kg)	Gross income (YR/kg)	Gross margin (%)	Value share domestic (%)	Value share export (%)
1	Farmer		750	750	100%	42%	39%
2	Collector	750	825	75	9%	4%	4%
3	Wholesaler	825	890	65	7%	4%	3%
4	Processor	890	1,006	116	12%	7%	6%
5	Retailer	1,525	1,775	250	14%	14%	
6	Exporter	1,525	1,925	400	21%		21%

ANNEX 6a: QUALITY MANAGEMENT IN COFFEE YAFFEE

Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Coffee farmer	2 grades: grade 1 is 1000 YR/kg, grade 2 is 830 YR/kg	Colors, shapes, smells	70% grade one; 30% grade two	50 yer to 170	Irrigation and storing (farmers believe storing coffee improves quality)	-	Some of farmers said, that the trader ask them to harvest quickly, and good drying
2	Collector	3 grades	Color / size / shape / smell	60% grade 1; 20% grade 2; 20% grade 3	20 to 50 yer	Fields / irrigation system / storing	None	None
3	Processor / exporter	5 grades:1 =yafee; 2= ismalli; 3= kwlaani; 4= haymee; 5= matree	Color, shape, smell	60% grade one; 40% divided by the rest	100 to 300	Irrigation; storage; processors believe older coffee is not as good - opposite to farmers	None	None

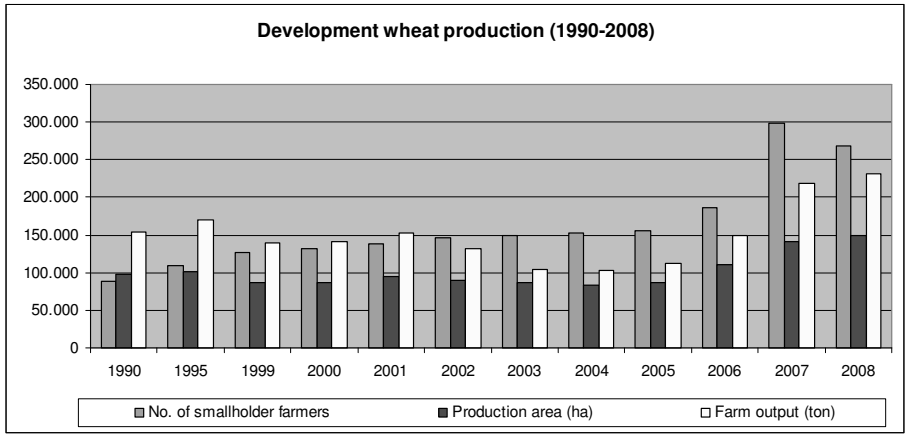
ANNEX 5b: QUALITY MANAGEMENT COFFEE HARAZ & TAIZ

Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Coffee farmer	GADEE ABYAD (White) /// HRAZI	High production, good smell, regular Shape	White GADEE is the most kind growing around 65 %	Different in prices return to the grades of the production 50 to 100	Water, soil, organic fertilizer, disease, coffee trees, and good storing	-	Some of farmers said, that the trader ask them to harvest quickly, and good drying
2	Collector	MAHALANY /// BORYE KAFIF	Color, size, shape, weight, taste		From 80 to 150	Drying mechanism / irrigation system	None	None
3	Wholesaler	MAHALANY //// BORAYEE/// HARAZI//	Color, size, shape, weight, taste		80 to 150	Drying mechanism / irrigation system	None	None
4	Processor	5 grades /// 1= ismalli 2= kwlaani 3= haymee 4= matree (different expectations to farmers and village traders and wholesalers)	Color //// shape //// smell	60 % grade one /// 40 % divided by the rest	100 to 300	Irrigation //// storing ////	None	None
5	Retailer	2 grades //// matri and hrazi	Color /// shape	90% matari //// 10% hrazi	100 and 300	Storing ///// exhibition ///	None	None
6	Exporter	5 grades /// 1= ismalli 2= kwlaani 3= haymee 4= matree ((different expectations to farmers and village traders and wholesalers)	Color /// shape //// smell	20 % for each	100 to 300 per kg	Storing /// transporting	None	Better quality, organic

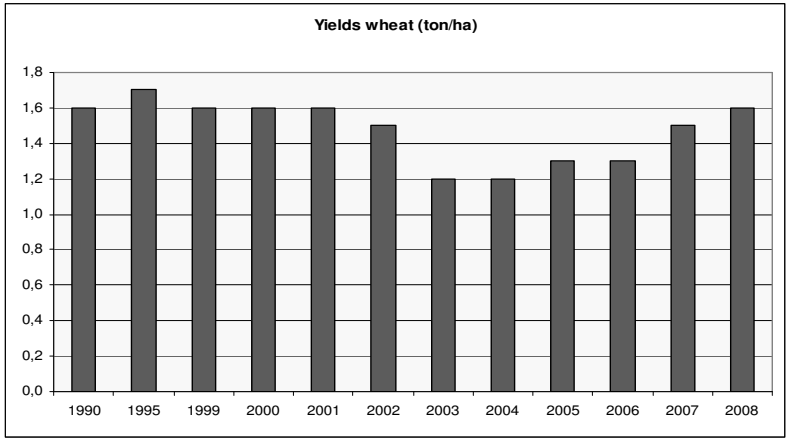
Report wheat value chain

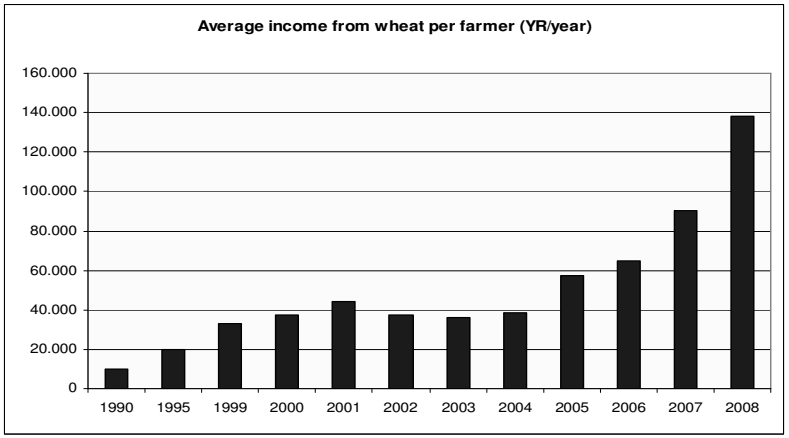
A. Sector performance

1. After a dip in the early 2000s, local wheat production is showing significant growth in recent years. There is a consistent increase in production area, number of farmers, and total farm output. This is the result of significant government support to local wheat production, inspired by a policy of national self-sufficiency under a Food Security Policy where short term government strategies overseen by the Ministry of Agriculture and Irrigation (MAI) includes increasing and improving seed production.



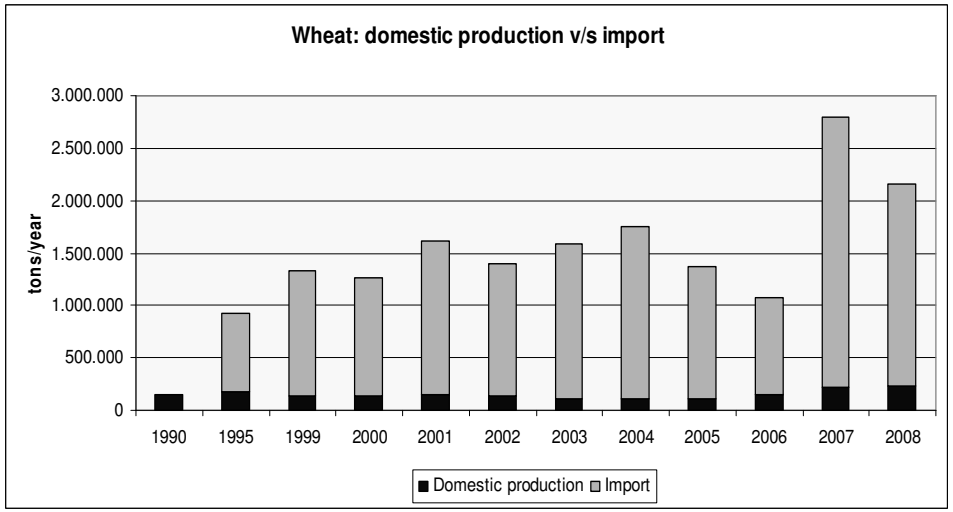
2. At farm level, the average yields and the average income from wheat are also rising since 2004.

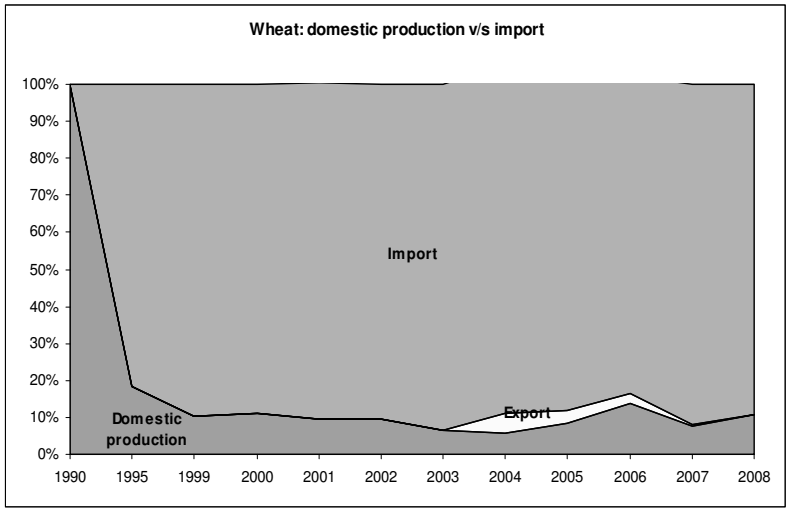


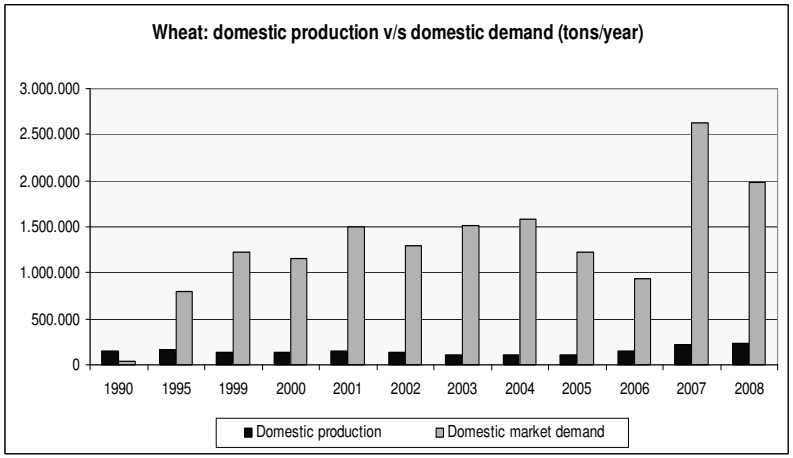


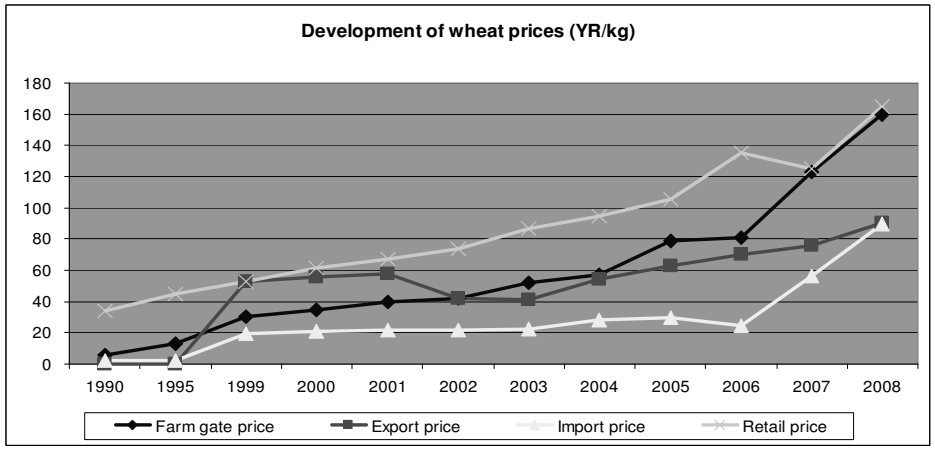
3. This study focused entirely on irrigated wheat production not rain fed. The field research centred on Mareb and Hadramout. At the stakeholder workshop held in Hadramout, chain actors (particularly farmers and agricultural extenionist) contested the yield rates present as being to low. It was felt that yields were near 4 tons/ha. Even so, those presented are national averages.

4. Despite its recent boost domestic wheat production is still insignificant in relation to wheat imports and domestic market demand.









5. Market prices and farm gate prices of wheat are consistently growing over the years, with a sharp increase since 2006. The import price is well below the domestic farm gate price. This suggests a lack of competitiveness of Yemeni wheat farmers and points to the significant efforts by the Yemeni government to stimulate local wheat production, and more recently (early 2009) even through direct purchase at (artificial) premium prices.

6. However, local wheat production cannot be compared directly with wheat imports, due to the different nature of local wheat varieties. Imported wheat is a low-price bulk product with low-protein content (bought from Australia, the USA and Syria). Local wheat varieties are rich in protein (but low in yields) and cater for specific market segments: (a) Yemeni consumers inside the country or (b) in the Gulf Region who attach value to the distinctive taste of Yemeni wheat, especially during the

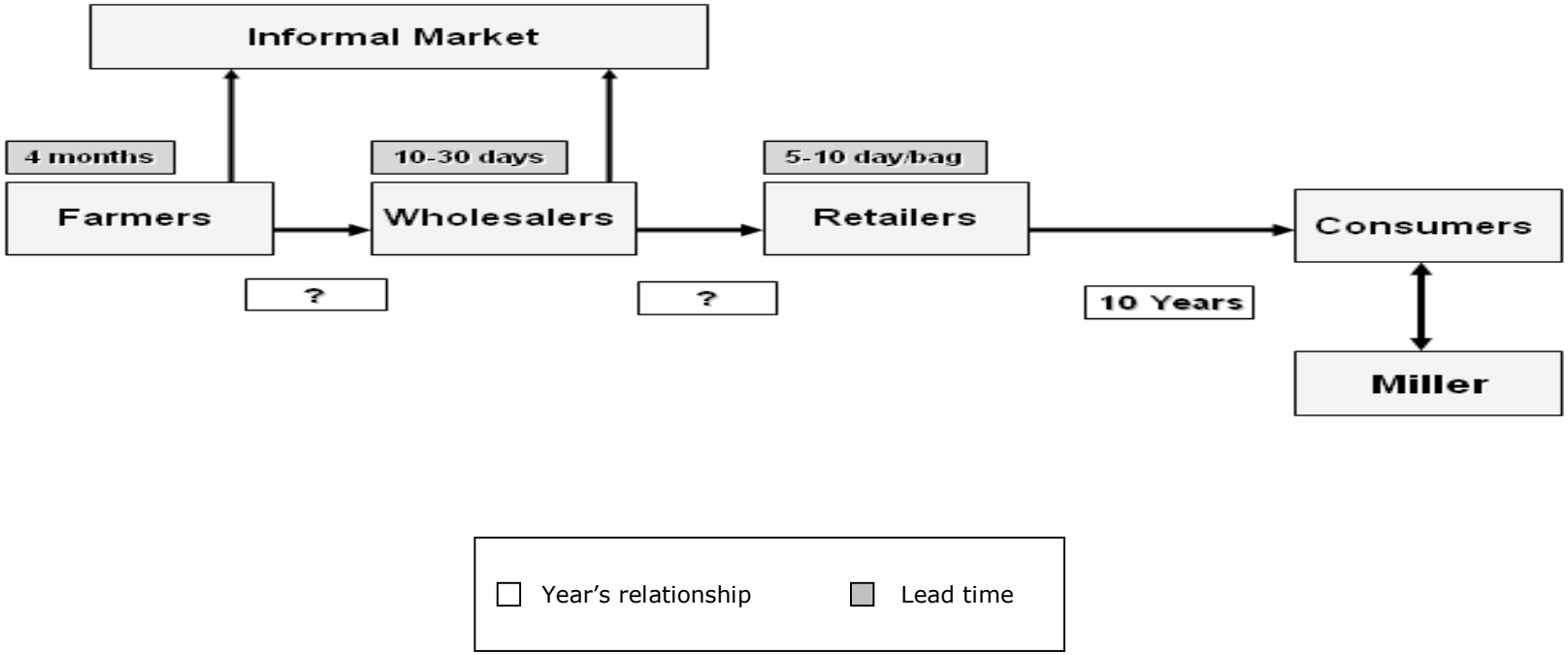
months of Ramadan; The distinctive nature of local wheat varieties can be appreciated from the fact that they are sold in the major cities through spice retail outlets rather than in ordinary supermarkets or grocery shops.

