HONEY EXPORTS FROM TANZANIA

BUSINESS PROCESS ANALYSIS FOR ENHANCED EXPORT COMPETITIVENESS
Acknowledgments

Ms. Namsifu Nyagabona is the author of this report. She was assisted by Mr. Christian Ksoll, International Consultant. They are wholly responsible for the information and views stated in the report.

The consultants’ team acknowledges with gratitude the contributions of a number of people towards the process of this business process analysis (BPA), without whose participation the project would not have succeeded. In particular, we would like to express our gratitude and appreciation to Ben Czapnik and Giles Chappell of the Trade Facilitation and Policy for Business (TFPB) Section at the International Trade Centre (ITC), for their overall oversight, feedback and in-depth comments and guidance from the inception to the finishing of the report.

We express our gratitude and thanks to the people whom we interviewed in the process of collecting information for the report. We also express our gratitude and thanks to the persons we have interviewed for the study, along with the participants in the workshop organized by the International Trade Centre (ITC) on 25 February 2016 in Dar es Salaam, Tanzania.

Victoria Sarant edited the report and Isabelle Jouve, Associate Programme Adviser, TFPB, ITC, prepared the copy for printing.
HONEY EXPORTS FROM TANZANIA

Contents

Acknowledgments ..................................................................................................................................... 1
Acronyms and abbreviations ..................................................................................................................... 7
Background................................................................................................................................................ 9
The Promoting Intra-regional Trade in Eastern Africa Project .............................................................. 9
Business Process Analysis of honey in Tanzania ................................................................................ 10
Methodology of the study ........................................................................................................................ 11
Study approach ................................................................................................................................... 12
Limitations............................................................................................................................................ 12
Business Process Analysis in Tanzania .................................................................................................. 14
Overview of the supply chain ............................................................................................................... 14
Scope................................................................................................................................................... 15
Pre-export requirements ...................................................................................................................... 16
Business Process Analysis .................................................................................................................. 17
1. The Buy Process ......................................................................................................................... 18
   1.1 Conclude sales contract ...................................................................................................... 18
2. The Pay Process ......................................................................................................................... 19
   2.1 Make payment ..................................................................................................................... 19
3. The Ship Process ........................................................................................................................ 19
   3.1 Obtain Sanitary Certificate ................................................................................................. 19
   3.2 Obtain Export Permit ........................................................................................................ 20
   3.3 Pay Levy................................................................................................................................... 21
   3.4 Obtain Land Transport Permit ............................................................................................. 21
   3.5 Obtain Radiation Certificate ............................................................................................... 22
   3.6 Arrange transport (land) ...................................................................................................... 22
   3.7 Customs declaration ............................................................................................................ 23
   3.8 Obtain Certificate of Origin ............................................................................................... 24
3.9 Conclude border process ................................................................. 25

Summary of findings ......................................................................................................................... 25

Recommendations ................................................................................................................................. 27

1. Facilitate trade by simplifying processes and procedures .......................................................... 27

Explanatory notes on the recommendations: ....................................................................................... 28

1.1 Remove the need for Sanitary Certificates for samples ......................................................... 28

1.2 Provide incentives for officers to use their own vehicle ......................................................... 28

1.3 Eliminate Export Permit ........................................................................................................ 28

1.4 Eliminate levy and Land Transport Permit ........................................................................... 28

1.5 Eliminate radiation-free certificate ...................................................................................... 29

1.6 Improve the current border process .................................................................................... 29

1.7 Enhance trade information by providing trade information and forms online ....................... 30

2. Enhance product quality and supply chains .............................................................................. 30

2.1 Establish supply chain infrastructure to enhance product quality ....................................... 30

2.2 Encourage value addition ..................................................................................................... 31

2.3 Encourage the formation of associations ............................................................................. 31

3. General Recommendations ....................................................................................................... 31

3.1 Improve the current TANCIS infrastructure ........................................................................ 31

3.2 Introducing a trade portal .................................................................................................... 31

3.3 Establish one-stop shops ..................................................................................................... 32

3.4 Delegation of signature authority ....................................................................................... 33

4. Prioritization and options for implementation ........................................................................... 33

4.1 Basic simplification of processes and procedures ............................................................... 33

4.2 Improve border process by applying a risk management system and better border agency cooperation .................................................................................................................................. 34

4.3 Advanced delivery of government services ........................................................................... 34

4.4 Recommendations to strengthen the supply chain and product quality ................................ 34

Appendices ........................................................................................................................................... 37
HONEY EXPORTS FROM TANZANIA

Appendix I: Honey sector overview ..................................................................................................... 37
Appendix II: “As-is” Business processing mapping ............................................................................. 40
Appendix III: Characteristics of honey ................................................................................................. 64
Bibliography ............................................................................................................................................. 66

Figures

Figure 1: Map showing the honey export route ....................................................................................... 12
Figure 2: Use Case Diagram for the Honey from Tanzania to Kenya ..................................................... 17
Figure 3: Time chart for the export of Honey from Dodoma Tanzania to Nairobi Kenya ................... 26
### Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPA</td>
<td>Business Process analysis</td>
</tr>
<tr>
<td>CoO</td>
<td>Certificate of origin</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FCL</td>
<td>A full container load</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HMF</td>
<td>Hydroxyl - Methyl-Furfural</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>INCONTERM</td>
<td>International Commercial Terms</td>
</tr>
<tr>
<td>ITC</td>
<td>International Trade Centre</td>
</tr>
<tr>
<td>MAFS</td>
<td>Ministry of Agriculture and Food Security</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MIT</td>
<td>Ministry of Industry and Trade</td>
</tr>
<tr>
<td>NSGRP</td>
<td>National Strategy for Growth and Reduction of Poverty</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PACCIA/PACT</td>
<td>Programme for building African Capacity for Trade</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-Private Partnership</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td>TANCIS</td>
<td>Tanzania Customs Integrated System</td>
</tr>
<tr>
<td>TANTRADE</td>
<td>Tanzania Board of External Trade</td>
</tr>
<tr>
<td>TCCIA</td>
<td>Tanzania Chamber of Commerce, Industry and Agriculture</td>
</tr>
<tr>
<td>TFDA</td>
<td>Tanzania Food and Drugs Authority</td>
</tr>
<tr>
<td>TSI</td>
<td>Trade Support Institutions</td>
</tr>
<tr>
<td>TIN</td>
<td>Tax Identification Number</td>
</tr>
<tr>
<td>UN CEFACT</td>
<td>United Nations Centre for Trade Facilitation and Electronic Business</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
</tr>
<tr>
<td>UNESCAP</td>
<td>United Nations Economic and Social Commission for Asia and the Pacific</td>
</tr>
<tr>
<td>UNNEExT</td>
<td>United Nations Network of Experts for the paperless Trade in Asia</td>
</tr>
</tbody>
</table>
HONEY EXPORTS FROM TANZANIA

URT	United Republic of Tanzania
WTO	World Trade Organization

Exchange Rate Used

USD 1 = TZS 2,200
Background

The Promoting Intra-regional Trade in Eastern Africa Project

The International Trade Centre (ITC) is a joint agency of the United Nations and the World Trade Organization, focusing in particular on developing the export capabilities of small and medium-sized businesses in developing and transition economies. ITC is a 100% “Aid for Trade” organization, supporting trade that delivers inclusive and sustainable development results.

ITC is currently implementing the Project “Promoting Intra-regional trade in Eastern Africa”, which aims to contribute to inclusive and sustainable export-led growth. Funded by Finland, the Project is working with local partners to promote participation of small and medium sized enterprises (SMEs) in selected agri-food sectors in regional and global value chains. Besides Tanzania, the Project is also being implemented since 2014 in Kenya and Zambia.

The Promoting Intra-regional Trade in Eastern Africa Project aims to respond to:

- Value chain weaknesses that hinder export competitiveness of producers and SMEs in selected agro-value chains (mango, honey, spices);
- Deficiencies of TSIs to provide the required support to enable SMEs to upgrade their competitiveness and successfully engage in export development.

The two expected outcomes of the Project are as follows:

i. Outcome 1: Increased export competitiveness of SMEs in selected agro-food value chains

ii. Outcome 2: Enhanced performance for trade and business support service providers in selected agri-food value chains at national and regional levels

In Tanzania, the project is pursuing the following activities:

i. Developed Sector Roadmaps for honey, spices and mango sectors and the development of appropriate response strategies to enable those sectors engage in export development;

ii. Providing advisory services in Quality Compliance and Food Standards and Supply Chain Management;

iii. Expanding SIDO’s packaging services to SMEs through setting up of a Packaging Services Centre. The upgrading of existing packaging capabilities will also be coupled with the implementation of branding strategies;

iv. Upgrading the service delivery of other TSIs such as Tanzania Honey Council (THC), Tanzania Forestry Services (TFS), SIDO, and Association of Mango Growers (AMAGRO).

v. Enabling National apex trade promotion bodies and business associations to advocate business interests and to influence business and trade policies affecting regional trade.

The principle ITC partner in Tanzania for the implementation of this project is the Small Industries Development Organisation (SIDO).
Business Process Analysis of honey in Tanzania

As part of the activity to enable national apex trade promotion bodies and business associations to advocate business interests and to influence business and trade policies affecting regional trade, ITC has carried out a Business Process Analysis (BPA) study. This also follows on from the Sector Development Roadmap for honey by specifically addressing export processes in the honey sector in Tanzania. ITC also organized a stakeholder workshop on 25 February 2016. The workshop “Enhancing Business Processes for Export Competitiveness” discussed the preliminary findings of the study, including the recommendations for simplifying and streamlining business procedures.