Small grocery store, Aden: *I sell imported wheat and consumers do not ask for local wheat except in ramadhan, they buy for shurba (soup), but usually they buy the baladi (local) from the spice shops. Still during ramadhan I will stock baladi for those customers who have run out and do not have time to go to the spice shops.*

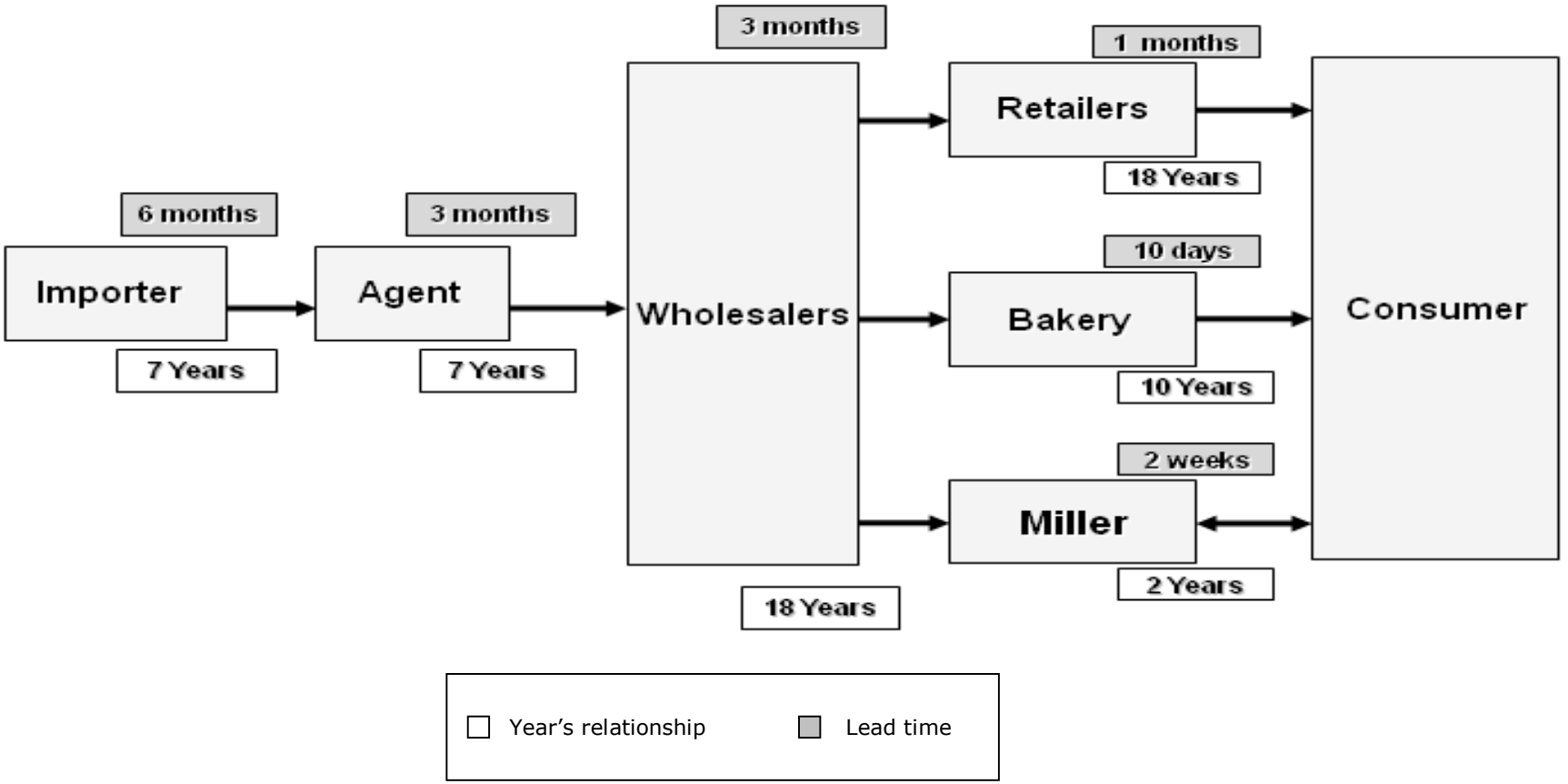
Farmer, Al Qatn Wadi Hadramout: *I grow the local variety (Halba) and the improved variety Hadramout 3. Hadramout 3 produces more. But people have not accepted the taste. I have done tests with my wife and she always realizes when I change the grain. When you make bread she says it sticks to the hand and also the taste is different. I think if we can promote Hadramout 3 at the bakery people may adopt it.*

B. The value chain

7. The local wheat chain is remarkably short. Remarkably, farmers sell individually to wholesalers despite the fact that they are organized. Informal market channels and self consumption are significant – self consumption among farmers in Mareb is as high as 60% on quantities of 15 tons. In the cities, customers purchase their wheat from the spice shops and then frequent the millers to grind according to their taste. In Hadramout it is common for farmers to sell wheat in small quantities to individual request. The local wheat value chain is organized as follows:

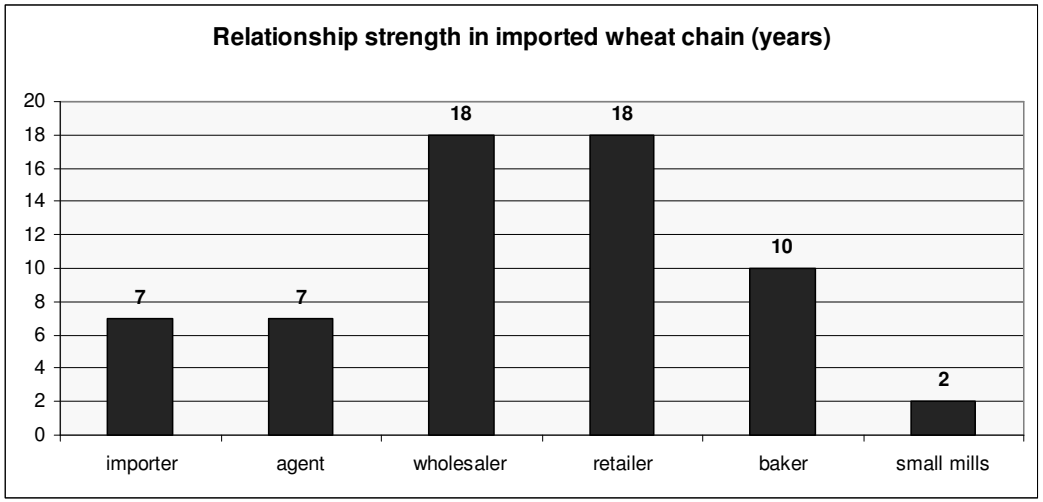


8. The imported wheat chain relies upon an extensive network of wholesalers that purchase from a handful of key agents who represent the importers. The majority of imported wheat is processed at the sea port (Aden and Hodiedah) by the importers. However one such importer mentioned that 10% of the company's wheat is sold as grain. The imported wheat value chain is organized as follows:

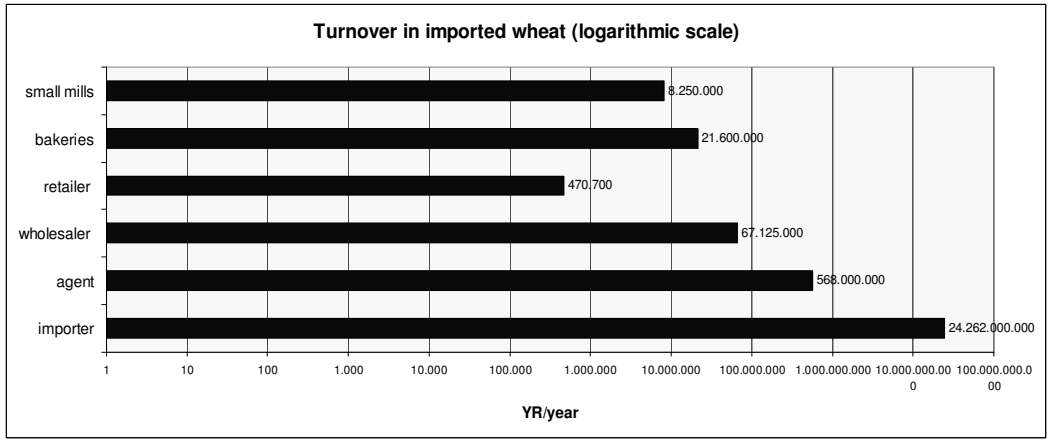


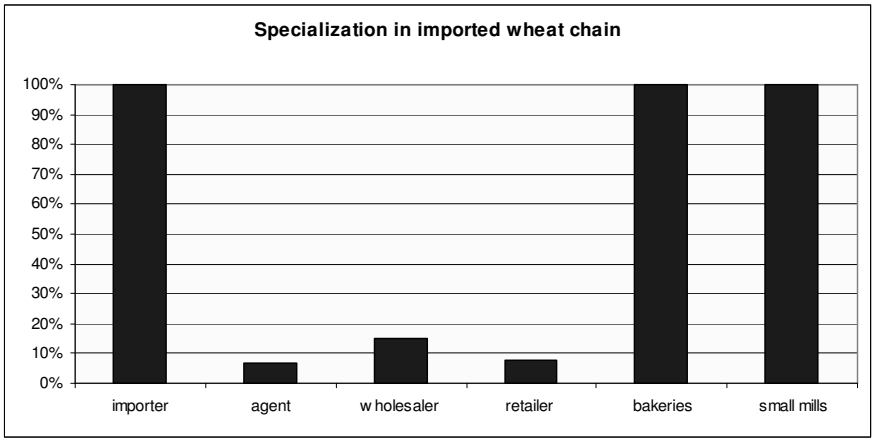
9. Wheat can be stored easily, so lead times are not important in the chain. At the retail end of the chain, lead times tend to be short, because wheat is a FMCG (fast moving consumer good).

10. The imported-wheat chain features long-term business relations, from 7 years up to 18 years. Supplier credit is very common and can take up to 180 days. The chain actors coordinate especially on quality grades and volumes of the product. By contrast, the local-wheat chain features short-term business relations. There seems to be a spot market, where farmers and traders sell to whoever offers the best deal. Information exchange is very limited. Only retailers have long-term relations with their customers, which indicate the speciality character of the local Yemeni wheat varieties.

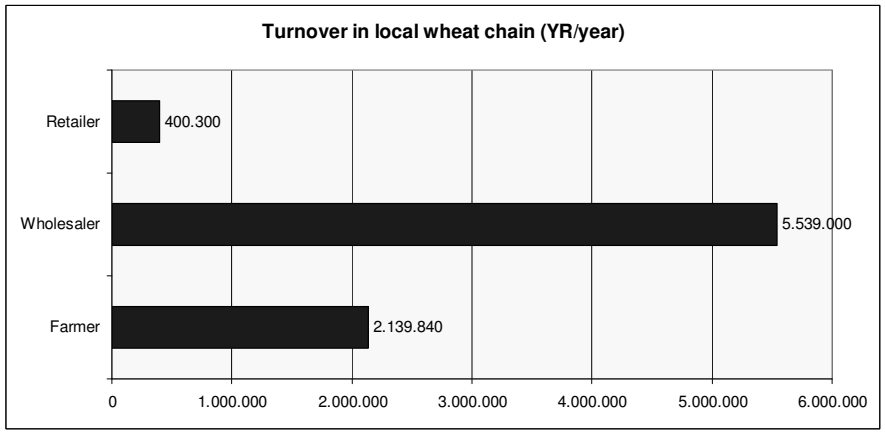


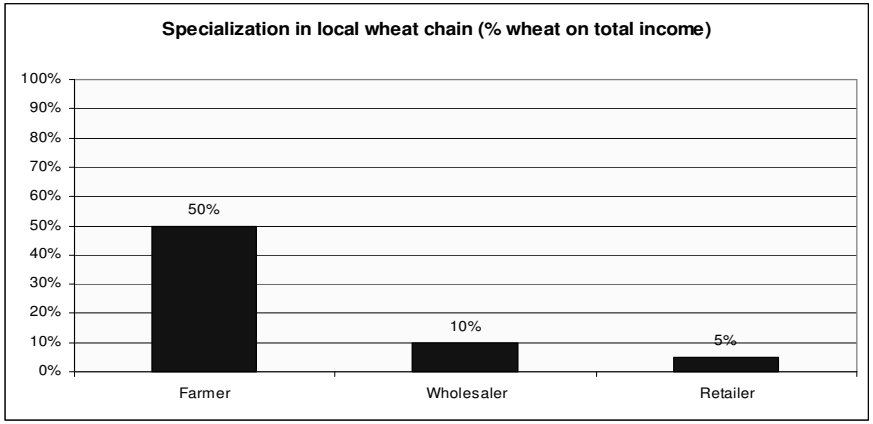
11. The imported-wheat chain features a variety of very large and very small companies. The importers are huge enterprises reaching a turnover of more than hundred millions US dollars, while the retailers' turnover from wheat is only a few thousand US dollars. The importers, bakers and small millers are highly specialized, while the agents, wholesalers and retailers maintain many other business lines.





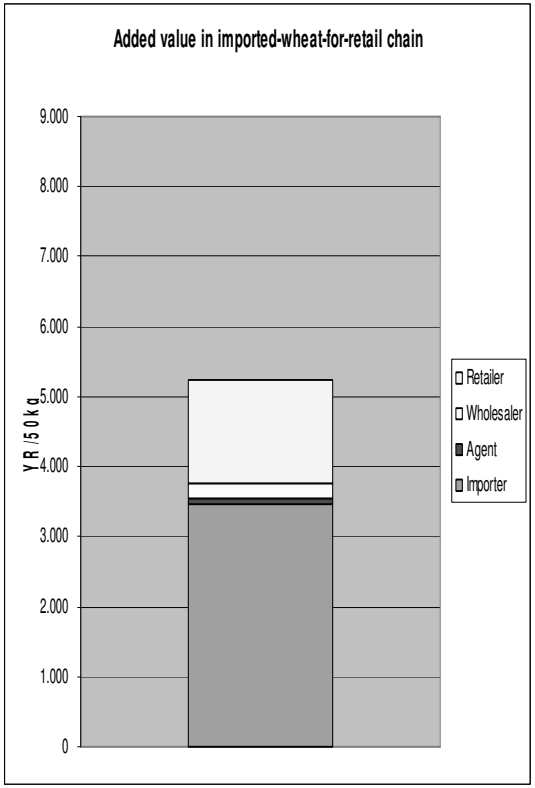
12. By contrast, the local-wheat chain features only SMEs. Farmers, wholesalers and retailers reach only modest turnover, even considering their other business lines. At the same time, they are little specialized in wheat; they maintain many other business activities.

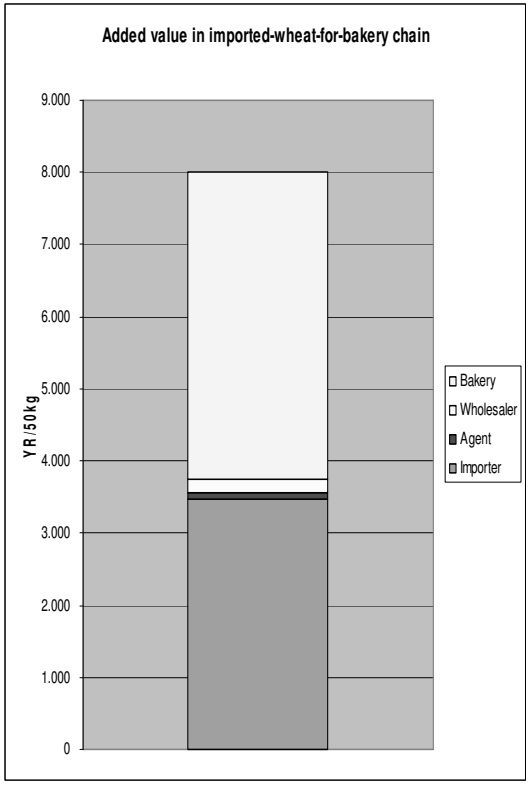


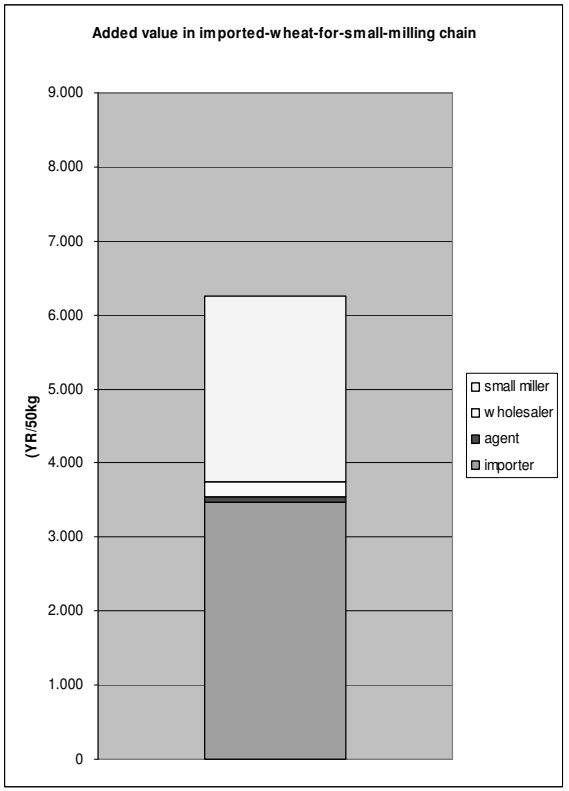


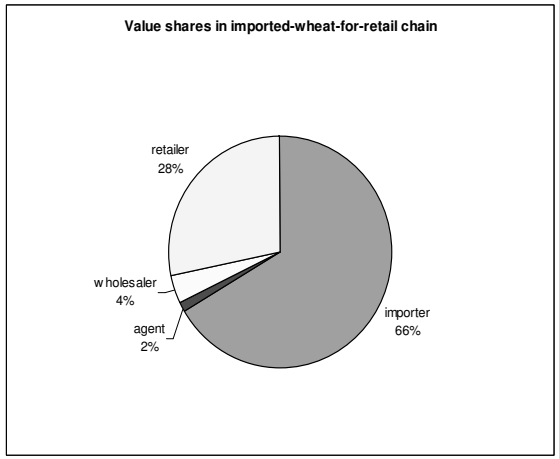
13. Most of the value-added in the imported-wheat chain goes to the beginning and the end of the chain. Wholesalers appropriate between 43% and 66% of the consumer value, depending on the final presentation of the product. Retailers, small mills, and bakeries receive between 28% and 53%, depending on the value that they add to the product. The midstream chain agents operate at low margins.

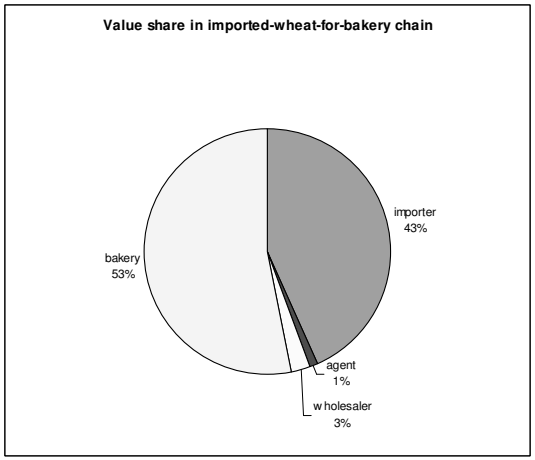
Bakery Mansoora Aden: *I started my business around 30 years ago we were very small and made just bread. Now my business has grown to because we have introduced new lines such as cakes. I now hire distributers to deliver bread to some groceries shops, and restaurants.*

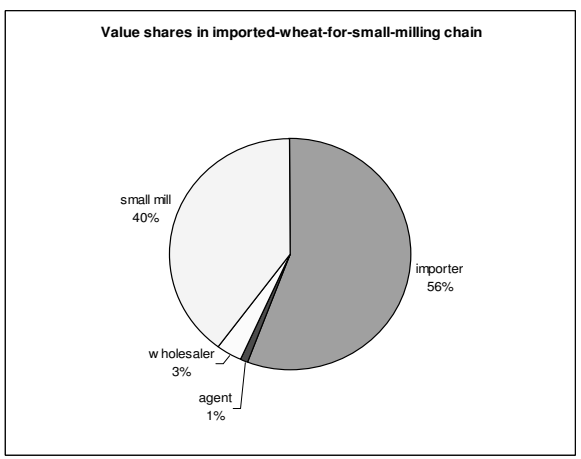

Added value in imported-wheat-for-retail chain
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0
YR /50 kg
Retailer
Wholesaler
Agent
Importer


Added value in imported-wheat-for-bakery chain
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0
YR /50kg
Bakery
Wholesaler
Agent
Importer

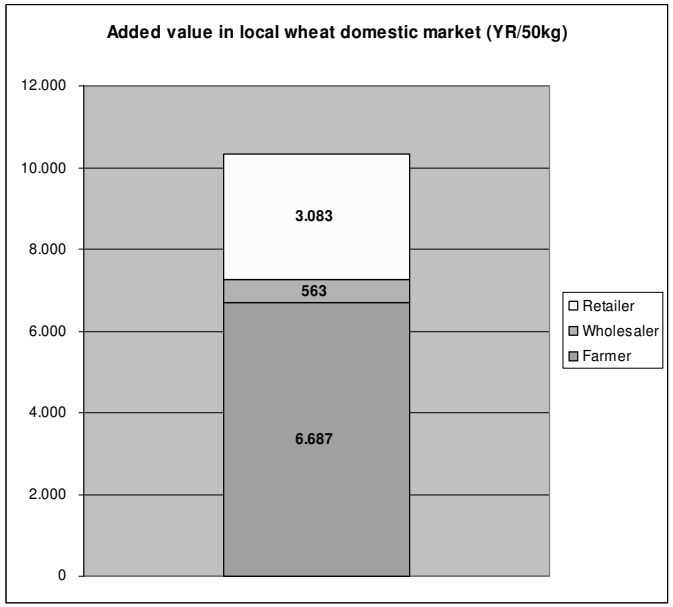

Added value in imported-wheat-for-small-milling chain
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0
(YR/50kg
small miller
w holesaler
agent
importer

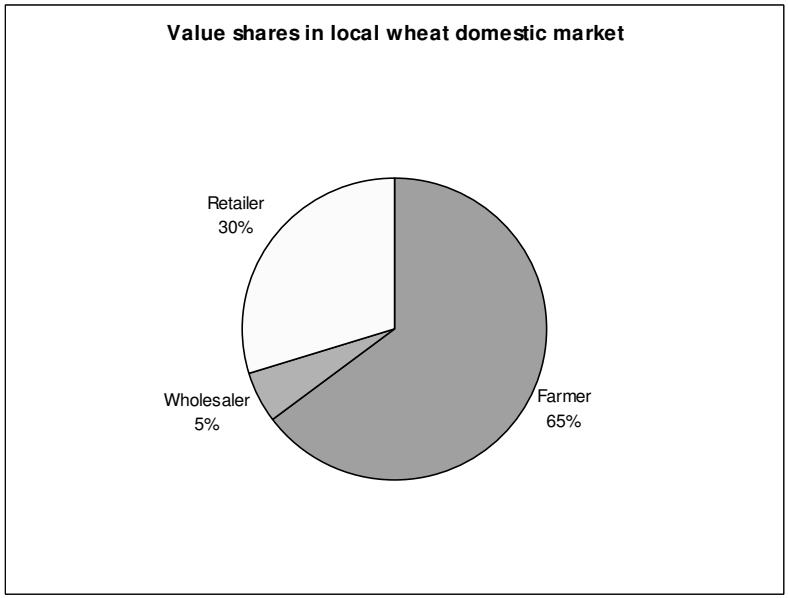

Value shares in imported-wheat-for-retail chain
retailer
28%
w holesaler
4%
agent
2%
importer
66%

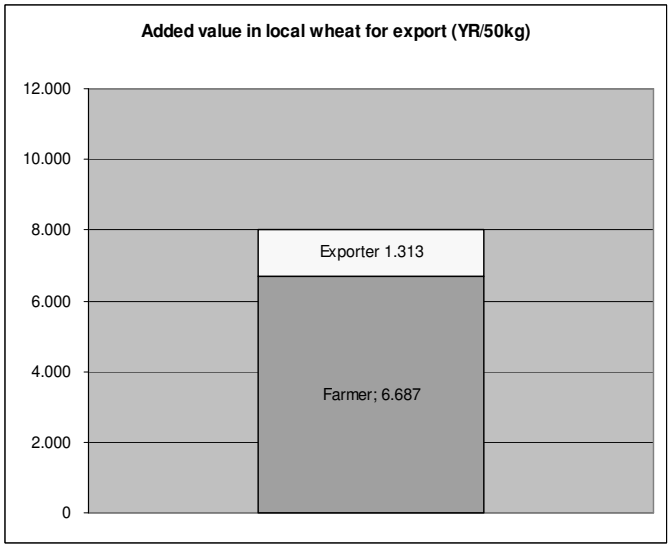

Value share in imported-wheat-for-bakery chain
importer
43%
bakery
53%
agent
1%
w holesaler
3%

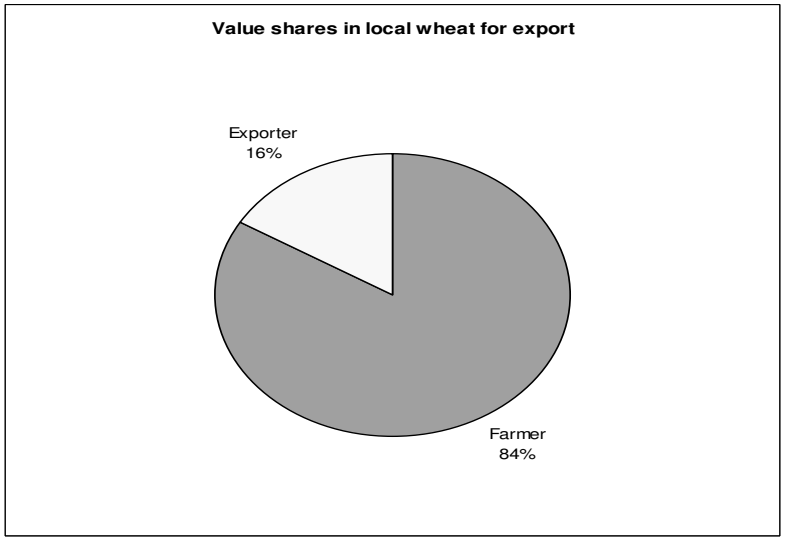

Value shares in imported-wheat-for-small-milling chain
small mill
40%
importer
56%
w holesaler
3%
agent
1%

14. In the local-wheat chain, most value share goes to the farmer, between 65% and 84%, depending on the market destination. Wholesalers appropriate only 5% of the consumer value, but this more than triples in the case of export. Domestic retailers of Yemeni wheat seem to make sound operating margins.









C. The chain environment

15. All actors in the wheat chain operate individually, except the local wheat farmers in wadi hadramout which are organized by an association. The manager of the association is also in charge of the MAI office in wadi hadramout. The association produces and distributes onion seeds in commercial quantities (including exports). Early in 2009, the association played a significant role in collecting wheat from farmers that was to be purchase by the government.

16. The chain actors that are large enterprises, such as importers and wholesalers, usually make use of bank loans to finance their operations. The other wheat chain actors report no significant relations to financial institutions.

17. The government is actively supporting local farmer to produce wheat. Main areas of support are: (a) the supply of wheat seeds, (b) research to improve the yields of wheat; (c) and more recently market support. As to the latter, in 2009 the government bought local wheat at a price of 7000 YER which is significantly higher than prevailing market prices. Field research undertaken by government research centers (Agriculture Research Extension Authority – AREA) puts the cost of production for a 50kg back of wheat at 3500YR. Interviews with farmers suggest an acceptable price for them would range between of 5000YR/bag and 6000YR/bag.

18. AREA (Seiyoun station) has presented the idea of mixing local wheat (high in protein) with imported (low protein) wheat to one of the country's largest wheat importers.

19. In 2008 the government issued a ban on exports of local wheat. This ban is strongly contested by the actors in the local-wheat chain. Farmers and traders argue that the best thing the government can do to support domestic wheat production, is to lift the ban on exports so that the market can fully develop. The elimination of the export ban is unlikely to jeopardize domestic food security. As stated earlier, the high-protein local wheat varieties are a speciality product, demanded by Yemeni consumers for specific purposes, and they are totally incomparable to the cheap bulk wheat that is imported and used for daily consumption. It is advisable that Yemen grasp this as a business opportunity, just like the large-scale wheat farmers in Hadramout are already doing: they produce local wheat and sell at a high price, while buying imported wheat at a low price.

> **Wholesale trader, Qatn Hadramout:** *I buy the local wheat from farmers, sometimes they come to me and sometimes I approach them, not always the same farmers because they will sell to whoever approaches them first if the price is good. This year with prices playing we have been more cautious and especially with the ban on wheat exports. Usually Bedouins who trade across boarders or expatriate Yemeni traders who take it back with them to Saudi, Kuwait, and UAE buy half of what I sell. They come and buy 100, 200 or 300 bags in one go.*

D. Constraints and opportunities in the wheat chain

20. The chain actors report a wide range of constraints:
    - By far the most reported constraint is the ban on export of local wheat;
    - Local wheat farmers mention the fall in market prices (due to export ban), high production costs, and the need for stronger marketing associations;
    - Wholesalers and retailers of local wheat mention the drop in prices (due to export ban) and the fluctuations in supply;
    - Importers and their agents mention the threat of Somali pirates, the strong fluctuations in supply and prices on the world market, and taxes;
    - Retailers, bakeries and small millers mention price fluctuations, the price limit on bread prices, and technology gaps.