The BPA study provides the basis for advocacy, public private dialogue (PPD), and trade policy reform, including intra-regional trade policies. In particular, the BPA study includes a simple methodology to elicit, document, and analyse the existing “as-is” business processes involved in international trade, as well as aid in developing recommendations for further improvement. It suggests a set of practical steps and activities, from setting the scope of the business process analysis project, planning its implementation, collecting relevant data, and presenting it in an easily understandable manner; to analysing the captured data in order to identify bottlenecks and develop recommendations for improvement.

As a result, the TPOs and business associations will be able to use the BPA study to advocate their business interests and to influence business and trade policies affecting regional trade. Where appropriate, sectoral associations in Tanzania could also work with regional apex bodies in the region to address certain obstacles, including those which could be addressed in the context of the Tripartite FTA. Furthermore, businesses will also benefit, through enhanced trade performance, from a better understanding of their value chains.
Methodology of the study

The objective of the current study is to apply the BPA methodology to review and evaluate present business processes and procedures, their rationale, the time required to complete them, and the associated costs for the export of raw table honey.

The Business Process Analysis Guide to simplify Trade Procedures, updated September 2012, has been used to conduct this BPA exercise. This guide was jointly developed by the United Nations Network of Experts for the paperless Trade in Asia and the Pacific (UNNExT), UNESCAP, as well as the United Nations Economic Commission for Europe (UNECE).

The BPA employs the UN/CEFACT International Supply Chain Model. Every Business process is categorized and analysed through this framework (Keretho and Naklada, 2011). This model comprises of three process areas: (1) Buy, (2) Pay and (3) Ship.

Buy – Activities concerning the conclusion of trade terms up to a point where sales contract is established.

Pay – Activities concerning claims for payment of goods (Keretho and Naklada, 2011).

Ship – Activities concerning the arrangement of transportation and other actions necessary to meet regulatory requirements, such as:

1. Obtain Sanitary Certificate;
2. Obtain Export Permit;
3. Pay levy;
4. Obtain Land Transport Permit;
5. Arrange transport (land);
6. Customs declaration;
7. Obtain Radiation Certificate;
8. Obtain Certificate of Origin; and,
9. Conclude border process.

Based on the results of this study, policy recommendations will be developed to simplify and harmonize trade processes in Tanzania. The honey sector has been chosen because of its importance for the Tanzanian economy. A detailed overview of the sector is provided in Annex 1: Tanzania Honey Sector overview.
Study approach

The BPA for exporting raw table honey is based on research and extensive interviews with key stakeholders such as government agencies, exporters, traders, beekeepers and transporters. In addition, some key sites have been visited to better understand the trade. The objective of the visits and interviews was not only to obtain information on business processes but also to explain this assignment, its objectives, and how it can be used to influence policy to facilitate trade, hence, contribute to national development objectives. Visits were also intended to build ownership both at higher levels of government as well as with technical officers.

Based on the interviews and visits, the BPA provides great detail on trade processes illustrated graphically with the aid of UN/CEFACT unified modelling language (UML) and complemented by detailed tables for each process. The details given in the tables also provide an indication of the time needed to complete each process and the costs that have to be borne by an exporter. The diagrams set out all the stakeholders and process participants for each single business process as well as their relationship to each other. Furthermore, the analysis covers all areas of the trade, including the commercial, transport, regulatory and financial procedures.

To validate the findings of this BPA, the study team carried out several rounds of interviews with the various process participants. In addition, a stakeholder consultation meeting was held in Dar es Salaam in February 2016, which included stakeholders from the private and public sector involved in the honey trade.

Limitations

The following challenges were experienced during the assignment:
• Much of cross-border trade is done via informal channels. Due to this fact, it was hard to find exporters crossing the border formally to provide information on the formal border process. Many exporters transport their goods to the border area and sell it to Tanzanian or foreign border traders.

• In a number of areas information was largely inconsistent between different sources while in other areas data was simply not available. Furthermore, many exporters were reluctant to share information. In addition, some supply chain participants including government officials were sometimes unavailable to provide feedback.

• This study was mainly conducted from Dar es Salaam. Most interviews were conducted by phone for all actors who were not in Dar es Salaam, including the exporter and transporter in Dodoma. These circumstances limited the research team’s ability to observe what is actually done on the ground.
Business Process Analysis in Tanzania

Overview of the supply chain

The main buyers of Tanzania honey are the EU, Oman, UAE, Kenya, Rwanda, Uganda, China and Saudi Arabia (PASS, 2013) (Mapolu & Kamote, 2015). Shipment sizes vary but tend to be between 2 to 25 metric tons. Table 1 provides an overview of formal honey exports between 2013 and early 2015 (as recorded by the Tanzania Forest Services Agency (TFS)). While the list of TFS-registered honey traders is long, the table shows that very few request an Export Permit. The majority of registered honey traders are local distributors selling honey as food in the local market.

Table 1: Tanzania Honey Export Countries, Shipment Size and Number of Exporters

<table>
<thead>
<tr>
<th>Year</th>
<th>Export Country</th>
<th>Metric Tons</th>
<th>No. of Exporters</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>China</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Oman</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Saudi Arabia</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td>German</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Belgium</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Oman</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>2015 Jan</td>
<td>Norway</td>
<td>19</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: (Mapolu & Kamote, 2015)

In addition to the exports in Table 1, there is (formal and informal) trade between Tanzania and neighbouring countries. The average shipment size for traders around the Tanzania borders is usually much smaller, approximately 5 tons, with an average value of TZS 30,000,000 (USD 15,000). The importers are domestic and foreign border traders who mostly buy table honey. Honey is usually processed further and packed for retail sales for human consumption.

In Tanzania, the honey supply chain is very fragmented and exporters find it difficult to collect sufficient quantities of honey from beekeepers/ traders that meet export standards. This is because the domestic market offers a higher price than the export markets while imposing lower quality standards. However, the export market still remains attractive for Tanzanian producers because the domestic demand is limited and forces traders to look for additional (foreign) markets. Generally, exporters collect the honey during the main harvesting season directly from beekeepers via their cooperatives/groups or traders’ depots in Tabora, Geita, Kigoma, Singida, Mpanda and Dodoma, the main honey producing regions in Tanzania.

In order to fulfil the orders, exporters usually communicate with beekeepers and traders prior to buying the honey to ensure that they obtain the quality and quantity needed. Honey is normally packed and supplied in white plastic buckets of 20 or 30 litres, or in lacquered drums of 300 kg for bulk consignments.

A significant challenge is to ensure consistency in the supply quality, especially in scattered (as opposed to integrated) honey supply chains in Tanzania with producers based in different locations. But different producing areas have different kinds of flowers and pollens which result in variations in taste and colour of honey. For example,

- Miombo honey in Tabora ranges from light amber to dark amber in colour.
- Singida honey is golden due to varieties of shrubs and food crops.
HONEY EXPORTS FROM TANZANIA

- Handeni honey from Tanga has more or less similar features as that from Tabora but, as sisal is the main flowering plant in the area, the honey is much lighter in colour and the taste is more bitter.

With these regional differences in the honey, exporters must be careful to ensure they always supply honey from the same source throughout a consignment. Selling blended honey (at a consistent taste and quality) becomes very difficult because the exporter must be consistent in the blend (maintaining the same taste by mixing several honeys).

Also handling, packaging and transporting the honey becomes increasingly important because some honey characteristics are easily altered. For example, the formation of Hydroxyl-Methyl-Furfural (HMF), an organic compound derived from dehydration of certain sugars in honey, increases with every exposure of honey to heat. Also viscosity\(^1\) and hygroscopic\(^2\) characters are easily affected if the honey is not properly handled during storage or transport. Therefore the exporter must carefully select appropriate packaging materials or even the time of the day when the honey is transported to protect the honey from losing its natural characteristics.

Unfortunately it is normal practice in Tanzania to transport honey containers in an open-truck containing other goods. Ideal transporting requires temperature controlled vehicles. While this would protect the honey, it also drives transportation costs up. With no price premium for good quality honey, collectors do not bother to look for a better packaging and transporting mechanism to avoid extra costs. Annex IV provides further details on how honey quality and characteristics are affected by the way it is stored, packaged, handled and transported. Beekeeping Regulations, 2005 Part III, Section 19 (1) and (2), provide guidance on the handling of honey:

"Honey shall be carried so as to protect containers from mechanical damage and contamination". "Transportation of honey shall be done during the night in order to avoid the heat of the sun that could adversely affect the quality of honey or if done during the day shall be done using refrigerated or insulated containers"

Scope

This study is based on a honey export shipment from Tanzania to Kenya. The details of this shipment are as follows:

- The HS-Code for the product is 04090000; it is raw honey for further processing.
- The honey originates in Dodoma with the final destination in Nairobi, Kenya.
- The value of the cargo is TZS 30,000,000 (US$ 15,000) with a per kg price of TZS 6,000 (US$ 3).
- The total weight of the cargo is 5 tons.
- The honey is packed in 20 litres buckets and transported in an open truck to Nairobi.
- The exporter is a trader.

---

\(^1\) "Freshly extracted honey is a viscous liquid. Its viscosity depends on large variety of substances and therefore varies with its composition and particularly with its water content. Viscosity is an important technical parameter during honey processing because it reduces honey flow during honey processing, extraction, pumping, setting, filtration, mixing and bottling" (Olaitan, Adeleke, & Ola, 2007).

\(^2\) "Hygroscopicity describes the ability of honey to absorb and hold moisture from environment. During processing or storage the Hygroscopicity can become problematic, causing difficulties in preservation and storage due to excess water content. Normal honey with water content of 18.8% or less will absorb moisture from air of a relative humidity of above 60%" (Olaitan, Adeleke, & Ola, 2007).
The shipment is for only one consignee and there is no consolidation of cargo on the truck.
The buyer is a processor of honey. After processing, the honey is packed and distributed to retailers.
Payments are made upfront but the risk for transporting cargo from Dodoma to Nairobi is carried by the seller.
All stakeholders comply with existing legislation.

Pre-export requirements

Exporters must obtain the following documents before they are able to export:

- **Tax Identification Number (TIN) certificate**
  The TIN certificate needs to be obtained only once from Tanzania Revenue Authority (TRA), usually when a business entity is established. It is given to an individual, business partners registered by Business Registration and Licensing Agency (BRELA) or a company. The TIN is a proof that an individual or a business entity pays tax.

- **Business License**
  A Business License is provided by the municipal authority where the business entity is located. It can be obtained after the TIN has been produced and fulfils municipal conditions for doing business. The business license must be renewed annually.

- **Certificate of registration**
  The certificate of registration is obtained from Tanzania Forest Services (TFS) upon application and presentation of TIN and Business License. All honey dealers are required to register. A fee for registration is charged at TZS 55,000 (US$ 27). An additional amount of TZS 26,000 (US$ 13) is paid for a preliminary area test conducted by TFS.

  To obtain the certificate, honey traders visit the respective local TFS office, complete the application form and attach the business license and TIN certificate. The fees are paid through the bank and the payment receipt is attached with other document to verify that payment has been done. The registration and preliminary check must be renewed annually.

  The preliminary area test is a physical inspection requiring a TFS official to visit the production area. Depending on the requirements of the importer or importer’s country the following may also be needed:

  - **Health certificate from the Tanzania Food and Drugs Authority (TFDA), and**
  - **Standards certificate from the Tanzania Bureau of Standards (TBS).**

  While TDFA certifies with its health certificate the health standards of a facility, TBS certifies the products being produced in a facility. Every food dealer is required to undertake a health test for his/her facility in order to be allowed to run a food business.

  The laboratory analysis report from the health certificate is later also needed to obtain the Sanitary Certificate from TFS.

On a voluntary basis, exporters/importers could use the following services:

- **Barcode and Barcode Certificate from GS1**
GS1 offers barcodes and traceability standards. These standards are published documents that establish specifications and procedures designed to maximize the reliability of the products. They address a range of issues, including various protocols to help users maximize product functionality and compatibility, facilitate interoperability and support consumer safety and public health. Exporters benefit from this service as it aids in establishing consistent protocols that can be universally understood which in turn, helps fuel compatibility and expedites time to market. Barcodes and traceability standards are also measures that make it easier for buyers to understand and compare competing honey products.

A fee is charged to obtain the bar code for each product line of honey. The fee is charged per number of products and volume. The exporter is required to take samples of different product-lines to GS1. It takes a day or two to obtain both the barcodes and the traceability certificate.

- Report of a Third Party Inspector (selected by the importer)

A third party inspector may be appointed by the importer to ensure that the consignment meets the agreed quantity and quality standards. The third-party inspector works on the behalf of the importers.

**Business Process Analysis**

The first part of this BPA is an overview of the present “as is” process of raw table honey, exported from Dodoma, Tanzania to Nairobi, Kenya by land. Figure 1 below shows the supply chain and all the steps the exporter takes to export honey from Tanzania to Kenya by land transport:

**Figure 2: Use Case Diagram for the Honey from Tanzania to Kenya**

The supply chain of exporting honey has three main processes, within which several steps are carried out. There are also several parties involved in the exporting process. Different parties have different roles and decisions to make in order to proceed with the export process. In each of the processes and
HONEY EXPORTS FROM TANZANIA

decision making points, there are documents to be reviewed or product samples to be checked before decisions are made on whether to start afresh or to proceed to the next step in the export process line.

1. The Buy Process

1.1 Conclude sales contract

This step involves the exporter, the importer, the TFS and the courier.

This step starts with the potential buyer contacting the exporter and enquiring if the exporter has honey to sell (according to the buyer’s specifications). If the exporter confirms availability of honey, the importer requests a sample to verify the quality and type of honey.

The exporter is then required to obtain a Sanitary Certificate. For this, the exporter takes a sample (a minimum of 1 kg regardless of the actual shipment size) to TFS and pays TZS 40,000 (US$ 20) for the analysis. Unless the test result does not meet the specifications of the buyer (in which case the exporter must find another product), the TFS issues the Sanitary Certificate. The exporter receives the Sanitary Certificate that is needed to verify the safety of the honey to be traded. Otherwise, the exporter obtains the Sanitary Certificate required to send the sample.

The exporter then sends a sample to the importer via courier service enclosing the Sanitary Certificate. The courier charges are approximately TZS 20,000 (US$ 10). The importer analyses the sample regarding type and quality. Most importers are particularly interested in water content and viscosity. Some Kenyan buyers do not require any further testing and trust the Standards Certificate of Tanzanian authorities. If the honey does not meet the requirements of the buyer, the negotiations are terminated. Otherwise, the importer notifies the exporter and requests a Proforma Invoice. The exporter prepares the Proforma Invoice and sends it to the importer. The importer reviews the Proforma Invoice and sales terms. If they reach an agreement, the importer sends a purchase order. At this stage the buyer and seller usually also agree on the mode of transportation (verbally). Land transportation is mainly used for exports to neighbouring countries. In such a case, the exporter bears all transportation costs and risks involved in bringing the goods from Dodoma to Nairobi.

The exporter responds by sending a commercial invoice to the importer and the process is concluded by the importer receiving the commercial invoice.

This step takes on average 10 days and costs TZS 20,000 (US$ 10) for the courier service and TZS 40,000 (US$ 20) for the Sanitary Certificate.

It is also worthwhile to note that in Tanzania a Sanitary Certificate is needed for the sample shipment. This is rather unusual in international trade. In most countries the Sanitary Certificate is only needed for the actual shipment. Details on obtaining Sanitary Certificate can be found in the ship process “3.1 Obtain Sanitary Certificate”.

TFS has its head office in Dar es Salaam as well as offices in the regions. Unfortunately, the region offices are usually far away from exporters, making it cumbersome to obtain the Sanitary Certificate.

Commonly the sales terms are dictated by the buyer. Stakeholders reported that in long-standing business relationships many are paid in full in advance but they bear the full risk until the delivery in the buyers designated delivery point. Delivering the honey all the way to the buyer’s premises in Kenya

2 For details on the process of obtaining the Sanitary Certificate please see process step 3.1 Obtain Sanitary Certificate.
strains the working capital of the seller because payment happens at a later stage. Hence, a seller needs to carefully evaluate if the sales terms and obligations can be met and that they do not overburden the financial capabilities of the company.

It should be noted that in many cases communication between buyer and seller is informal - verbal agreements via phone or email communication. Only in a few cases are documents generated beyond what is required from a regulatory perspective. This indicates that most transactions are built on trust since in some cases there are no written contracts (including on parameters such as price, quality standards, payment terms, etc.).

2. The Pay Process

2.1 Make payment

Payment is usually done after the importer has received the goods at the buyer’s depot.

This step involves the exporter, the importer, the exporter’s bank and the importer’s bank.

The step starts with the exporter requesting payment. On arrival of the goods, the exporter requests the importer to make the payment via MoneyGram. The importer receives the request, makes payment and notifies the exporter and the exporter’s bank. The importer’s bank receives the payment order from the importer and notifies the exporter’s bank. The exporter’s bank receives the payment made by the importer’s bank. The exporter approaches the exporter’s bank (MoneyGram service point) and applies to withdraw cash. The exporter’s bank issues the payment and the exporter receives the payment.

This step takes on average four days and costs MoneyGram fees of TZS 6,000 (US$ 3).

The private sector reported that most payments are made within two weeks after the agreed conditions have been met, i.e. after the goods have been delivered at the agreed point.

3. The Ship Process

3.1 Obtain Sanitary Certificate

It is important to note that this step is carried out in parallel with the next step 3.2 Obtain Export Permit.

This step involves the exporter and the TFS, a statutory government executive agency.

TFS is mandated to develop and manage forest and bee resources. Among its responsibilities, it is mandated to provide the Export Permit, Land Transport Permit, and Sanitary Certificate to exporters of bee products.

The step starts with the exporter applying for a Sanitary Certificate by submitting the following documents:

- Completed application form,
- TIN certificate (copy), and,
- Business license (copy).
Upon receipt of the application form, the TFS requests payment from the exporter for the physical inspection of the consignment and the Sanitary Certificate. Charges apply for every consignment above 30 kg and not exceeding 20 tons. Consignments above 20 tons are charged as a separate consignment. After payment is made, the TFS officer visits the exporter’s depot to verify the consignment and physically inspect the cargo and packaging materials used. According to stakeholders involved in this study, for honey TFS tests mainly water content and viscosity. In some cases, they also request to see the Standards Certificate from TBS. If the conditions are acceptable, TFS issues the Sanitary Certificate. If not, TFS refuses to issue the Sanitary Certificate and the exporter must rectify any shortfalls before submitting a new request. Alternatively, the process is terminated.

This step takes three days and costs TZS40,000 (US$ 20). The certificate is often also required by the importing country to show that the exporting country guarantees that the honey in question has passed both quality and safety tests. It should be noted that the certificate must be issued by the Ministry of Natural Resources as opposed to the Ministry of Agriculture. TFS is under the Ministry of Natural Resources and is the one responsible for honey products. Any other certificate is not official and is likely to be rejected by the buyer.

Another challenge exporters experience is that it takes a long time to have an official assigned to conduct the testing and physical inspection. According to the regulation, the whole process must be completed within a time period of 7 days. But in most cases this timeframe is too long to be practical and exporters must pay extra money to initiate and complete this process as early as possible.