Major wheat importer, Aden: *I am importing a lot less this year and last year due to the situation with Somali pirates and price instability. 3 years ago I used order 12 - 15 ship loads of wheat a year. Now I am importing not less than 7 and not more than 10.*

Agent of one of the big importers in Aden: *I started my business 18 years ago as a food wholesaler, selling canned food, sugar, rice, oils biscuits and general groceries. When the big importing companies appeared in the market, I added wheat as a new line and became an agent for these importers, which means I resell to wholesalers as well as retailers so my volume of business increased. My store was full of wheat,wholesalers would come to buy wheat from me and end up buying everything else from me (oil, canned food). But recently I reduced the quantities of wheat from importers and reduce my stock of wheat due to the instability in market prices.*

Farmer Qatn Hadramout: *It has been difficult selling last year's recent stock of wheat and that's according to the closure of the export market. So this year I turned to growing more onions. Onions need less water and the domestic and export market are widely open, well I can sell onions to Saudia Arabia and not wheat.*

21. All chain actors express strong willingness to continue to invest in wheat business. They perceive the following business opportunities:
    - More production of local wheat (higher yields, new machinery)
    - Exports of local wheat
    - Value adding (modern milling, packaging, marketing, product development)

E. Quality management and consumer focus

22. Imported wheat is graded according to country of origin. The chain actors distinguish (in order of preference): Australian, US American, and Syrian. Price differences are not significant (30YR-50YR/50kg bag). The final customer's first request is often Australian and this due to its lengthy existence in the market where households have become accustomed to it, and traders push it more that the other brands (do they earn higher margins from it or is just that more of it is available?). Syrian wheat is relatively new (2 years) so not as popular as the Australian.

23. In local wheat, there are many grades distinguished by region and variety. For example in Mareb 4 varieties are marketed, and in Hadramout 5. Quality is apportioned to variety and not so much to sorting. Price differences are more significant than in imported wheat. Yield and price are clearly linked were the poorest yield is the most expensive. Market perceptions are that the most expensive is also the better quality e.g. Halba variety hadramout, however this is rigorously disputed by AREA (Sieyoun). A quality grading system is not consistently applied from farmer to consumer. The wheat chain actors are clearly aware of the consumers' motivations for buying local wheat – traditional dishes and breads, as well as the ramadhan season. Still, even in the intensive growing areas self consumption is high. Several farmers interviewed in Mareb produced between 12 and 15 tons whilst consuming for themselves and extended families between 40% and 60% of their production.

F. Overall conclusions

24. The wheat value chain is, like in most countries around the world, strongly impacted by government policies and the desire for national self-sufficiency in staple foods. The government interferes at both production and more recently at market level. However, the national policy of self-sufficiency in wheat seems overly unattainable, due to the fact that Yemeni farmers can hardly compete with the large-scale mechanized wheat production in countries such as Australia and the USA. It would be wiser to adjust the national policy to the market reality, that is, bulk imports of cheap wheat to ensure availability to consumers, combined with local production of high-value speciality wheat for niche markets, both domestic and export in the Gulf Region.

G. Policy recommendations

25. Implement a market-coherent policy of cheap bulk imports with local production of high-value speciality wheat.

26. Lift the ban on exports of local wheat.

27. Continue to invest in technology development for local wheat production.

ANNEX 1a : SUB-SECTOR GROWTH: WHEAT LOCAL & IMPORTED

Year	Number of smallholder producers	Number of smallholders in wheat	Production area (ha)	Yield (ton/ha)	Farm output value (million YR)	Farm gate price (YR/kg)	Farm output (ton)	Income per farmer (YR/year)	Domestic production (%)
1990	819,380	87,729	97,900	1.6	884	6	153,346	10,076	100%
1995	1,001,925	109,883	101,554	1.7	2,179	13	170,929	19,830	18%
1999	1,115,515	126,720	86,112	1.6	4,187	30	139,563	33,041	11%
2000	1,146,149	132,000	87,334	1.6	4,966	35	141,884	37,621	11%
2001	1,115,515	138,600	94,371	1.6	6,110	40	152,742	44,084	9%
2002	1,115,515	145,659	89,370	1.5	5,480	42	131,733	37,622	9%
2003	1,115,515	150,029	86,520	1.2	5,418	52	103,794	36,113	7%
2004	1,180,105	153,030	83,801	1.2	5,886	57	103,265	38,463	6%
2005	1,180,105	155,325	86,010	1.3	8,896	79	112,963	57,273	8%
2006	1,180,105	186,390	110,709	1.3	12,082	81	149,173	64,821	14%
2007	1,180,105	298,224	141,519	1.5	26,878	123	218,520	90,127	8%
2008	1,191,981	268,402	148,595	1.6	37,084	160	231,631	138,166	11%

Continued from above

Year	Export price (YR/kg)	Export value (million YR)	Export (ton)	Export (%)	Import price (YR/kg)	Import value (million YR)	Import (ton)	Import (%)	Domestic market (ton)	Domestic market value (millions YR)	Retail price (YR/kg)
1990	0	0	0	0%	2	2	764	0%	39,101	1342	34
1995	0	0	0	0%	2	1,823	754,461	82%	797,193	35874	45
1999	53	1	27	0%	20	23,586	1,186,614	89%	1,221,478	64738	53
2000	56	1	13	0%	21	23,578	1,125,648	89%	1,161,106	71571	62
2001	58	200	3,454	0%	22	31,669	1,468,389	91%	1,503,121	100709	67
2002	42	94	2,223	0%	22	27,510	1,265,317	91%	1,296,027	96411	74
2003	41	80	1,956	0%	22	33,110	1,490,043	93%	1,514,036	131872	87
2004	54	4,977	92,142	5%	28	46,347	1,644,932	94%	1,578,606	149810	95
2005	63	3,195	50,716	4%	30	37,236	1,251,700	92%	1,229,225	130175	106
2006	70	1,821	26,020	2%	25	22,994	926,390	86%	937,663	126866	135
2007	76	110	1,452	0%	56	145,170	2,579,401	92%	2,632,579	329599	125
2008	90	85	945	0%	90	172,639	1,922,425	89%	1,979,388	326599	165

ANNEX 2a : CHAIN MAP LOCAL WHEAT

Step number	Value chain actor	Chain function	Lead time (no. of days/week/months of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Farmer	Farming, harvesting and threshing at field, followed by packing in 50kg bags.	4 months from sowing, harvesting and selling.	Hadramout // Mareb // Sanna	Farmers have anything from 1 to 150 hectare. Animals are used, as well as tractors and combine harvesters (Hadramout more so) for preparing the land and harvesting. Farms visited in Mareb use larger area for wheat (80-200 ha).
2	Wholesaler	Wholeselling and retailing in some cases sold to traders (beduins) who cross-border trade (UAE and Saudia Arabia)	10 to 30 days for each ordered stock	Hadramout	Rents or own the trade outlet
3	Retailer	Purchase the wheat from the wholesalers and in some cases from the farmers. Resell to customers as grinded or whole (big season for local wheat during Ramadhan). Retailers of local wheat tend in most cases to be spice shops (and not grocery shops)	1 bag every 5 to 10 days	Sana'a, Aden	Rented shops (usually on busy high street or market areas so expensive rent)

ANNEX 2b : CHAIN MAP IMPORTED WHEAT

Step number	Value chain actor	Chain functions	Lead time (period product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Importer	Large importers import from Australia, USA and Syria). Smaller importers import from India, China, and other countries. Larger importers mill most of their wheat (90 to 95%) into flour.	6 months	Larger quantities through Aden port where silos are in place and special port facilities including dock. Mukalla port and Hodaidah are inlets for wheat for smaller importers who purchase bagged wheat.	There are four big importers, owning silos, port facilities, and industrial milling and packing facilities. These importers are amongst Yemen's largest industrial groups
2	Agent	Usually big enterprises that represent one of the major importers as an agent. They have extensive network of wholesalers who purchase from them wheat and other bulk grocercies (sugar, rice, canned products etc)	3 months	Al sheik othman, Aden; Al seelah street, Aden	There are 2 large traders in the market who buy from importers and they rent/own huge stores
3	Wholesaler	They buy from agents and resell to retailers, bakers, restaurants, and small millers	3 months	Al sheik othman, Al seelah street, Al Hasaba market Sana'a	-
4	Retailers	Sell the wheat (as cereal) and flour in small portions (1 - 5 kgs) to the end customers	1 month	Most small grocery shops ("corner shops") offer wheat.	In a Mansoora district (Aden) alone there are around 350 shops. Shops are either rented or owned. Their stock is around $ 5000.
5	Bakeries	Bakers purchase 50kg bags of flour from wholesalers and make bread (pitta, french sticks, and biscuits/cakes)	1 day	Very common (about 10 in each district)	Ovens, moulds/baking pans. Some (few) own small vans to distribute bread to retailers and restaurants.
6	Small mills	Miller purchases wheat and grinds it into flour ready to sell. Or consumers purchase wheat, sorghum, oats, etc., and take it to the miller to grind.	2 weeks	A lot fewer than bakers yet 4/5 in each district.	Grinding machines /// shops /// etc……

ANNEX 3a: PROFILE OF THE WHEAT LOCAL CHAIN ACTORS

Step number	Value chain actor	Volume of business (kg//year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources	% of wheat on total income	Sources of capital
1	Farmer	16,000	2,139,840	10,699	2,139,840	10,699	livestock, fruit vegetables	50%	family
2	Wholesaler	38,200	5,539,000	27,695	430,132	2,151	none	10%	family
3	Retailer	1,937	400,300	2,002	119,435	597	spices	5%	family

Continued from above

ANNEX 3b: PROFILE OF THE WHEAT IMPORTED CHAIN ACTORS

Step number	Value chain actor	Three main perceived contraints	Main perceived business opportunity	Top priority for investment
1	Farmer	1) High cost of renting tractors; 2) Fall in prices (from YR 9000 to YR 5000) due to ban on exports; 3) Lack of marketing parties (associations) to get better price	1) Support in machinery and best practices; 2) Allowing export	1) Invest in modern machinery and land; 2) Improve productivity of wheat
2	Wholesaler	1) Ban on wheat decreases demand and margins; 2) Fluctuation in prices and supply	-	1) Milling and packaging machines, 2) Up-scaling (more goods to market, additional branch)
3	Retailer	1- small production 2- high prices	-	wheat exporting, milling, better small packaging

Step number	Value chain actor	Volume of business (tons/year)	Turnover (YR/year)	Turnover (USD/year	Gross income (YR/year)	Gross income (USD/year	Other income sources	% of wheat on total income
1	Importer	350,000	24,262,000,000	121,310,000	24,262,000,000	121,310,000	none	100%
2	Agent	8,000	568,000,000	2,840,000	13,440,000	67,200	Canned food, oils, rice, etc.	7%
3	Wholesaler	895	67,125,000	335,625	3,580,000	17,900	Groceries (canned foods, oils, rice, sugar, biscuit etc)	15%
4	Retailer	5	470,700	2,354	133,200	666	General groceries and fruit and veg	8%
5	Bakeries	135	21,600,000	108,000	11,475,000	57,375	Bread, cakes, biscuits	100%
6	Small mills	66	8,250,000	41,250	3,300,000	16,500	none	100%

ANNEX 3b: PROFILE OF THE WHEAT IMPORTED CHAIN ACTORS

continued..

Step number	Value chain actor	Sources of capital, including %	Three main perceived constraints	Main perceived business opportunity	Top priority for investment
1	Importer	Bank finance, family	Somali pirates, fluctuations in global prices	Start local wheat farming	Grind wheat
2	Agent	Own and bank finance	Instability in prices, taxes, instability in supply	Small factories to mill local wheat	Open additional branches
3	Wholesaler	Bank finance, family	Taxes, instability in price and quantity	-	Same field (further stock and/or additional branches)
4	Retailer	Family	-	-	-
5	Bakeries	Family	Cheating and mixing types of wheat, price increases for flour, government limits on bread prices	Pies, cakes, biscuits (additional to bread) and van to distribute	Expand operations or open a additional bakery
6	Small mills	Own	New types of machines, lack of spare parts	Marketing	Bigger and faster mill

ANNEX 4a : RELATIONS IN THE WHEAT LOCAL CHAIN

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Farmers	No specific period with buyers, usually they sell to the best offer they get,	Most farmers get cash payments, some farmers get advance payment for the crops	none	Farmers initially buy seeds from seed multiplication institutes to get high-quality seeds and then use their own seeds kept from previous years (after sorting and separating the best seeds).So there is no specific period of relation.	Cash payment	Exposure visits arranged by government to experimental farms on new more productive strains of wheat grown with fertilizers (7 to 13 tons per hectare)	In the past some have relations with agriculture banks	Many farmers are members of agriculture associations that represent them	Supply of Tagagroub wheat seeds in the northern regions; in southern regions support in seed distribution & technical support from agricultural research stations to improve the quality and quantity of wheat
2	Wholesaler	No specific period with buyers, usually they sell to the best offer they get	Cash and credit	none	None	Usually buys in cash	none	none	none	none
3	Retailer	10 years in most cases	Cash and (some times credit)	-	10 years in most cases	Cash and credit	Quantity and quality	no	no	no

ANNEX 4b: RELATIONS IN THE WHEAT IMPORTED CHAIN

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Importer	7	Credit for 3 to 4 months	Quantities	7	Credit for 180 days	Quality and quantity	Banks Letter of credits (LCs)	no	Agr. research centre advises to mix with 10% local wheat to increase protein
2	Agent	7	Credit and cash	Quantities	7	Credit 3 to 4 months	Quatlity and quantity	Banks loans and LCs	no	no
3	Wholesaler	18	Credit and cash	Quality types	20	Credit and cash	Quantities and quality	Bank loans (LCs)	-	-
4	Retailer	18	Credit and Cash	Quality	18	credit and cash	Quality and types	no	no	no
5	Baker	10	cash	Quality and prices	10	credit and cash (2 to 4 weeks)	Quality and prices	no	no	no
6	Small mills	2	Cash	Quality and prices	2	Cash and credit (2 weeks)	Quality	no	no	no

ANNEX 5a : PRICES, MARGINS AND VALUE SHARES IN THE WHEAT LOCAL CHAIN

Step number	Value chain actor	Purchase price (YR/50kg)	Selling price (YR/50kg)	Gross income (YR/50kg)	Gross margin (%)	Value share domestic (%)	Added value export (%)
1	Farmer		6,687	6,687	100%	65%	84%
2	Wholesaler	6,687	7,250	563	8%	5%	
3	Retailer	7,250	10,333	3,083	30%	30%	
4	Exporter	6,687	8,000	1,313	16%		16%

ANNEX 5b : PRICES, MARGINS AND VALUE SHARES IN THE WHEAT IMPORTED CHAIN

Step number	Value chain actor	Purchase price (YR/50kg)	Selling price (YR/50kg)	Gross income (YR/50kg)	Gross margin (%)	Value share wheat retail (%)	Value share bakery (%)	Value share flour retail (%)
1	importer		3,466	3,466	100%	66%	43%	55%
2	agent	3,466	3,550	84	2%	2%	1%	1%
3	wholesaler	3,550	3,750	200	5%	4%	3%	3%
4	retailer	3,750	5,230	1,480	28%	28%		
5	bakery	3,750	8,000	4,250	53%		53%	
6	small mill	3,750	6,250	2,500	40%			40%