The charges of TZS 40,000 (US$ 20) for the physical inspection include also the transport of the official(s) from their duty station to the inspection location. However, in practice, officials usually do not have any means of transport available and the exporter must provide the transport to and from the inspection site. There is no incentive for officers to use their private vehicles to go to the inspection site. This represents an additional “hidden” cost in the process. If the exporter’s location is in rural areas, the exporter takes the consignment in some cases to the nearest TFS office (there are offices in each region) for in order to conduct the physical inspection. To reduce costs, the trip is often combined with trips for other purposes.

3.2 Obtain Export Permit

An Export Permit has to be obtained for every consignment. It cannot be re-used for another consignment because the Sanitary Certificate’s number is noted on the Export Permit. The objective of the Export Permit is for the government to record export trade, assess taxes and monitor food security. In order to obtain an Export Permit, exporters must have been registered at TFS as a honey dealer. The registration is renewed annually at a cost of TZS 55,000 (US$ 27.50).

Obtaining the Export Permit involves two parties, namely TFS and the exporter.

This step starts with the exporter applying for an Export Permit by submitting the following documents to TFS:

- Application form,
- TIN certificate (copy), and,
- Business license (copy).

Upon receipt of the application form, TFS issues a payment order. The exporter makes payment and then TFS official visits the consignment site for verification, physical inspection and packaging materials used. If all conditions are acceptable, TFS issues the Export Permit. If not, TFS refuses to issue the permit.
Costs involved in this process may amount to TZS 60,000 (US$ 30). This step takes 3 days and occurs concurrently with the obtaining Sanitary Certificate.

### 3.3 Pay Levy

This step involves the exporter and the Local Government Authority (LGA).

This step begins with the exporter collecting honey. The exporter then reports the number of buckets collected to LGA. The LGA computes the local government levy. In Dodoma municipality, the LGA charges TZS 2,000 (US$ 1) per bucket. The local government authority requests payment and the exporter makes the payment in cash. The LGA issues a payment receipt and hands it to the exporter.

The process of paying the levy takes one day on average. The fee (for Dodoma) is TZS 2,000 (US$ 1) per bucket. In the case of this BPA it totals TZS 334,000 (US$ 167).

The levy is regulated not to exceed 3% of the farm gate price. In Dodoma the levy accounts for 1.1% of the farm gate price. Paying the levy adds to the cumbersome export process. For example, the payment receipt must be carried from Dodoma to Namanga, a distance of 419 km, as evidence of local levy payment. There are several check points along the route where the receipt must be produced. Failure to show the receipt means that the cargo will be retained until all requirements are adhered to. Additionally, the transporter may be stopped by traffic police at least four times. Although traffic police are not mandated to control exports, they stop vehicles to make sure the cargo is not obtained illegally and that road users abide with traffic rules.

### 3.4 Obtain Land Transport Permit

Honey being a forest product is subjected to exploitation control. A Land Transport Permit must be obtained to transport honey domestically. One of the objectives of the Land Transport Permit is to ensure that local levies are paid to the LGA. This is enforced at various check points along the Dodoma-Namanga route (see above). Failing to show the Land Transport Permit results in high penalties.

This step involves TFS and the exporter.

A legal consignment is provided with a Land Transport Permit from TFS. The permit allows the consignee to transport honey within the country. The step starts by the exporter requesting for the permit from the local TFS office. The exporter submits the following documents:

- Application form,
- TIN number (copy),
- Business license (copy),
- Export permit (copy), and
- Levy payment receipt.

The TFS then verifies the documents. If the documents are not in order, the TFS denies issuance of the Land Transport Permit and either the cargo or documents must be rectified. If the documents are in order, the exporter will be required to pay a fee of TZS 7,500 (US$ 3.75). The Land Transport Permit is valid up to seven days. This permit is renewable, but the exporter must declare why the consignment was not transported in due time.

---

* Checkpoints are located at Kondoa district, Babati district, Arusha Municipality and Namanga border.
This step takes two hours and costs TZS 7,500 (US$ 3.75).

### 3.5 Obtain Radiation Certificate

All imports and exports are required to obtain the Radiation Certificate. This is based on the Atomic Energy Act 2002. The objective is to prevent consumers in Tanzania and abroad from consuming radiated goods.

This step involves the exporter, the bank, the courier and the Tanzania Atomic Energy Commission (TAEC).

To obtain a Radiation Certificate, the exporter requests, in person, a Radiation Certificate from TAEC. The exporter completes a Food Sample Record Form and attaches a copy of the commercial invoice. The two documents are then submitted with a sample to the Arusha or Dar es Salaam offices. TAEC receives the request and issues a payment order. The exporter pays the fees through the bank, the bank receives the payment and issues a payment receipt. The exporter submits the payment receipt and TAEC sends the sample from Dar es Salaam to Arusha using a courier service. TAEC then conducts a radioactivity analysis. If the results of conducted analysis are not acceptable, TAEC does not issue the certificate and the step is terminated with TAEC monitoring the destruction of the cargo. However, when the results are acceptable TAEC issues a Radiation Certificate. The certificate for exporters in Dar es Salaam are sent back by courier service. The exporter collects the same from TAEC offices in Arusha or Dar es Salaam.

This step takes on average 4 days for those in Dar es Salaam and costs TZS 78,278 (US$ 39.14). TZS 61,778 (US$ 30.14) is paid in analysis fee (0.2 % FOB value) and TZS 16,500 (US$ 8.25) per sample for courier services.

The analysis fee is computed at TZS 35,000 (US$ 17.5) for a consignment value up to TZS 20,000,000 (US$10,000). Above this value up to TZS 1 billion (US$ 500,000) the exporter is charged 0.2% of FOB value. Beyond TZS 1 billion (US$ 500,000), the fee is TZS 2,000,000 (US$ 1,000).

TAEC is headquartered in Arusha with a satellite office in Dar es Salaam. The agency has laboratories in both locations, namely Arusha and Dar es Salaam. The Arusha headquarters is furnished with the full range of analysis equipment while the Dar es Salaam office is currently upgrading its laboratory facilities to offer the same services as in Arusha.

TAEC conducts regular tests of products in the local market in order to ensure no radiation-contaminated products reach the local market. As a border agency with a mandate to check all imports and exports, TAEC is represented at all border gates. In 2016 it is also planned that officers will be deployed to the 5 border gates in Dar es Salaam (airport, port and dry ports). However, it is not possible to establish laboratory facilities at each border gate as the investment in equipment is high (approximately US$ 150,000). Nevertheless, samples may be sent via a courier service to any laboratory with the necessary testing capability. This may hinder exporters who are far away from Arusha and Dar es Salaam. Those from Arusha may have the service completed in a day, while those from Dar es Salaam and other places must wait up to four days. It is even more difficult for exporters from other regions who need to physically take their samples to Dar es Salaam before the samples are sent to Arusha through a courier service. It requires exporters to carry the sample to Arusha and thus bear extra costs of approximately TZS 200,000 (US$ 100).

### 3.6 Arrange transport (land)

This step involves the exporter and the transporter.
As soon as the exporter has obtained all required documents, a transporter to carry the shipment by road to Nairobi is identified. The exporter negotiates with the transporter the service terms, i.e. on when the transport is needed, transport price and payment terms. When agreement is reached, the exporter pays a partial payment in advance to the transporter. The exporter then hands over the following documents to the transporter:

- Land transport permit (original) with the levy receipt attached,
- Business licence (copy),
- TIN certificate (copy),
- Export permit (original),
- Sanitary certificate (original),
- Radiation certificate (original), and,
- Commercial invoice (original).

The transporter loads the cargo onto the truck and drives to the Namanga border.

This step takes three days. One day is for arranging the transport and two days actual transportation. The transport price varies depending on season, distance and transport route. For the transport from Dodoma to Nairobi, which is approximately 800 km, the price is TZS 2,500,000 (US$ 1,250) for a cargo of five tons.

In some cases the exporter does not hire transport services but sends the cargo to Namanga by bus. When this type of transportation is used, the final sale is made on the Tanzanian side of the border and this is a domestic trade instead of an export. In such a case, the seller is not responsible for managing the cross-border process including the customs process etc. The ship process would be concluded with the seller loading the cargo into a bus from Dodoma to Arusha and then from Arusha to Namanga.

### 3.7 Customs declaration

This step involves the exporter, Tanzania Revenue Authority (TRA), TFS, TAEC, the Tanzania Food and Drugs Authority (TFDA), and the Clearing and Forwarding Agent (CFA). Customs procedures and formalities must be completed by a CFA that holds a Customs broker license.

The step starts with the exporter (or representative) traveling together with the cargo to the border point. At the border point, the exporter appoints a CFA to handle the customs clearance process. The exporter hands over the documents in person to the CFA who then lodges them to TRA via the TANCIS (Tanzania Customs Integrated System). The CFA processes a Single Bill of Entry (SBE) by completing the TRA forms, attaching all required documents for approval and clearing the goods through customs/TRA. The following documents are required:

- Export permit (original),
- Sanitary certificate (original),
- Radiation Certificate (original), and,
- Commercial invoice (original).

The CFA requests a release order at the customs office. The TRA officer scrutinizes the documents and requests the CFA to arrange an inspection with all relevant agencies. The agencies include TRA, TFS, TAEC and TFDA to verify documents and cargo. The physical inspection is carried out at the border and there is no risk assessment or scanning conducted. Currently all inspections are supposed to be
carried out jointly. However, this often results in severe delays as many officers do not appear at the scheduled time. Interviews with stakeholders also revealed that the customs documents must be signed also by national security, Ministry of natural resources, and Ministry of livestock and fisheries even though those agencies do not play an active role in the honey export process. If the consignment and documents are accurate, the TRA officer seals the cargo, endorses it for clearance and issues a release order. If the consignment is not consistent with the documents, either consignment or documents must be corrected. The truck will be retained at the TRA yard and exporter informed to take necessary actions.