ANNEX 6: QUALITY MANAGEMENT IN THE WHEAT LOCAL CHAIN

Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Farmer	There are 9 types in the two major growing regions. In Hadramout: Halpa, Kalansionna, Ghonaimi, Haramout 2, Hadramout 3	The types of seeds used indicate the quality of the wheat. Halpa is the most expensive and least productive, but demanded in Gulf region. Halpa is considered best by trade and farmers, but government considers it bad.	?	30 to 50 YR/kg	1)the quality of seeds, 2) land preparation and fertilizers, 3) adequate watering and storage	-	Niche-consumers prefer local wheat and buy it although the price is higher than imported wheat. Farmers in Hadramout sell their wheat and buy imported for themselves. Demand for local wheat increases during Ramadhan. The Yemeni expat community in Gulf pulls the product through the black market.
2	Wholesaler	Traders and wholesalers are usually selling Halpa	Color, shape, taste	?	30 to 50 YR/kg	Storing conditions	-	Specific consumers prefer the quality of local wheat and they are buying it although the price is higher than imported wheat.
3	Retailer	Tagaroub, Boni, Mesany, Goofy	color, shape, origin	35% bony, 25% Mysany, 25% goofy, 15% rest	20 to 30 YR per kg	-	-	-

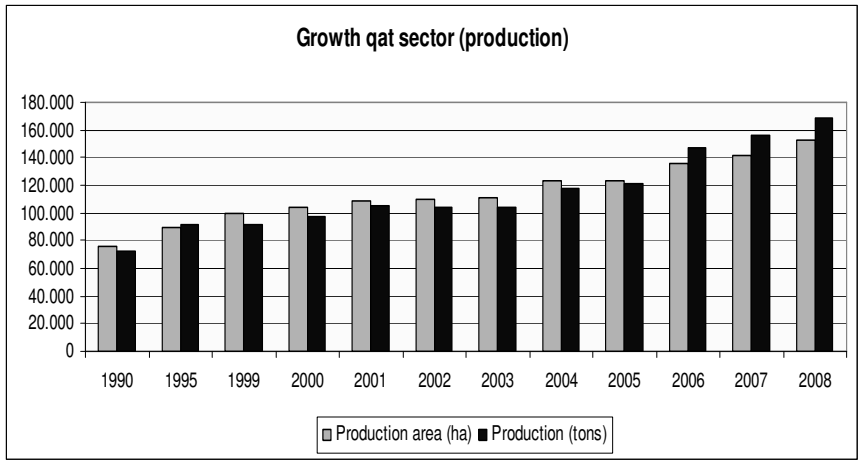
ANNEX 6: QUALITY MANAGEMENT IN THE WHEAT IMPORTED CHAIN

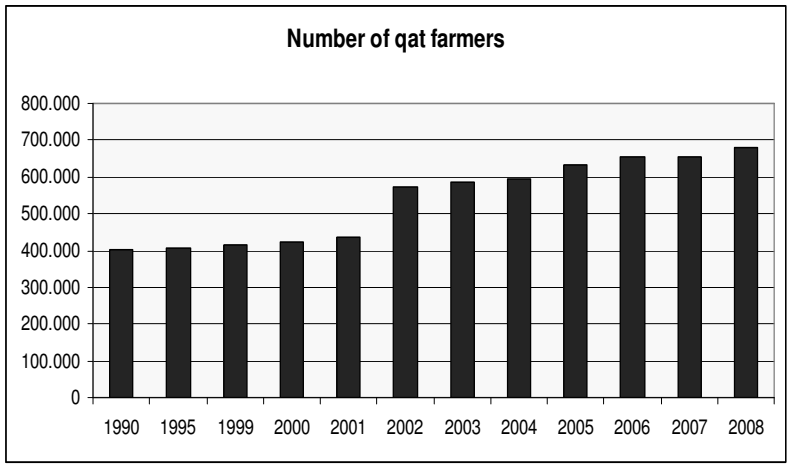
Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/kg)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Importer	1- Australian; 2- American; 3- Syrian	origin country, protein	?	100 to 300 per bag	storing, humidity	-	australian type is preferred
2	Agent	1- Australian; 2- American; 3- Syrian	origin country	60% Australian, 30% American, 10% Syrian	100 to 300 per bag	storing	-	-
3	Wholesaler	1- Australian; 2- American; 3- Syrian	Country of origin, brand name	50% Australian, 30% American, 20% Syrian	100 to 250 per bag	storing	-	-
4	Retailer	Australian	Country of orgin (retailer usually carries one or two varieties)	100% Australian	-	-	-	
5	Bakery	Sanable flour (processed by big importer and branded locally)	Confirmation of Sanable label on bag	100% Sanable	-	-	-	-
6	Small mill	1-Australian; 2- American	Country of origin, brand name	70% Australian, 30% American	100 to 120 per bag	storing, machines used to grind	types and quality	Purchases usually Australian and American. During ramadhan increase in local grains

Report Qat value chain

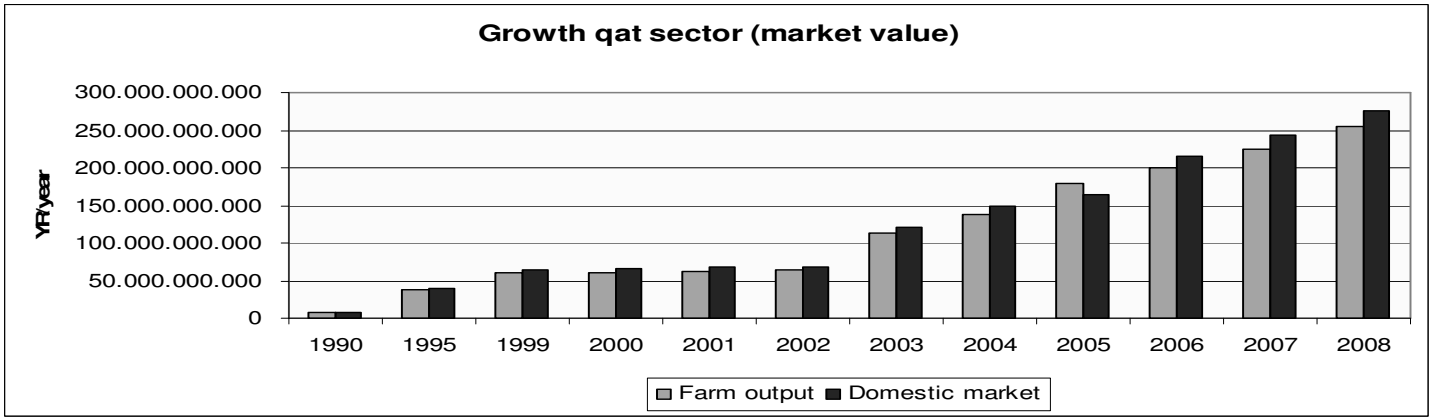
A. Sector performance

1. Qat production continues to grow constantly over the years. In 2008, more than 600,000 farmers are engaged in qat production, that is, more than half of the country's smallholder farmers.

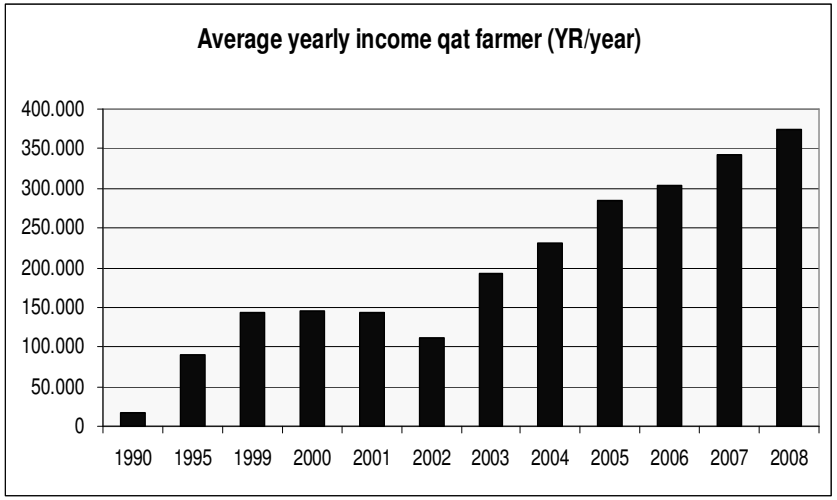


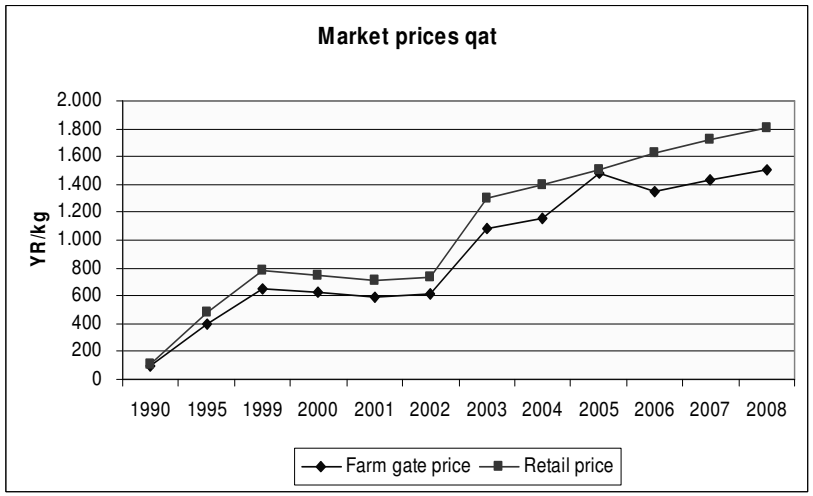


2. In line with production, the market demand for qat also continues to rise constantly over the years.



3. Market prices for qat continue to rise, as well as average income of qat farmers.

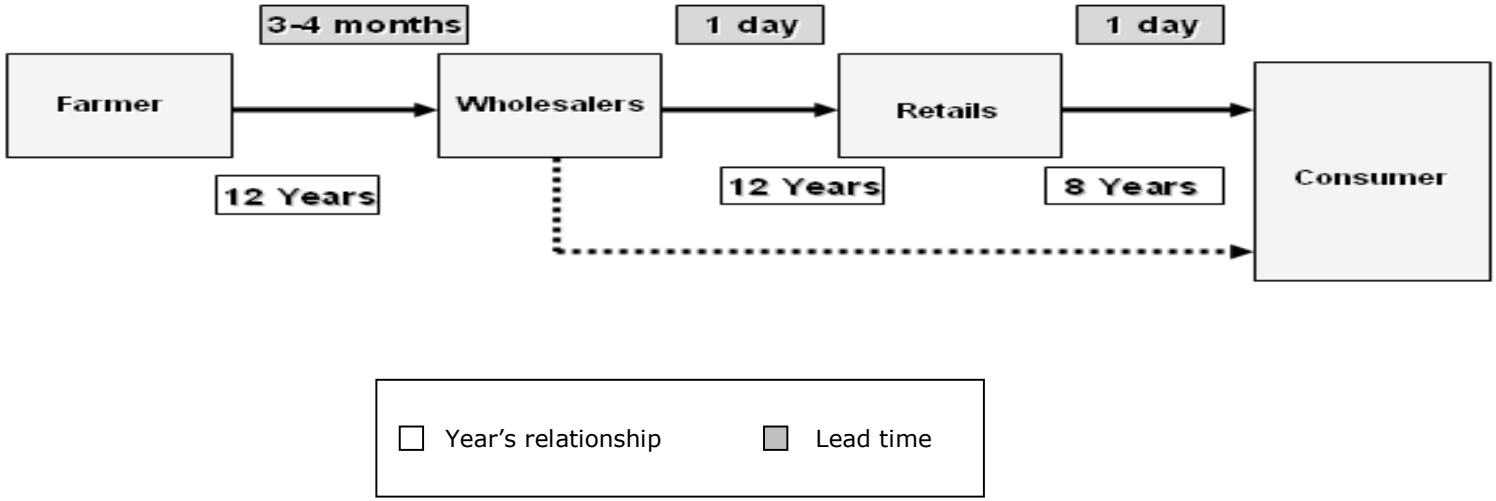




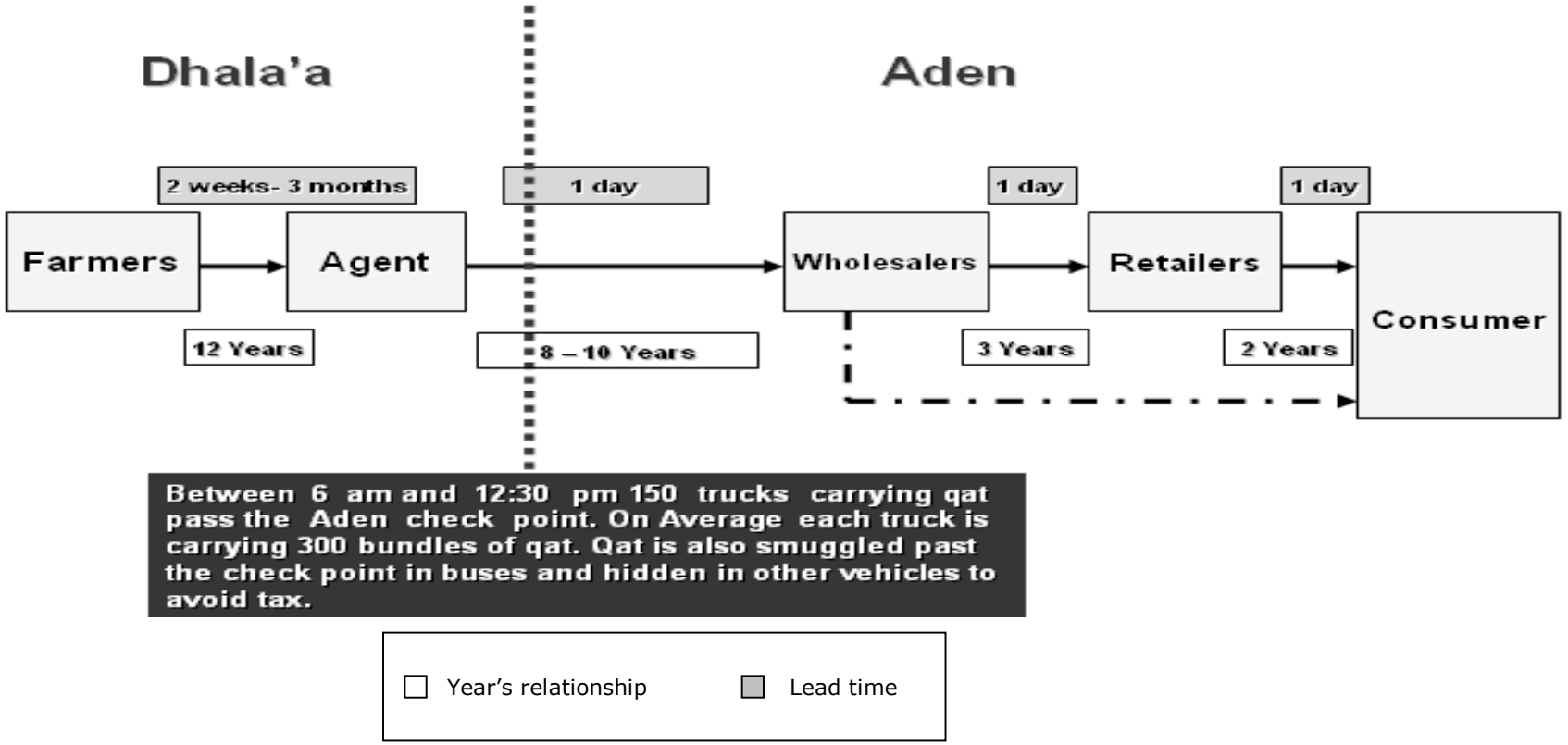
B. The value chain

4. The Qat value chain is organized as depicted below.

QAT SANAA (SHORT-DISTANCE)



QAT AL DHALA'A (LONG DISTANCE)

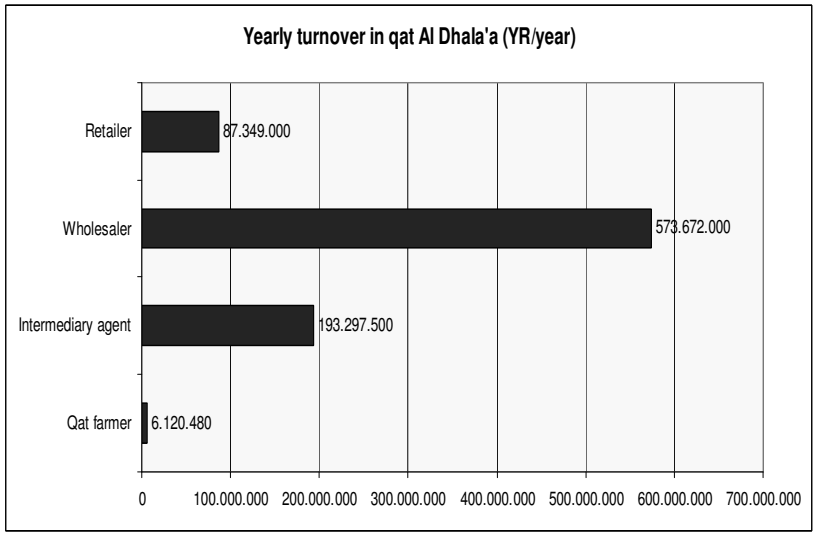


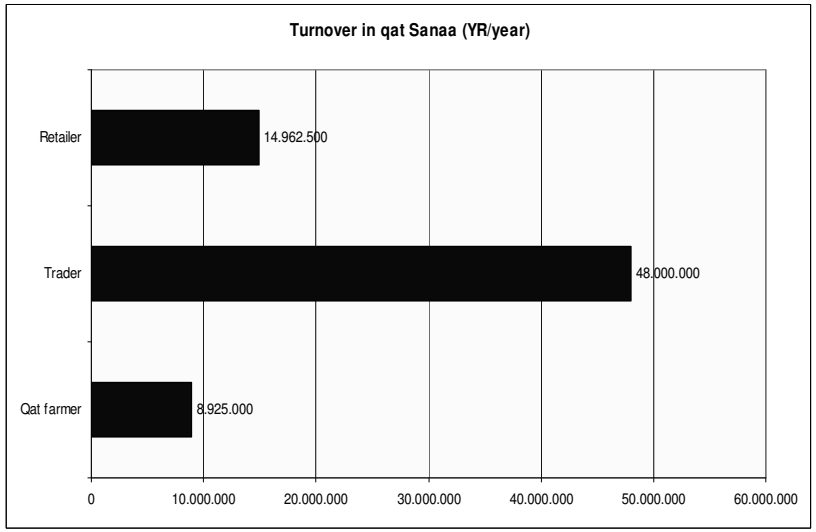
5. The lead times in the qat value chain are very short. The product is within one day from being harvested on the farmer's field to being consumed in the city (Annex 2). Qat is daily harvest, daily business, daily cash flow. Therefore, there is close coordination between farmers and traders on supply and demand parameters. This concerns not only volumes and quality grades, but also packaging, timing of picking, method of picking, timing of watering, and other factors that influence the quality and availability of the product (Annex 4).

6. The business relations between farmer and traders are long-term, sustaining between 8 and 12 years. Besides the information exchange as described above, there are credit flows. Traders advance payments to the farmers in order to guarantee supply (Annex 4).

Qat agent, Al-dhala'a: *I've being representing farmers for three years, farmers sell qat in shakels to me, they come to me and I pay cash or I go to them and pay in advance and I sell on to wholesalers, so I am a broker between farmers, and wholesalers. More recently some wholesalers from Aden started buying qat directly from farmers on the land and on the tree (acre), and pay in advance. They secure the qat by advance payments.*

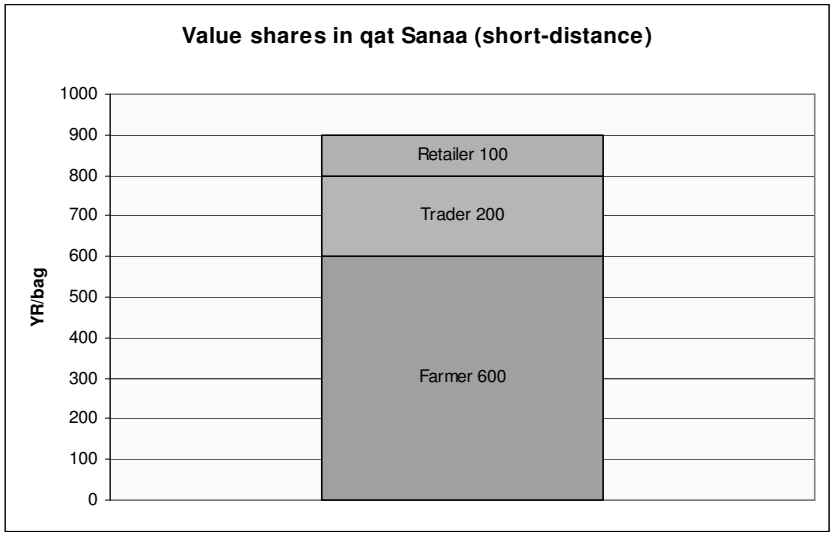
7. The midstream chain actors (wholesalers, intermediary agents) are dominant in the value chain. Their turnover is significantly higher than that of the other chain actors.

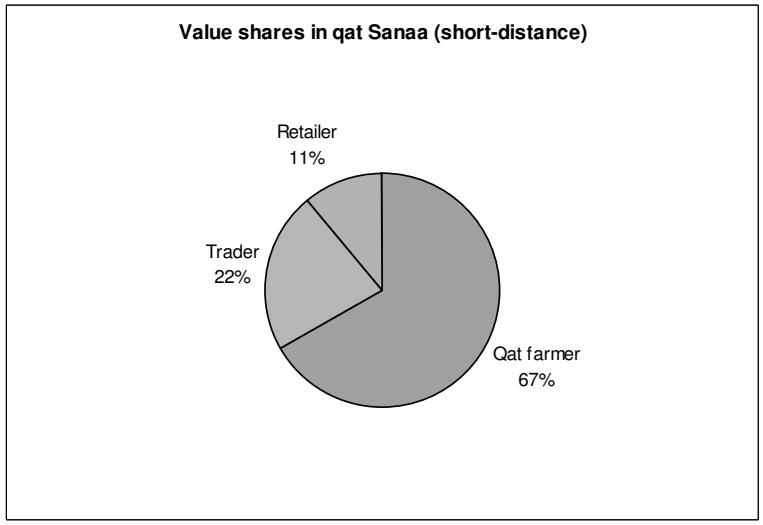


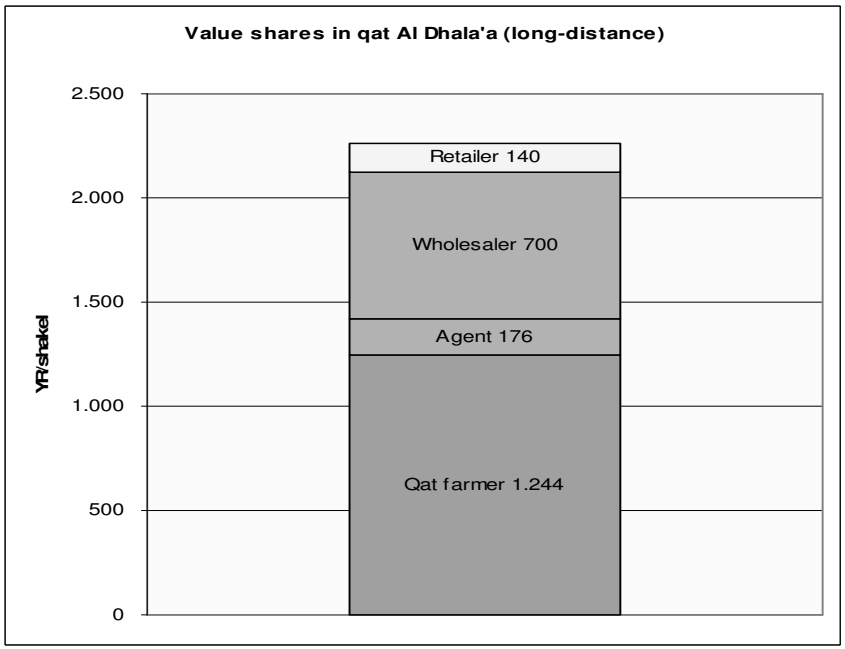


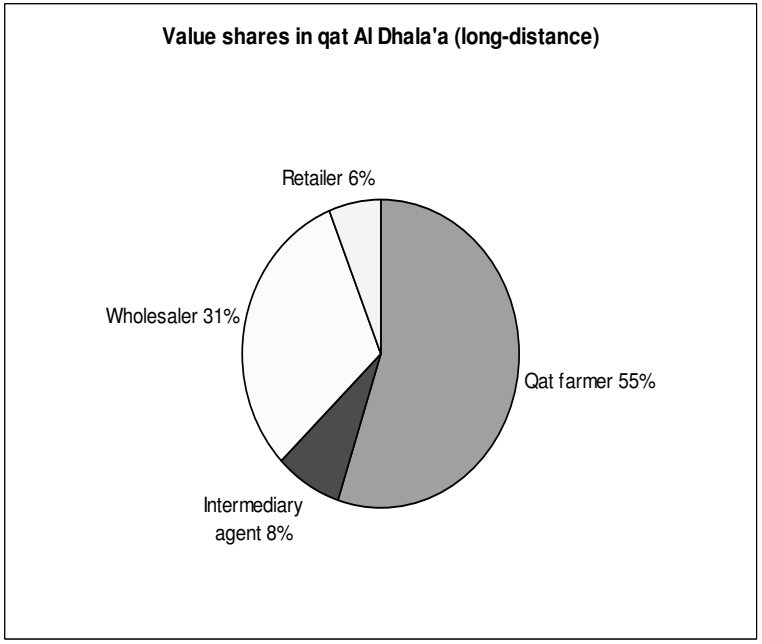
8. Besides a high turnover, the midstream chain actors also enjoy fairly large operating margins, between 25 and 33% (Annex 5). Obviously, this is related to the vital service that they deliver: super-fast transport of qat. For this reason, the value share for traders/wholesalers is larger in the long-distance qat chain (Al Dhala'a) than in the short-distance qat chain (Sana'a).

Qat wholesaler, Aden: *I started trading in qat 5 years ago without a car, I used to travel to Al-dhala'a with other wholesalers in their cars to buy qat directly from agents. Now I own 4 cars, and I take retailers with me on my trips to Al-dhala'a so that they can choose the qat they want and then buys it on credit for them. If they want to come with me the next day they must pay back the credit, so it is only a matter of a day or a few days credit.*


Value shares in qat Sanaa (short-distance)
YR/bag
1000
900
800
700
600
500
400
300
200
100
0
Retailer 100
Trader 200
Farmer 600


Value shares in qat Sanaa (short-distance)
Retailer
11%
Trader
22%
Qat farmer
67%

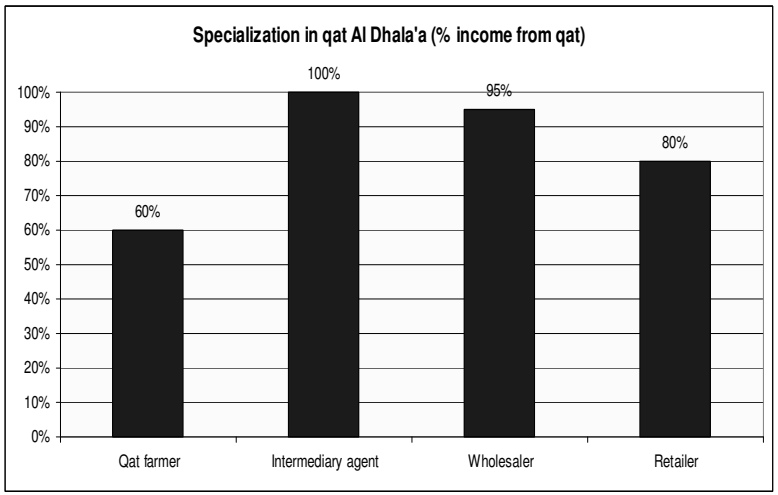

Value shares in qat Al Dhala'a (long-distance)
YR/shakel
2.500
2.000
1.500
1.000
500
0
Retailer 140
Wholesaler 700
Agent 176
Qat farmer 1.244

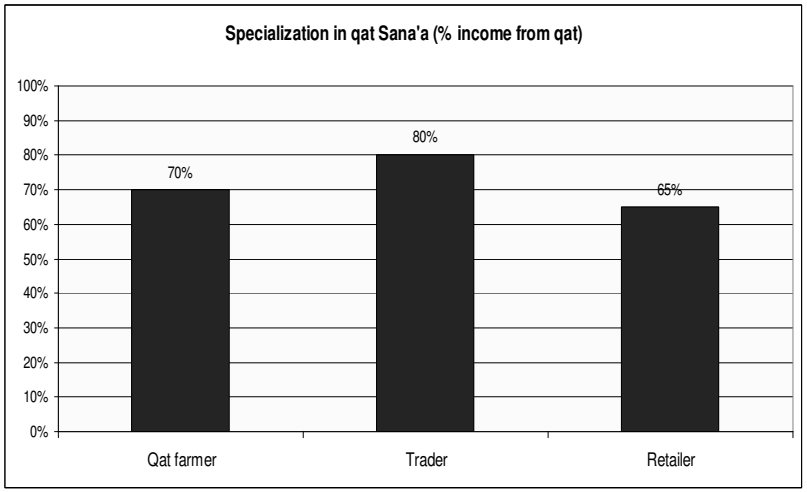

Value shares in qat Al Dhala'a (long-distance)
Retailer 6%
Wholesaler 31%
Qat farmer 55%
Intermediary
agent 8%

Trader, member of the qat marketers association, Sana'a: *Profit in qat is 100% guaranteed and it is easy money for everyone involved. Farmers will continue to uproot grapes and other fruit because of high profits in qat. And farmers will continue to increase production because demand is growing. The government does not support farmers to grow other products or in exports which also pushes farmers to grow more qat for quick and easy money.*

Qat farmer, Bani Hushaish, Sana'a: *Yes I make a good profit from qat, better than grapes which is more insignificant and may be I will completely stop grapes. But traders make more profit than I make. Remember a trader sells a lot more and has little cost, whereas as I pay for chemicals, laborers, and security.*

9. In the long-distance qat chain, the midstream chain actors are highly specialized (close to 100% income from qat), while the farmers have other significant income sources, also outside of agriculture (Annex 3). In the short-distance qat chain, the traders and retailers are less specialized than in the short-distance chain; they maintain other business lines such as fruit farming and taxi-driving.





C. The chain environment

10. Qat is fully self-sustaining private business. None of the chain actors has relationships with outside chain supporters. Some traders report to use bank loans. But there are no government agencies involved in supporting or regulating the sector (besides taxing).

11. Long distance chain presents higher risks associated with super-fast delivery.

> **Qat agent Al Dhala'a:** *We don't have insurance because everything happens so quickly. For this reason it's very risky. Usually I pay cash to farmers and sometimes in advance. But wholesalers pay me on credit, with no insurance, and no bank services available. Recently one of my clients a wholesaler from Aden who is dealing with me for many years and buys huge quantities daily on credit had a terrible road accident on his way back to Aden, and died, I lost 1 million riyals.*

12. Farmers and traders operate by themselves; they are not organized in associations.

13. Government papers on opening imports of qat from Ethopia (cheaper and supposedly better quality) have stirred up debate. The trade-offs appear to be further deepening of qat culture by making qat more affordable against curbing the growth of qat and water conservation. During the stakeholder workshop a value chain actors (traders, farmers and retailers) felt that a government policy allowing imports of qat would be acceptable if exports of qat were permitted.