This step takes two hours and there are no costs incurred.

This process can be started also before the cargo arrives at the border. In such a case, the exporter provides copies or sends electronic documents via email to the CFA to initiate the process.

TANCIS, the electronic Customs system, is presently not operational at all border stations as it is still being rolled out. Nevertheless, the private sector reported that the system is often not accessible due to system downtimes, power cuts and failing internet connection. Also, the generators do not offer a reliable power source. Additionally, customs is planning to introduce e-payments in the i-tax and TANCIS system.

According to exporters, there can be severe delays in this process due to border congestion and insufficient coordination of the relevant agencies. In response to this, the Tanzanian government has established border agency committees at various borders such as in Kabanga. In addition, the government of Tanzania is also implementing one stop border posts at some land border crossings. These are two good examples of trade facilitation and shows that the Tanzanian government is undergoing serious effort to reduce trade costs.

### 3.8 Obtain Certificate of Origin

This step involves the exporter and the Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA).

To obtain a Certificate of Origin (CoO) form, the exporter must physically visit the TCCIA to pick up a blank certificate. The exporter completes the certificate and returns it to TCCIA, pays the fee and attaches the following documents:

- Export permit (original),
- Release order (original), and,
- Commercial invoice (original).

The TCCIA verifies the information provided. The two main verification documents are the release order (from TRA) as well as the Export Permit which certify that the products are from Tanzania.

If the information is not consistent, TCCIA returns the forms to the exporter to re-start the process. If the information is consistent, the TCCIA issues and signs the certificate. Then the exporter physically collects the certificate from the TCCIA.

This step takes one hour and costs TZS 30,000 (US$ 15) per consignment, which means that, each time an exporter exports a CoO has to be obtained.

The step is cumbersome as there are few staff (normally only one at Namanga) and the form is completed using typewriters. The office does not have a typewriter of its own and the exporter has to
look for that service elsewhere. In addition, typing errors may cause further delay. This step can only be completed at the border because the exporter needs to attach the release order to obtain the CoO.

It should also be noted that in Tanzania it is the TCCIA that is mainly responsible for issuing both the preferential and non-preferential CoO and there is only a “simplified Certificate of Origin” available from TRA for goods destined for the East African region and below the value of US$ 2,000. Tanzania is somewhat unusual for an East African country because in most other countries it is the respective Customs authority that issues preferential CoO whereas in Tanzania, the non-preferential ones are issued by the chamber of commerce.

The TCCIA issues two kinds of CoOs: preferential and non-preferential ones. It is up to the buyer and the importing country which ones are required. For example, in order to enjoy preferential duty rates and market access, usually a preferential Certificate of Origin is required. The non-preferential certificate only certifies the origin of a country. A buyer may ask for a non-preferential certificate. This can either be a stand-alone certificate or in addition to the preferential one. Further, there are different certificates for different markets/countries such as for the SADC region, EU, US or China.

3.9 Conclude border process

This step involves the exporter, transporter and TRA.

As soon as the shipment is cleared to cross the border, the transporter takes the shipment to the cross border gate. At the cross border gate, a final check of documents is conducted. If everything is in order, the consignment will be allowed to cross the border. If the documents are not in order, the TRA official issues a request for rectification and restricts border crossing until required action is taken. Once the goods are delivered at the agreed point, the exporter pays the transporter the outstanding transport fee.

This step takes on average 4 days with the minimum time being around 2 days with possible delays adding a further 2 days as well.

Exporters reported that there is severe border congestion which delays the document and cargo verification. This is especially true for non-containerized cargo (i.e. in the case of honey).

Summary of findings

The time required at each process and step is described in the following figure.
Figure 3: Time chart for the export of Honey from Dodoma Tanzania to Nairobi Kenya

Assumptions:
- The exporter has export-quality honey ready for export with no need for further processing
- Exporter starts obtaining export permit immediately after concluding the sales contract
- The importer pays in full, upfront
Recommendations

The following section provides process-specific recommendations to facilitate trade by simplifying processes and procedures, and strengthening the supply chain. This objective is to increase Tanzania's participation in the global honey market, improve business opportunities and employment in the honey sector, as well as help to reduce Tanzania's trade imbalance.

The recommendations respond directly to the specific business processes and where possible provide information on benefits or reductions in terms of the number of documents required, time (in days) and costs. It should be noted that not all recommendations have a direct impact on the aforementioned three indicators but rather reduces uncertainties, increases reliability or reduces risks within the supply chain, for example.

1. Facilitate trade by simplifying processes and procedures

<table>
<thead>
<tr>
<th>Process/Step</th>
<th>Recommendations</th>
<th>Benefits/reduction of Docs/Time/Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buy Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1) Conclude sales contract</td>
<td>Eliminate Sanitary Certificates for samples</td>
<td>4/3/20</td>
</tr>
<tr>
<td><strong>Pay Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1) Make payment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ship Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1) Obtain Sanitary Certificate</td>
<td>Provide incentives for government officers to use their private vehicles or other modes of transport</td>
<td>-/-/-</td>
</tr>
<tr>
<td>3.2) Obtain Export Permit</td>
<td>Eliminate Export Permit</td>
<td>4/3/30</td>
</tr>
<tr>
<td>3.3) Pay levy</td>
<td>Eliminate levy</td>
<td>1/1/167</td>
</tr>
<tr>
<td>3.4) Obtain Land Transport Permit</td>
<td>Eliminate Land Transport Permit</td>
<td>6/2 hours/3.75</td>
</tr>
<tr>
<td>3.6) Arrange transport (land)</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>3.7) Customs declaration</td>
<td>Roll-out of TANCIS to all borders</td>
<td>2</td>
</tr>
<tr>
<td>3.8) Obtain Certificate of Origin</td>
<td>Install computers/typewriters to complete CO forms in TCCIA</td>
<td>1</td>
</tr>
<tr>
<td>3.9) Conclude border process</td>
<td>Reconsider layout of borders and border agencies to reduce physical distance between agencies and avoid unnecessary visits to border agencies</td>
<td></td>
</tr>
</tbody>
</table>
Explanatory notes on the recommendations:

1.1 Remove the need for Sanitary Certificates for samples

The government of Tanzania requires Sanitary Certificates for all products, including for samples (i.e. to conclude the sales contract). In international trade, sanitary certificates for samples are unusual and prolong the process of concluding a sales contract, by adding an extra 4 documents, 3 days and US$ 20.

Since samples are small and not for consumption in the destination country, the need for Sanitary Certificates for exports should be eliminated (unless required by the importing country).

1.2 Provide incentives for officers to use their own vehicle

Currently, the charges of TZS 40,000 (US$ 20) for the physical inspection (for the Sanitary Certificate) also include the transport of the official(s) from their duty station to the inspection location. However, in practice, officials usually do not have any means of transport available and the exporter must provide the transport to and from the inspection site. At the moment, there is no incentive for officers to use their private vehicles to go to the inspection site. This represents an additional “hidden” cost in the process.

A potential solution could be if TFS inspectors could claim parts of the transport-fee paid to TFS if they use their own means of transportation (if TFS is not able to provide transport). Thus, officers would be more easily available while being also reimbursed for their own fuel/vehicle use.

1.3 Eliminate Export Permit

The objective of the Export Permit is for the government to record export trade, assess taxes and monitor food security. However, all three objectives could also be monitored using the data provided through the TANCIS system (or the manual TRA system at other border locations). For example, TRA keeps statistics of exports and monitors values (to assess duties and taxes) which could be used to maintain trade statistics, assess different kinds of taxes or records HS-codes (product codes) which could be used to monitor and manage food security. Eliminating the Export Permit would eliminate 4 documents/copies within the export process as well as up to US$ 30 in associated costs. However, it would have a limited impact on reducing the export time because the Export Permit process is carried out concurrently to the process of obtaining the sanitary certificate.

1.4 Eliminate levy and Land Transport Permit

Presently the LGA requires exporters to pay a levy in order to financially support the LGA. In addition, a Land Transport Permit must be obtained to transport honey domestically because honey, as a forest product, is subjected to exploitation control. Process 3.3 and 3.4 are intertwined because the Land Transport Permit is used to enforce and monitor the levy payment. This is enforced at various check points along the Dodoma - Namanga route (see above). Failing to show the Land Transport Permit and levy receipt may result in high penalties.

From a trade facilitation perspective the levy and Land Transport Permit should be eliminated. At the same time, the authors understand that the removal of the levy may be difficult as it is an important source of revenues for LGAs and it is beyond the scope of this study to discuss revenue sources and distribution of government revenues.

5 See also recommendation 3.1 Improve the current TANCIS infrastructure.
The impact of this measure is that the export process could be just over 24 hours quicker and would produce/require 7 documents less with process costs being reduced by US$ 170.75 (US$ 167 in levy payment and US$ 3.75 for the Land Transport Permit).

1.5 Eliminate radiation-free certificate

Currently all exporters and importers must obtain a radiation-free certificate from TAEC to ensure that the goods exported or imported are not contaminated (or below allowed levels) with radioactive radiation. The process takes between 1-4 days (depending on the location of the exporter and laboratory).

It is recommended that this process be eliminated in the export process unless it is required by the importing country. For imports, it should be restricted to high-risk areas of cargo origin (i.e. Japan, Ukraine, and others). For exports, the risk is extremely small because there has been no known nuclear incident at this point in Tanzania or in its vicinity (and imported products are subject to a risk assessment). The impact of this measure would be to reduce the time taken in the export process by 4 days, 3 documents and costs of US$ 39.14. In addition, it has been reported by many exporters that this process is associated with high uncertainty as delays occasionally occur.

1.6 Improve the current border process

Currently, there is no risk assessment performed at the Tanzanian/Kenyan border. This means that 100% of cargo is physically inspected. The inspection itself is carried out simultaneously by all border agencies. However, long delays can still occur in some cases because:

- Communication between the different border agencies is perceived as not working well;
- It is difficult to coordinate the inspectors from all agencies at the same time; and
- Due to the lack of equipment, all inspections are carried out with the help of manual labor.

In order to address the above issues, it is recommended to:

- Apply a risk management system by all border agencies (risk management is already applied at the larger border stations and integrated in the TANCIS system). The risk management system will help using each agency’s resources in a more efficient way (and avoid 100% of cargo being inspected).
- Introduce service-level agreements by all inspection agencies. The service level agreements should provide a “deadline” by when inspections must be finished once declared by exporters (inspection windows). This would limit the maximum time spent by an exporter on completing this process step. The consignment would be considered as “cleared” if the inspection is not carried out within this window. In cases where an agency would need more time, they must inform the exporter in advance. A service level agreement will also reinforce the introduction of risk management systems in the respective border agencies because of the pressure to clear all cargo within a given time.
- Establish a border committee, similar to the one at the Kabanga border between Tanzania and Rwanda. At the Kabanga border the committee comprises of representatives of all border agencies (TRA, Immigration, Police, TCCIA, representative from the general public, and a women leader) and meets regularly to resolve any issues arising at the border. A similar structure could be put in place at the Tanzanian/Kenyan border.

---

6 The border committee also includes Rwandan officials to resolve bilateral issues.
structure could be applied at the Tanzanian/Kenyan border, where such a border committee could help improve the communication between border agencies, coordinate cargo inspections and resolve other issues as they arise. Inspections could be coordinated by introducing regular meetings where agencies map out a (daily) schedule of inspections with fixed inspection windows (which then will fit with the above proposed service level agreements).

Introducing risk management systems to the various agencies can be a challenging task, not only does it require putting the different systems in place with a capacity building component but it also requires agencies to change their mind-set from a "control"-driven to a "trade-facilitation"-driven mentality.

1.7 **Enhance trade information by providing trade information and forms online**

Making government services, forms and related trade information available online and potentially even transmit certificates via secure connections will minimize exporters’ time spent away from work. This not only helps increasing transparency and information sharing (i.e. communicating more effectively updates to the trading community or informing about changes), it also helps introducing new online services. At the same time, this could be the first stepping stone for introducing e-services. Electronic systems may also contribute to reducing administrative costs.

In the case TCCIA, there are a number of improvements that could be made:

1. The first option is to enable all forms as well as the CoO to be transmitted online. This is also the most advanced option and would have the largest impact for exporters.

2. The second option could be to provide the template of the different CoOs online. As such, exporters could purchase the forms in advance and bring them already completed to the office for verification and signature/stamps. This would reduce the time exporters spend away from the office and allow them to complete the forms on their own terms. In addition TCCIA could provide public work stations on which exporters could complete their forms and print on the spot. One significant advantage of providing the template online would be that regular exporters would not need to complete every time fields such as exporter name, address, etc. but use the same template for every shipment. In addition, typing errors can easily be corrected and information can be changed in a timely manner.

3. The third option, which would be the cheapest but least time saving one, could be to provide typewriters in the facilities of TCCIA where exporters could complete their CoO. This option is least preferred because the time saved is very little and there would still be a high possibility of typing errors.

2. **Enhance product quality and supply chains**

2.1 **Establish supply chain infrastructure to enhance product quality**

Most honey producing areas are using poor infrastructure that affects the quality of honey. For example, most producers store their honey in their homes where hygiene for food safety and quality is not guaranteed. In addition, honey is currently exposed to outside temperature which may increase the HMF value and reduce the quality. Collectors and domestic traders then collect the honey from individual homes in small amounts which increases the transaction costs.
The establishment of collection centres in major honey producing areas may help to reduce collection costs for domestic buyers/traders as well as improve quality of the honey as it must be stored in a temperature-controlled environment. Such an investment is too high for an individual producer but could be realistically considered if farmers collaborate. It would not only reduce the logistics costs within the supply chain but also increase the quality of the products. This in turn helps to access more sophisticated markets where advanced quality testing is a key criteria for payment.

2.2 **Encourage value addition**

Most of Tanzania’s exported honey to Kenya has not been processed and is sold in bulk. It is usually Kenyan traders that do further processing, packaging etc. and are taking a large share of the profit. However, this activity does not require many skills and could easily be carried out in Tanzania by local firms. TSIs should therefore encourage value addition to honey. To take on such business opportunities some training may be required on marketing of products, processing skills, etc. In fact, the above-proposed collection centre and temperature-controlled storage area could also act as a point where value-added activities (packaging, blending, processing, producing of honey by-products etc.) are carried out or where training to farmers and beekeepers could be provided.

2.3 **Encourage the formation of associations**

In honey producing areas beekeepers are not organized into associations and, if they are, then these associations are weak. Organizing beekeepers into associations could help realize some of the goals mentioned above (under recommendation 2.1 and 2.2). The associations should be open for members from the general agricultural sectors – not necessarily only honey producers – because many of the benefits could be applicable for a wider range of agriculture industries. For example, the temperature controlled facilities could be used by a wide array of producers to improve quality and increasing the number of potential users will reduce the costs to the individual. It will also help return on the investment of advanced facilities if the facilities are utilized throughout most of the year.

3. **General Recommendations**

3.1 **Improve the current TANCIS infrastructure**

During stakeholder consultations it became apparent that many users of the TANCIS experience frequent inaccessibility of the system. This may be attributed to downtime of the system and is exacerbated by power cuts and internet downtime. In such cases, no documents can be submitted or declarations uploaded. At many border stations, there are back-up generators, but this still causes many delays and introduces uncertainty in the supply chain. At the same time, TANCIS is not currently operational at all border stations and instead trade is carried out manually.

It is recommended that the network operability as well as the supporting power infrastructure is strengthened to ensure that critical systems such as TANCIS are online and available 24/7. In addition, the roll-out of the TANCIS system to all border stations should be expedited (to replace manual customs process systems).

3.2 **Introducing a trade portal**

Trade facilitation happens when information is available to all stakeholders involved (Ksoll 2012). Making such information available e.g. via a trade portal, can significantly enhance transparency of processes and procedures as well as reduce the “search-costs” for the private sector. A clear advantage of such a trade portal is its versatility. For example, the portal could be used to:
(1) Timely disseminate laws, rules, and regulations.

(2) Inform about processes and procedures including the costs and time required to complete them and thereby improve transparency and predictability for the private sector.

(3) Enhance communication between the public and private sector – the Government could make registration to portal mandatory before the above information can be accessed (even with just minimal information such as name, company name, email). With that, the Government could build an active trade community and better target the dissemination of trade information.

(4) Eventually, issue licenses and permits.

Similar trade portals have already been established in Asia and Africa such as in Lao PDR, Botswana and other countries to great effect. The key challenge of such a portal is to maintain the information up to date because of the large number of agencies and stakeholders involved. Additionally, many pieces of legislation are relevant for trade although their main objectives are not and agencies do “forget” to publish such information. Unfortunately, such a portal is only useful if its information is always up to date. In Lao PDR, this challenge was met by making the publication of any legislation in the Lao trade portal, in addition to the official gazette, mandatory. If legislation is not published in both the gazette and the portal then it does not become law. Thus, all agencies are required to maintain an updated account while the private sector has access to updated and useful information.

Although it is understood that a trade portal this accurate would require a serious and continual effort by all stakeholders, experience from other countries proves that it is feasible and greatly benefits the private sector in the long-term. The expected impact of establishing a trade portal in Tanzania is difficult to anticipate but the experience from other countries has shown that the private sector has benefitted from much reduced “administrative costs” due to a more transparent trade environment, simpler access to and easier compliance with legislation.

### 3.3 Establish one-stop shops

Currently, exporters cover large distances between various government offices and logistics service providers to complete the different export steps as exemplified in the use case diagram in Figure 1. Government offices and logistics service providers are located across several locations. Getting from one office to the next is often challenging with the increased traffic congestion in major urban areas in Tanzania. The schedule must be carefully planned in order to manage the opening hours of the different offices. Overtime is not possible in most cases and forms and other materials are not available online or require physical visits.

Physical one-stop shops (OSS) could be a solution to minimizing the time wasted in traffic and also reducing the distances travelled by exporters. Such OSS could be located in major industrial areas or key logistics services knots such as dry ports, the airport or in the town centre. Physical OSS can be implemented quickly and at relatively low cost. For example, in Burkina Faso the costs totalled only US$ 200,000 while in Azerbaijan it amounted to US$ 5 million. The reform in Azerbaijan took less than a year, setting up the OSS less than 6 months and it continues saving businesses millions of US$ annually (World Bank and IFC, 2009).

The OSS should include all relevant stakeholders in order to fully reap the benefits. Although not conclusive, the use case diagram (Figure 1) provides an initial list of stakeholders that could be included. The impact of a functioning OSS is that it essentially eliminates most travel. Office hours can be streamlined to ensure availability of all services during regular business hours. In addition, an overtime policy should be considered because global trading operations do not necessarily stop when businesses in Tanzania close. Other countries have benefited from offering this service for an additional...
"overtime fee" if requested a certain time in advance. For the implementation of such an OSS, the Ministry of Industry and Trade (possibly together with the TCCIA) should take the lead. However, other agencies, as appropriate, could take this role. In addition, the input and cooperation of all stakeholders would be required to fully take advantage of establishing an OSS.