D. Constraints and opportunities in the qat chain

14. The main constraints reported by the chain actors are: (a) dry weather and shortage of water; and (b) high taxing.

15. Agents mention a lack of insurance/guarantee services on credit facilities they offer to traders.

16. Most chain actors express willingness to invest in up-scaling and technification of qat farming and trading, though they also mention the desire to diversify into other business lines. A clear exception is the response from qat retailers, many of whom mention disinterest to continue in qat business.

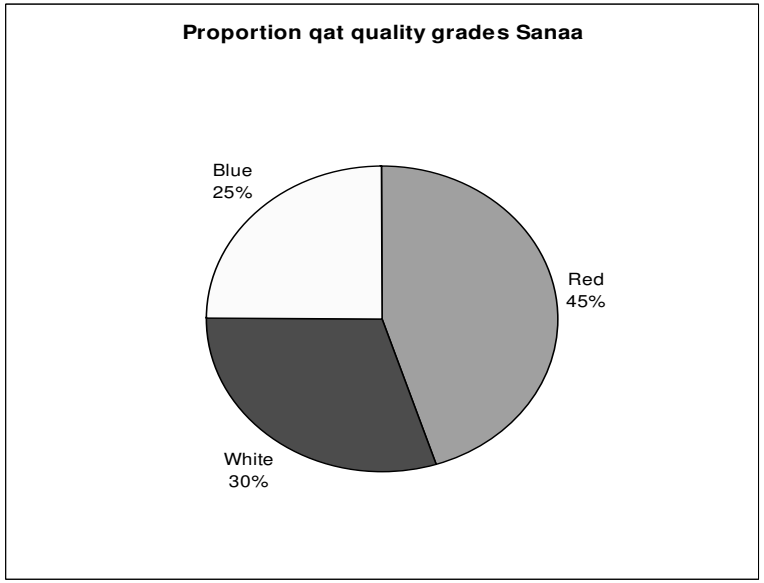
> **Wholesaler, in Aden:** *My brother and I started trading qat in Sana'a, especially from Amran. We also began shifting Amrani qat to Aden. Most qat in Aden comes from Al Dhala'a so we had our special product and market of mainly Sana'ii businessmen in Aden. It has been around 5 years, and within these few years we have saved up capital to start another business in real estate. With our qat business we get daily cash which builds-up and with the profits we invested in land. We buy and sell land and build*

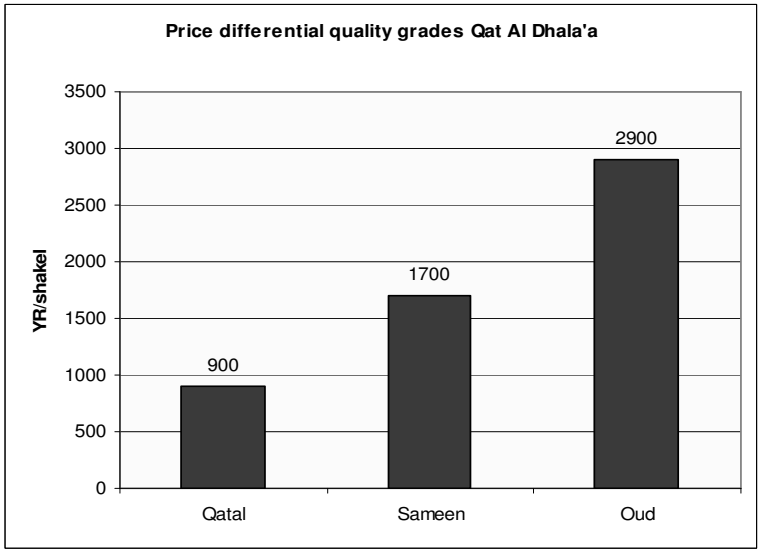
Young university graduate retailing qat, Aden: *I work in qat because we have nothing else to do. The qat I sell is the lowest quality and well sell to the poorest people. So we do not make much. We make less than 5% and then we have to pay for our market space and tax. Even if we sell the expensive qat you need to have special customers but still the profit is still 5% -10%. If I find a job I will leave qat.*

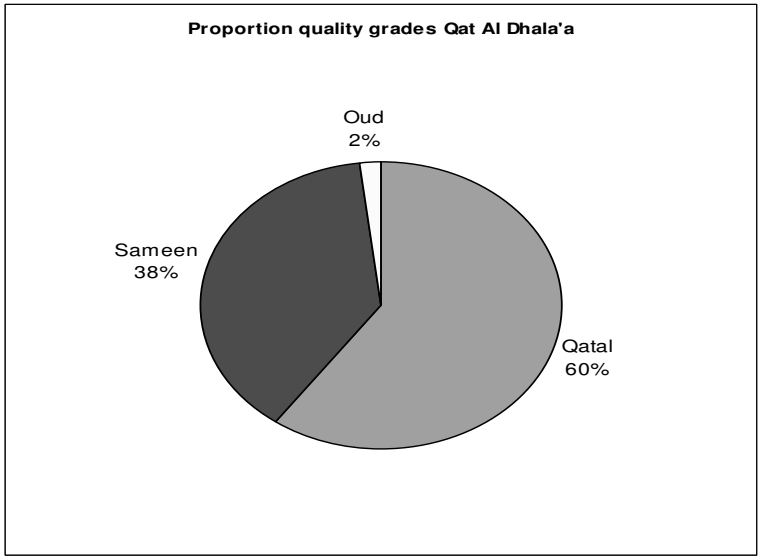
E. Quality management and consumer focus

17. In terms of quality management, the qat value chain is a showcase example for other product chains in the country. The qat chain actors adhere to a clearly defined quality grading system that is consistent from farmer to consumer. The chain actors know how to identify the different quality grades, the factors influencing quality, and the consumers' requirements regarding product quality.

18. In Sanaa the qat quality grading system distinguishes Blue, White and Red with a price differential of 180 YR/bag between each grade. The three grades are three different varieties of qat. The market is fairly evenly divided between the three grades, though farmers report that they are replacing Red by Blue, as this is demanded in the market. In Dhala'a the market distinguishes Qatal, Sameen and Oud. The price differential between the various grades is large: between YR 800 to 1200 per *shakel*. The quality grades result from the method of picking, rather than from genetic varieties (harvesting qat leafs from the tree after 2 weeks of growing, producing Qatal or harvesting the same qat leaf tree after 6 weeks of growing, producing Sameen and harvesting qat as small branches from the tree after 10 weeks of growing, producing Oud). The market for the highest quality (Oud) is very limited at 2% only.







F. Overall conclusions

19. The qat sector features a well-developed and well-integrated value chain. The lead times are short, the chain actors

coordinate on supply and demand, there is a clearly defined and consistently applied quality grading system, and all chain actors show a clear customer-focus.

20. The overall sector performance is accordingly: consistent growth and strong demand against impressive supply response.

G. Policy recommendations

21. In itself, the qat value chain does not require interventions from outside, as it is functioning well. The only areas for improvement are those that are general to Yemeni agriculture: (a) introduction of modern irrigation systems; (b) training on use of chemical inputs.

22. The qat chain actors express a clear interest in diversification into other business lines. This represents a genuine development opportunity. If the government is able to provide enabling conditions for alternative business (e.g. high-value fruit export), then the chain actors will be likely to invest their profits from qat into there other business lines, thereby creating positive spin-off for the Yemeni economy and society.

23. The qat value chain is a showcase example of a demand-driven, well-coordinated value chain. The experience of the qat chain actors is highly relevant for upgrading the performance of other agricultural value chains in the country. It may provide for a culturally-embedded model for modern value chain development.

ANNEX 1a : SUB-SECTOR GROWTH: QAT SANAA (SHORT-DISTANCE)

Year	Number of smallholder qat producers	Production area (ha)	Productivity ton/ha	Farm output (tons)	Farm gate price (YR/kg)	Farm output (YR/year)	Domestic market (tons)	Domestic market (value millions)	Retail price (YR/kg)
1990	402,707	75,978	0.9	71,908	94	6,723,398	64,717	7,248,304	112
1995	406,946	88,939	1	91,418	403	36,795,745	82,276	39,739,308	483
1999	415,424	99,631	0.9	91,276	654	59,731,014	82,148	64,486,180	785
2000	423,902	103,928	0.9	97,844	626	61,240,560	88,060	66,133,060	751
2001	436,619	108,715	1	105,465	595	62,751,675	94,919	67,772,166	714
2002	574,387	110,293	0.9	103,942	613	63,706,052	93,548	68,757,780	735
2003	584,985	110,873	0.9	103,610	1,087	112,592,987	93,249	121,596,696	1,304
2004	593,463	122,844	1	118,207	1,161	137,226,506	106,386	148,195,698	1,393
2005	633,098	123,933	1	121,399	1,478	179,464,142	109,259	164,653,313	1,507
2006	654,929	136,138	1.1	147,444	1,352	199,388,521	132,700	215,372,100	1,623
2007	656,609	141,163	1.1	156,290	1,439	224,901,310	140,661	242,921,547	1,727
2008	678,243	152,456	1.1	168,793	1,508	254,472,327	151,914	274,812,426	1,809

ANNEX 1b : SUB-SECTOR GROWTH: QAT AL DHALA'A (LONG DISTANCE)

Year	Number of smallholder Qat producers	Production area (ha)	Productivity ton/ha	Farm output (tons)	Farm gate price (YR/kg)	Farm output (YR/year)	Domestic market (tons)	Domestic market (value millions)	Retail price (YR/kg)
1990	402,707	75,978	0.9	71,908	94	6,723,398	64,717	7,248,304	112
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2008	678,243	152,456	1.1	168,793	1,508	254,472,327	151,914	274,812,426	1,809

ANNEX 2a : CHIAN MAP QAT SANAA (SHORT-DISTANCE)

Value chain actor	Chain function	Lead time (no. of days/week/months of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
Qat farmer	Farming (pruning, cleaning land harvesting) sometimes bagging	3 to 4 months	Hamadan - Sana'a	Average area (10000 m2) or 3500 trees
Trader	Binding - packaging-trading	One day	Sana'a market	Pick-up trucks
Retailer	Binding - selling to final customers	One day	Sana'a Market	Small kiosk/stalls, small rented shops (2x2m), or selling of the back of a van.

ANNEX 2b : CHIAN MAP QAT AL DHALA'A (LONG DISTANCE)

Step number	Value chain actor	Chain function	Lead time (no. of days/week/months of product in hands)	Location(s)	Actor profile (numbers, scale, asset base, etc.)
1	Qat farmer	Farming (pruning, cleaning land and harvesting) sometimes bagging	From 2 weeks to 3 months depending on the type of Qat	Al-Dhala'a	Avrage farm size for farmers interviewed (1000 m2). Interviewers met 10 farmers in the town market that claimed in their area farm size is around 15 Hectare.
2	Intermediary agent	Auction - Agents selling to wholsalers	One day	Al-Dhala'a - Al-Jumrok	Around 20 agents , they all have cars and table for selling
3	Wholesaler	Binding into shakel (2 bundles)- packaging-trading	One day	Aden whole sale market mansoora market	Pick-up truck
4	Retailer	Binding - selling for customers, usually sells as bundle not shakel	One day	Aden various street markets	Renting shops or small plots in qat markets

ANNEX 3a: PROFILE OF QAT SANAA (SHORT-DISTANCE) CHAIN ACTORS

Step number	Value chain actor	Volume of business (bags/year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year)	Gross income (USD/year)	Other income sources (besides XXX)
1	Qat farmer	14,875	8,925,000	44,625	8,925,000	44,625	Fruit orchards and government employment
2	Trader	60,000	48,000,000	240,000	12,000,000	60,000	Fruit growing, shop renting
3	Retailer	16,625	14,962,500	74,813	1,662,500	8,313	Growing fruits and vegetables, taxi driver, and retired

Step number	Value chain actor	% of qat on total income	Sources of capital, including %	Three main perceived contraints	Main perceived business opportunity	Top priority for investment
1	Qat farmer	70%	100 % private	Shortage of water - high taxs - and high prices for diesel.	None	Invest in qat, Trade (grocery wholesaler), diversify agricultural production
2	Trader	80%	100 % private, some finance through banks	Weather - and tax	Open new selling point	Invest at the same field (Qat) i.e. buying more qat
3	Retailer	65%	100 % private	Taxes	Two of the people we met said they want to have a job	Most of them uninterested in qat

ANNEX 3b : PROFILE OF QAT AL DHALA'A (LONG DISTANCE) CHAIN ACTORS

Step number	Value chain actor	Volume of business (shakel/year)	Turnover (YR/year)	Turnover (USD/year)	Gross income (YR/year	Gross income (USD/year)	Other income sources (besides qat)
1	Qat farmer	4,920	6,120,480	30,602	6,120,480	30,602	two of farmers we interviewed were constructor
2	Intermediary agent	136,125	193,297,500	966,488	23,958,000	119,790	None
3	Wholesaler	270,600	573,672,000	2,868,360	189,420,000	947,100	Government employee
4	Retailer	38,650	87,349,000	436,745	5,411,000	27,055	5 of people we interviewed were teachers, accountant, and soldier

Step number	Value chain actor	% of qat on total income	Sources of capital, including %	Three main perceived contraints	Main perceived business opportunity	Top priority for investment
1	Qat farmer	60%	100 % private	the irrigation system - high taxs - and disease	open new market	invest in irrigation sytem (wells) to grow more qat
2	Intermediary agent	100%	100 % private	credit payment without insurance	None	invest at the same field (Qat) and buying and selling cars
3	Wholesaler	95%	100 % private	weather - and tax		invest at the same field (Qat
4	Retailer	80%	100 % private	tax - hot weather - low quantity supplied	supply plastic bags, supply more qat	3 of people we interviewed were uninteristied in qat any more

ANNEX 4a : RELATIONS IN QAT SANAA (SHORT-DISTANCE)

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Qat farmer	12 year	buyers pay credit or cash.	Farmers supplies information on expected time of harvest. Buyers advice on size of leafs (when to pick) and type of packing e.g. leaves in plastic bags or twigs wrapped in a plastic sheet.	None	None	Advice on chemicals to use.	None	None	None
2	Trader	12 year	credit, or cash	about quality, and quantity	10 years	Traders purchas cash and in advance to gurantee supply.	About quality, and quantity and time to to have qat ready to market which may affect watering. Traders that purchase in advance will regularly check-up on the farmer and their product.	Two traders met have relations with banks.	None	None
3	Retailer	8 years	pay cash	about quality	8 years	Short period of time credit	About quality, and quantity	None	None	None

ANNEX 4b: RELATIONS IN QAT AL DHALA'A (LONG DISTANCE)

		Relations with buyers			Relations with suppliers			Relations with thirds		
Step number	Value chain actor	Number of years	Pre-finance	Exchange of information	Number of years	Pre-finance	Exchange of information	Financial institutions	Peers	Gov't / NGO support
1	Qat farmer	12 years	Buyers pay partly cash in advance	Buyers advice of size of leaf and quantity per grade of qat. Farmers supply information on time before harvest. Buyers also offer information and packing required (plastic bag/wrap)	None	None	None	None	one of farmer working with his brother	None
2	Intermediary agent	8 - 10 years	credit	About quality and information	8 - 10 years	cash	About quality, and quantity and time to to have qat ready to market which may affect watering. Traders that purchase in advance will regularly check-up on the farmer and their product.	None	None	None
3	Wholesaler	3 years	credit	About quality, and quantity	5 years	credit	About quality, and quantity and time to to have qat ready to market which may affect watering which agent passes onto farmer. Sometimes traders who have direct link to farmers may poss in information direct to them.	None	None	None
4	Retailer	2 years	pay cash	Required grade and quantity	3 years	one day credit	About quality, and quantity	None	None	None