### 3.4 Delegation of signature authority

At times exporters experience delays at government agencies because of absence of relevant officers to sign documents needed in the export process. Delays could be minimized if agencies establish clear hierarchies for signing relevant documents. If the signing officer is away on other duties, another officer should be designated to sign on their behalf. While this sounds simple it also requires investments in human capacity building to enable those officers to make rule-based decisions on what documents may or may not be signed (and what the conditions for signing are).

### 4. Prioritization and options for implementation

The overarching objective of any trade facilitation program should be the reduction of cost and time to trade and increase the predictability of trade processes for the business community. In particular, time to market is becoming increasingly important for SMEs. Within the current export process, this is extremely challenging because it takes already 15 days to complete the ship process, which is relatively long considering that the market is a 2-3 day drive away.

Implementing trade facilitation reforms can be challenging because of the large number of stakeholders involved and the different objectives of each stakeholder. High ownership among all stakeholders and support from the highest political levels is often identified as the key to making a national trade facilitation reform project a success.

The following section provides a possible road map for the implementation of the above recommendations. It should be noted that these steps and necessary actions are not complete but represent an integral step towards a national, electronic single window. The approach consists of four distinct steps briefly described below:

#### 4.1 Basic simplification of processes and procedures

The objective of the first step is to eliminate redundant procedures and simplify trade processes. The analysis of every process in this paper offers an ideal platform for discussion among policy makers, government agencies, and the private sector to identify and eliminate unnecessary steps. In addition, preliminary measures to introduce basic automation could help reduce the number of office visits required (i.e. via the submission of electronic documents, via making online or mobile payments), the number of days and/or costs it takes for processes to be completed.

As part of this step, the following recommendations should be implemented:

- Remove the need for Sanitary Certificates for samples,
- Eliminate Export Permit,
- Eliminate levy and Land Transport Permit,
- Eliminate radiation-free certificate,
- Provide incentives for officers to use their own vehicle, and,
- Delegation of signature authority.
These efforts do not require much technical expertise but rather the will of each organization to adapt and better serve its “customers”. Most measures can be obtained by reviewing the processes and procedures within only one agency. The above recommendations proposed under step 1 aim to reap the benefits of “low-hanging fruits” and thereby create a momentum for more advanced trade facilitation reforms (see step 2).

### 4.2 Improve border process by applying a risk management system and better border agency cooperation

Currently, long delays may occur at the Tanzanian/Kenyan border because no risk assessment is performed and border agency cooperation is poor.

Modern risk management assesses risk based on knowledge of the individual trader as well as the individual risk of the cargo. High risk or unknown risk cargo (red channel) is still 100% physically inspected. For medium risk and low risk cargo inspection rates are much lower. Also, depending on the risk level, different levels of Government officers should have the approving authority. For example, low-risk cargo should be approved by technical officers, medium risk by e.g. a Department Director, and high-risk goods should involve a high-level Government staff. In order to facilitate trade in the long-run, a well-functioning risk management system as well as seamless cooperation among border agencies is indispensable. Such a system would require:

- An advanced IT system;
- A functioning border agency cooperation mechanism; and,
- Capacity building to prepare staff involved in risk management at all Government levels as well as the private sector.

The needs of the private sector should not be underestimated. Private firms must be made aware of new risk management system as well as training provided so firms know how to comply with existing regulations.

### 4.3 Advanced delivery of government services

The third step aims to improve trade processes by enhancing existing systems or the introduction of new ones. System integration (i.e. combining the different IT systems of border agencies including risk management by all government agencies) should be considered. Those systems will enable better delivery of government services, increasing transparency in processes as well as making trade information more accessible. In addition, the measures proposed below have a significant human capacity building component which will require inter-agency cooperation across different levels. The following recommendations could be attempted in the third step:

- Introducing a trade portal;
- Improve the current TANCIS infrastructure; and,
- Establish one-stop shops.

### 4.4 Recommendations to strengthen the supply chain and product quality

Strengthening the honey supply chain should complement trade facilitation efforts. The recommendations below are not directly related to trade facilitation but will have a significant impact on strengthening export competitiveness by i.e. reducing the costs of transport and logistics:
HONEY EXPORTS FROM TANZANIA

- Establish supply chain infrastructure to enhance product quality
- Encourage value addition
- Encourage the formation of associations

These recommendations mostly require investments in infrastructure and/or human capacity and are therefore longer-term endeavours. Since many have a longer time-horizon to take effect, implementation should complement trade facilitation efforts by the government and be rolled-out simultaneously.

The time graph below provides an overview how the implementation of the above measures may affect the time it takes to complete the export process. It should be noted that many of the recommendations made throughout the report will have an impact on the number of documents, the time or cost it takes to export honey from Tanzania by land. However, in many cases it is difficult to exactly quantify the impact (which may be underestimated in the time graph).

Implementing the proposed recommendations would reduce the time taken to export honey (by land) of a minimum of 10 days, 25 documents (being prepared at some stage in the current export process; some documents are duplicate or only copies) and US$ 260. In addition, it will reduce the number of stakeholders involved in the export process by 2.
Appendices

Appendix I: Honey sector overview

Tanzania has 38.8 million hectares of forests and woodlands of which 13 million hectares are dedicated forest reserves. More than 80,000 hectares of forest reserves consist of forest plantations that are also suitable for beekeeping. Considerable potential for beekeeping is also found in agricultural land where substantial bee products can be harvested from agricultural crops e.g. sunflower, green beans, coffee, coconut, banana and sisal. These potential beekeeping areas are estimated to host 9.2 million colonies of honey bees.

According to the FAO, Tanzania is the second largest honey producer in Africa after Ethiopia and biggest African supplier to the EU. Tanzania produces roughly 34,000 tons per year and ranks 14th globally among producing countries (FAO, 2016). More conservative sources estimate Tanzania’s production to be around 10,000 tons per year. For example, the Tanzania honey sector synthesis report and development road map (Sambua, 2014) indicates that, “the production is far below the potential that exists in Tanzania. More than 20 years ago it was estimated that Tanzania had a potential of producing 138,000 tons of honey and nearly 10,000 tons of beeswax. Since then many forests have been cleared for farming, fuel and by bush fires. This partly explains why the domestic prices of honey are very high.

Table 2: Honey production volumes in tons

<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rukwa</td>
<td>318.81</td>
<td>421.60</td>
<td>326.20</td>
<td>394.46</td>
<td>420.00</td>
<td>1,881.08</td>
</tr>
<tr>
<td>Tabora</td>
<td>2,262.75</td>
<td>1,896.60</td>
<td>9,602.70</td>
<td>1,330.91</td>
<td>1,217.69</td>
<td>16,310.65</td>
</tr>
<tr>
<td>Mbeya</td>
<td>53.45</td>
<td>84.27</td>
<td>116.41</td>
<td>122.32</td>
<td>113.99</td>
<td>490.43</td>
</tr>
<tr>
<td>Tanga</td>
<td>62.37</td>
<td>76.57</td>
<td>23.39</td>
<td>23.42</td>
<td>32.44</td>
<td>218.19</td>
</tr>
<tr>
<td>Manyara</td>
<td>315.60</td>
<td>176.06</td>
<td>154.94</td>
<td>159.94</td>
<td>141.17</td>
<td>947.70</td>
</tr>
<tr>
<td>DSM</td>
<td>4.54</td>
<td>4.95</td>
<td>4.07</td>
<td>2.67</td>
<td>2.31</td>
<td>18.54</td>
</tr>
<tr>
<td>Iringa</td>
<td>35.14</td>
<td>50.36</td>
<td>70.70</td>
<td>48.17</td>
<td>44.01</td>
<td>248.37</td>
</tr>
<tr>
<td>Singida</td>
<td>66.77</td>
<td>161.39</td>
<td>170.02</td>
<td>166.81</td>
<td>126.59</td>
<td>691.58</td>
</tr>
<tr>
<td>Kagera</td>
<td>110.18</td>
<td>146.50</td>
<td>134.79</td>
<td>402.77</td>
<td>130.61</td>
<td>924.85</td>
</tr>
<tr>
<td>Kilimanjaro</td>
<td>184.31</td>
<td>186.59</td>
<td>179.50</td>
<td>184.26</td>
<td>182.84</td>
<td>917.50</td>
</tr>
<tr>
<td>Arusha</td>
<td>37.63</td>
<td>44.59</td>
<td>60.90</td>
<td>43.61</td>
<td>55.86</td>
<td>242.59</td>
</tr>
<tr>
<td>Pwani</td>
<td>70.05</td>
<td>62.13</td>
<td>58.30</td>
<td>66.83</td>
<td>88.69</td>
<td>346.00</td>
</tr>
<tr>
<td>Lindi</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>16.45</td>
<td>16.45</td>
</tr>
<tr>
<td>Morogoro</td>
<td>5.19</td>
<td>6.12</td>
<td>10.29</td>
<td>11.68</td>
<td>12.91</td>
<td>46.18</td>
</tr>
<tr>
<td>Dodoma</td>
<td>2,292.98</td>
<td>2,906.30</td>
<td>3,233.99</td>
<td>4,158.27</td>
<td>4,688.38</td>
<td>17,279.93</td>
</tr>
<tr>
<td>Mtwarra</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Mara</td>
<td>1.59</td>
<td>2.18</td>
<td>2.83</td>
<td>4.27</td>
<td>3.62</td>
<td>14.49</td>
</tr>
<tr>
<td>Kigoma</td>
<td>111.42</td>
<td>154.34</td>
<td>185.52</td>
<td>268.25</td>
<td>345.65</td>
<td>1,065.17</td>
</tr>
<tr>
<td>Shinyanga</td>
<td>583.60</td>
<td>525.16</td>
<td>725.74</td>
<td>756.66</td>
<td>1,073.47</td>
<td>3,664.63</td>
</tr>
<tr>
<td>Mwanza</td>
<td>10.19</td>
<td>13.29</td>
<td>20.19</td>
<td>28.75</td>
<td>23.25</td>
<td>95.67</td>
</tr>
<tr>
<td>Ruvuma</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>33.83</td>
<td>33.83</td>
</tr>
<tr>
<td><strong>Total Qnt (t)</strong></td>
<td><strong>6,526.56</strong></td>
<td><strong>6,919.00</strong></td>
<td><strong>15,080.46</strong></td>
<td><strong>8,174.05</strong></td>
<td><strong>8,753.77</strong></td>
<td><strong>45,453.83</strong></td>
</tr>
</tbody>
</table>

*Source:* TanTrade, 2012
Traditional beekeeping has dominated for long all production of honey and beeswax, with 95% of beekeepers using log hives. However, commercial and top bar hives have increased substantially from 5% in 1998 to 20% in 2011 (MNRT 2012).