ANNEX 5a : PRICES, MARGINS AND VALUE SHARES IN QAT SANAA (SHORT-DISTANCE)

Step number	Value chain actor	Purchase price (YR/bag)	Selling price (YR/bag)	Gross income (YR/bag)	Gross margin (%)	Value share (domestic) (%)
1	Qat farmer		600	600	100%	67%
2	Trader	600	800	200	25%	22%
3	Retailer	800	900	100	11%	11%

ANNEX 5a : PRICES, MARGINS AND VALUE SHARES IN QAT AL DHALA'A (LONG DISTANCE)

Step number	Value chain actor	Purchase price (YR/Shakel)	Selling price (YR/Shakel)	Gross income (YR/shakel)	Gross margin (%)	Value share (%)
1	Qat farmer		1,244	1,244	100%	55%
2	Intermediary agent	1,244	1,420	176	12%	8%
3	Wholesaler	1,420	2,120	700	33%	31%
4	Retailer	2,120	2,260	140	6%	6%

ANNEX 6a : QUALITY MANAGEMENT IN QAT SANAA (SHORT-DISTANCE)

Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/Alaki)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Qat Farmer	Hamadani Blue - White - Red	Demand in the market (feed back on product wanted at market), prices, and fertilizer	Hamadani 45% Blue, 30% White, 25% Red	20% - 30% between all three grades or 133YR	Weather, fertilizer, water, and Pesticides	None	One of the farmer expect that consumers may stop buying high price qat
2	Trader	Hamadani Blue - White - Red	The price, the demand in the market, size, shape and colour of leaf also texture (soft). Also softness of the branch stem	Hamadani 45% Blue, 30% White, 25% Red	20% - 30% between all three grades or 150YR	Weather, and pestiside, speed to market and packaging (wet cloth, banana fibre in some places to keep the qat from drying)	None	High demand in the market, qat without chemicals seen less danagerous
3	Retailer	Hamadani Blue - White - Red	The price, the demand in the market, size, shape and colour of leaf also texture (soft). Also softness of the branch stem	Hamadani 45% Blue, 30% White, 25% Red	20% between all three grades or 100 YR	Weather, and pestiside, speed to market and packaging (wet cloth, banana fibre in some places to keep the qat from drying)	None	Two of people we've met expect more demand for Hamadani according due to its low price

ANNEX 6a : QUALITY MANAGEMENT IN QAT AL DHALA'A (LONG DISTANCE)

Step number	Value chain actor	Quality grades distinguished	Indicators used	Proportion of the quality grades (%)	Price differences of the quality grades (YR/Shakel)	Factors affecting quality	Factors affecting traceability	Vision on consumer quality expectations
1	Qat farmer	Qatal - Sameen - Oud	Length of time leaf is allowed to grow: Qatal 2weeks, Sameen, 6 weeks, Oud 12 weeks	Qatal 60% Sameen 38% Oud 2%	Qatal 900 sameen 1700 oud 2900	Weather, water, fertilizer, pesticides and other chemicals	None	None
2	Intermediary agent	Qatal - Sameen - Oud	Size, shape and colour of leaf also texture (soft). Also softness of the branch and stem liquid content.	Qatal 60% Sameen 38% Oud 2%	Qatal 1000 Shakel Sameen 2000 Oud 3000	Weather, pesticides and packaging (wet cloth)	None	None
3	Wholesaler	Qatal - Sameen - Oud	" "	Qatal 60% Sameen 38% Oud 2%	Qatal 1500 Sameen 3000 Oud 4000	Heat (Aden's hot climate), speed to market	Quality - taste - Look	None
4	Retailer	Qatal - Sameen - Oud	" "	Qatal 60% Sameen 38% Oud 2%	Qatal 1600 Sameen 3200 Oud 4200	Heat (Aden's hot climate) speed to market	Quality - taste - Look	none

Annex 1: Key concepts of value chain analysis

Chain actors

Chain actors are those involved in producing, processing, trading or consuming a particular agricultural product. They include direct **chain actors** which are commercially involved in the chain (producers, traders, retailers, consumers) and indirect **chain supporters** which provide financial or non-financial support services, such as bankers and credit agencies, business service providers, government, researchers and extensionists.

Value chains

A value chain is "the full range of activities that are required to bring a product or a service from conception, through the intermediary of production…, delivery to final consumers, and final disposal after use" (Kaplinsky, 2000).

There are two basic processes in the value chain: (a) the physical flow of products from producer to consumer; and (b) the non-physical process of information exchange, finance, and other support services.

We are all part of a value chain: as consumers, we buy tomatoes from a retailer, who gets them from a wholesaler, who buys them from a trader, who gets them from a farmer. Unless you are one of those very few people who makes or grows everything you produce yourself, you are part of numerous value chains that provide us with everything that we eat, drink, wear and use. But if you are one of those rare individuals, you are probably not reading this book.

The term "value chain" emphasizes the fact that at each stage in the chain, the price of the product goes up. That is because each actor in the chain adds to its value – by growing, harvesting, sorting, grading, packaging, processing, labeling, transporting, storing, and putting it on shelves for us to buy. Each of these steps costs money, which the actor recoups by charging for the service.

Some supply chains are impersonal: traders buy from farmers through an auction, then sell to wholesalers through another auction. The actors may not know one another, they may never meet, and they may never do business with each other again. In other chains, the actors know each other well and form stable, long-term relationships. They support each other so they can together increase their efficiency and competitiveness. They invest time, effort and money to reach a common goal of satisfying consumer needs. That enables them to increase their profits.

Calculating profit margins in the chain

Calculating profit margins in the value chain is not straightforward. It requires various types of information and takes several steps. It is necessary to know the following information about costs and revenues.

Costs

Variable costs. These are costs that change according to the amount of produce handled. For a livestock raiser, the variable costs include the costs of feed and vaccinations. If a farmer has 10 cows and decides to raise two more, she or he needs 20% more feed and vaccinations for the new animals. For a livestock trader, the variable costs might include the purchase price of the produce, commission paid to brokers, the cost of health certificates for each animal bought, local taxes paid per animal moved, and interest on loans used to buy produce.

Fixed costs. These are costs that are independent of the amount traded. For the livestock raiser, they include the cost of stables and land. Even if the farmer decides to raise two more cattle, she or he usually does not need to buy more land or build a new stable (at least in the short term). For a trader, the fixed costs may include stall rental, trading licenses and wages of assistants. In practice, it is hard to include some of these costs in calculations, so the tables in the case studies in this book ignore them.

Revenues

The selling price of the produce. This is the actor's revenue. It includes the money she or he earns by selling the produce, plus any other income earned by selling by-products or waste. For livestock, for example, a slaughterhouse sells not only the meat, but also the offal, hide or skin or an animal. Soybean processors may sell both oil and soybean cake. Tomato traders may sell the top-grade tomatoes in a batch at one price, smaller tomatoes at another, and over-ripe fruit very cheaply. All these must be included in the revenue (see below under "Weighting").

Profits and margins

One we know the costs and revenues of each actor in the chain, we can calculate their financial position. Here are some things to look at:

Gross income, or operating profit. This is calculated by deducting variable costs from revenues:

Gross income = Revenue – Variable costs

The gross income is easy to calculate, but it does not take the fixed costs into account.

Gross margin is the gross profit per unit of produce. Calculate this by dividing the gross income by the revenue earned from sales. Then multiply by 100 to give a percentage. Again, this ratio neglects the fixed costs.

Gross margin = Gross income x 100 / Revenue

Added value is the amount of value that each actor in the chain adds. It is the difference between the price the actor pays for the produce, and the price she or he sells it for.

Added value = Price received by actor – Price paid by actor

In most of the cases in this book, this is equal to the actor's revenue minus the previous actor's revenue.

Value share is the percentage of the final, retail price that the actor earns. Calculate this as the added value divided by the final retail price. Then multiply by 100 to give a percentage.

Value share = Added value x 100 / Final retail price

Net income, or net profit, is calculated by deducting total costs (both variable and fixed costs!) from revenues:

Net income = Revenues – Variable costs – Fixed costs

This is the real profit that the actor makes, so is a better measure than the gross income. However, it is hard to calculate because it is difficult to put a figure on the fixed costs.

Net margin is the net profit per unit of produce. Calculate this by dividing the net income by the revenue earned from sales. Then multiply by 100 to give a percentage.

Margin = Net income x 100 / Revenue

This is a better measure than the gross margin, but it also relies on knowing the fixed costs, so is hard to calculate.

Example: Yams in Ghana

The table below is taken from a case study on yam trade in Ghana. It shows the costs and revenues of each of the actors in the value chain, in Ghana cedis per yam.

1	2	3	4	5	6	7
Chain actor	**Variable costs**	**Revenue**	**Gross income**	**Gross margin**	**Added value**	**Value share**
		Selling price	Revenue – Costs	Gross income x 100 / Revenue	Revenue – Previous actor's revenue	Added value x 100 / Retail price
Farmer	0.50	1.00	0.50	50%	1.00	50%
Traveling trader	1.25	1.50	0.25	17%	0.50	25%
Wholesaler	1.54	1.70	0.16	9%	0.20	10%
Retailer	1.74	2.00	0.26	13%	0.30	15%
Total			**1.17**		**2.00**	**100%**

The third column of this table shows that the farmer sells a yam for GH¢ 1.00 to a traveling trader, who then sells it on to a wholesaler for GH¢ 1.50, who sells it to a retailer for GH¢ 1.70, who sells it to a consumer for GH¢ 2.00. Each actor in the chain has costs, shown in the second column: these include the purchase price of the yams from the previous actor, plus the costs of transport, tax, etc. (The table does not show fixed costs.)

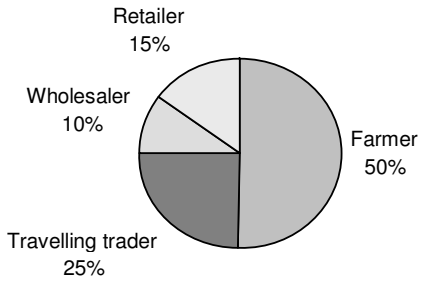
Column 5 shows the gross margin – the percentage of the actor's revenue that is profit. We can see that farmers have a gross margin of 50%, while the wholesaler has a gross margin of only 9%.

Column 7 shows the value share – the percentage of the final retail price (GH¢ 2.00) that each actor manages to capture. The farmer earns 50% of this amount (GH¢ 1.00, in column 6), while the wholesaler earns 10%, of GH¢ 0.20.

In this research we show the gross margin and value share, where it is possible to calculate these. Note that the gross margin takes the costs of each actor into account, while the value share does not. Accurate information on costs is hard to gather, so many of the cases do not have figures on costs – so it is not possible to calculate gross margins.

Note also that the value shares add up to 100%, but the gross margins do not. In this book we use pie charts like here below to show the value shares.

Value shares in yam



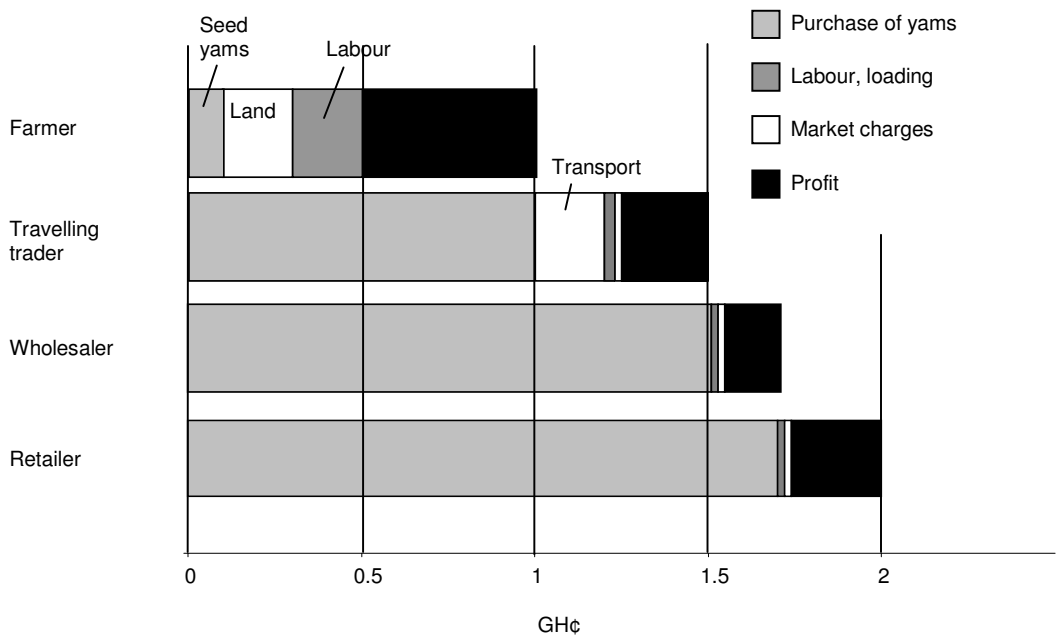
We also show the information in the table as a bar chart. Below is a bar chart for the Ghana yam example. Looking at the top bar in this chart, we see that the farmer's profit (in black) is a big share of his or her total revenue. This reflects the amount of work the farmer puts into growing yams: the "profit" includes his or her own labour (the "labour" in the bar is hired labour which requires a cash outlay).

We can see from the second bar that the traveling trader has two main costs: the cost of buying the yams from the farmer, and transport.

The graphic also shows us that the ratio of profit (in black) to revenue (the whole bar) generally decreases as we go down the chain. There are two reasons for this: each actor in the chain has top spend an increasing amount of money to buy the yams,

and the later actors own the yams for a shorter period, so put less work into them.

Value shares and costs of actors in the yam



Problems in calculating costs

When calculating costs, we commonly encounter certain problems. The most common are as follows.

Fluctuations Costs of agricultural products and services vary widely from season to season, from day to day, and even within a single day: produce that sells for a high price early in the morning may be sold at a loss towards the end of the day. Quality and size are important: depending on market, large or small tomatoes may be cheap or expensive. A minor blemish can demote an otherwise export-grade mango to a much lower-priced category. Fluctuating currency exchange rates and inflation also make it difficult to compare prices.

Variable or fixed? It can be hard to categorize a cost as fixed or variable, and there is not always a right or wrong way to do it. For example, is transport a fixed or variable cost? It costs the same to hire a lorry, whether you transport 10 cows or 12 (so the cost in this case is fixed). But if you transport 50 cows, you may need to hire extra lorries (so here it is a variable cost).

Labour. Farmers and traders spend a lot of time growing and trading produce. But they rarely pay themselves (or their families) a cash wage, so it is hard to decide what figure to include. The tables in this book include this type of labour as part of profits.

Losses. For perishable produce (such as tomatoes), losses may be significant, so it is important to reflect the actual amount the trader sells.

Depreciation means the wearing out of capital goods, such as machines and equipment. Most traders have few capital goods to wear out – they usually hire lorries rather than owning their own vehicle. But farmers do have capital goods, such as ploughs and draught animals, which have to be replaced every few years. They should set aside money each year to pay for this major expense. But this is difficult to calculate, so the tables in this book do not take it into account.

Weighting. Prices differ in different marketing channels and depend on the grade or quantity sold. They may also change over the season, and may even vary during the day, like fresh vegetable in many marketplaces. So it is necessary to calculate average prices by weighting them according to the amount sold.

Source: KIT and IIRR (2008), Trading Up: building cooperation between farmers and traders in Africa, Amsterdam / Nairobi