The honey supply chain is relatively fragmented in Tanzania. For example, the Honey and Beeswax Value Chain Analysis in Tanzania (MMA 2007) found that the processing, packaging and handling of honey and beeswax in Tanzania is done by different actors at varying scale. Processing and handling is done mainly by beekeepers and to a lesser extent by traders and large companies. There are no quality control regulations enforced to monitor processing of honey. Those designated for export are packed in drums of 210 litres capacity and 20 litres (30kg) buckets; however, honey that is sold locally is packed in 2.5 litre containers, 1 litre containers, 500ml and 350ml bottles. At village level, beekeepers who process honey pack their product in 20 litre buckets ready for transporting or for buyers/traders to collect.

Local traders fulfil the important collection and consolidation function and buy honey and/or beeswax in bulk from various beekeepers before selling to bigger traders and/or large companies. Many large companies also established collection points where beekeepers can drop off their products directly. Several Trade Support Institutions (TSIs) have helped farmers to organize into a cooperative to enable them to improve their bargaining power and business processes. The cooperative serves as a primary market for all honey produced by its members while paying fair and competitive prices.

More than half of the produced honey is consumed locally. This honey is sold through local supermarkets, shops and specialty honey shops. Medium and large enterprises supply to local supermarkets and shops. The concept of putting up road-side umbrellas for commuters is also applied along the highways passing through production areas like Tabora, Singida and Dodoma and to a lesser extent in Dar es Salaam. Export destinations for Tanzanian honey are EU countries mainly Germany, Belgium and The Netherlands, Oman, Iran, UAE, Kenya, Rwanda and Uganda (MNRT, 2014).

Table 3: Honey exports 2011 – 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Tones</th>
<th>Value in US$</th>
<th>Value in TZS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 - 2012</td>
<td>500.00</td>
<td>1,792,360</td>
<td>2,867,770,086</td>
</tr>
<tr>
<td>2012 -2013</td>
<td>82.69</td>
<td>51,230</td>
<td>81,968,000</td>
</tr>
<tr>
<td>2013 -2014</td>
<td>80.15</td>
<td>108,630</td>
<td>173,808,000</td>
</tr>
</tbody>
</table>

Source: MNRT 2014

At the level of middlmen traders, exporters and parkers, the honey is received already extracted. Some traders undertake further processing. If honey is processed at this level it is either strained or simply left to settle for some days. Plastic buckets or large plastic drums are used for settling.

Transport mode of the exported honey depends on destination and quantity exported. Honey exported to neighbouring countries of Rwanda, Uganda and Kenya is carried in jerry cans or plastic pails and transported by road in trucks or buses. Larger export shipments are packed into 210 kg lacquered metal drums or 20 litre pails and carried by ship or by air. Small consignments for Arab countries are carried by air in 20 litre containers.

Producers as well as buyers both suffer to some extent with inconsistent market information. For example in “The African Honey Trade: Unlocking the Potential by Bees for Development” found that:

“Honey packers based in Africa’s cities face erratic supplies and an inability to meet local and export demand, whilst beekeepers say they do not increase production because they have no market”

This observation can be confirmed by the study team based on interviews with a wide variety of stakeholders. It is a result of poor communication among the supply chain actors (facilitated by the large fragmentation of the supply chain).
There are a number of challenges faced in the honey sector in Tanzania: Honey is produced at the household level by beekeepers, indicating that production volumes by single producers are relatively small on average. There is little integration of supply chain actors resulting in poor communication and information exchange. The production areas are characterized by poor roads, remote locations, and lack of knowledge of the final market. Due to these reasons, the price of honey is either overcharged or undervalued.

Different promotional channels have helped to distribute better information to producers in terms of market segments, market prices and market requirement. They have helped also to connect buyers and producers of bee products. For example, trade exhibitions organized by Honey Show Limited in 2006 and 2008, the Tanzania Honey Council in 2009, the annual Dar es Salaam Trade Fair (Sabasaba), the Nane-nane Agricultural Exhibition, SIDO’s product exhibitions and many other sectoral product exhibitions have helped increase information flows to producers as well as traders. Various other players are also helping beekeepers with modern technology to access local as well as international markets including knowledge of standards requirements. For example, in April 2014 the European Commission commissioned the International Trade Centre to undertake training of producers of various products including honey on internet application in finding international markets for their products.
Appendix II: “As-is” Business processing mapping

Process 1.1 Conclude Sales Contract.

<table>
<thead>
<tr>
<th>Name of business process</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Conclude Sales Contract</td>
<td>10 days</td>
<td>TSH 60,000 (USD 30)</td>
</tr>
</tbody>
</table>

Related laws, rules, and regulations: Forest act 2002

Process participants:
- Exporter
- Tanzania Forest Service (TFS)
- Courier
- Importer

Input and criteria to enter/begin the business process:
- Exporter has a list of potential buyers.
- Importer has a list of potential exporters
### Activities and associated documentary requirements

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>The importer contacts and negotiates with the exporter.</td>
</tr>
<tr>
<td>1.1.2</td>
<td>The importer requests a product sample.</td>
</tr>
<tr>
<td>1.1.3</td>
<td>The exporter prepares a product sample.</td>
</tr>
<tr>
<td>1.1.4</td>
<td>The exporter applies for a sanitary check from the Tanzania forest service and pays fee in cash.</td>
</tr>
<tr>
<td>1.1.5</td>
<td>The Tanzania forest service conducts test and issue Sanitary Certificate (for further details see process 3.1).</td>
</tr>
<tr>
<td>1.1.6</td>
<td>The exporter obtains Sanitary Certificate.</td>
</tr>
<tr>
<td>1.1.7</td>
<td>The exporter reviews the sanitary results.</td>
</tr>
<tr>
<td>1.1.8</td>
<td>The exporter pays for courier fees and sends the sample via courier to the importer.</td>
</tr>
<tr>
<td>1.1.9</td>
<td>The courier delivers the sample to the importer.</td>
</tr>
<tr>
<td>1.1.10</td>
<td>The importer analyses the sample.</td>
</tr>
<tr>
<td>1.1.11</td>
<td>The exporter prepares a quotation and sales terms and sends it to the importer.</td>
</tr>
<tr>
<td>1.1.12</td>
<td>The importer reviews the quotation and sales terms.</td>
</tr>
<tr>
<td>1.1.13</td>
<td>The importer sends a purchase order.</td>
</tr>
<tr>
<td>1.1.14</td>
<td>The exporter acknowledges the receipt of the purchase order and confirms the order by sending the importer a commercial invoice.</td>
</tr>
<tr>
<td>1.1.15</td>
<td>The importer receives the commercial invoice.</td>
</tr>
</tbody>
</table>

### Sanitary test fees

- TZS 40,000 (US$ 10)

### Couriers services

- TSH 20,000 (USD 10)

### Output criteria to exit the business process

- Sales contract
- Purchase order
- Commercial invoice

### Average time required to complete this business process

- 10 days
HONEY EXPORTS FROM TANZANIA

Process 2.1 Make payment

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>2.1 Make payment</th>
<th>2. Pay</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related laws, rules, and regulations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step participants</td>
<td></td>
<td></td>
<td>Exporter (or representative)</td>
<td>Exporter’s bank</td>
</tr>
<tr>
<td>Input and criteria to enter/begin the business step</td>
<td></td>
<td></td>
<td>Completed sales agreement</td>
<td></td>
</tr>
<tr>
<td>Activities and associated documentary requirements</td>
<td>2.1.1 The exporter requests the importer to make payment.</td>
<td>2.1.2 The importer receives the payment request.</td>
<td>2.1.3 -The importer makes the payment. -The importer notifies the exporter about the payment made.</td>
<td>2.1.4 -The importer’s bank executes the payment to the exporter’s bank - The exporter acknowledges the payment notification.</td>
</tr>
</tbody>
</table>
- The exporter applies to withdraw the funds.  
2.1.6 The exporter’s bank issues the payment.  
2.1.7 The exporter receives the payment.

<table>
<thead>
<tr>
<th>Output criteria to exit the business step</th>
<th>Exporter received payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time required to complete this business step</td>
<td>4 days</td>
</tr>
</tbody>
</table>
Process 3.1 Obtain sanitary certificate

### Table 3.1 Obtain Sanitary Certificate

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>3.1 Obtain Sanitary Certificate</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Obtain Sanitary Certificate</td>
<td>3 days</td>
<td>TZS 40,000 (US$ 20)</td>
<td></td>
</tr>
</tbody>
</table>

**Related laws, rules, and regulations**
- Forest law of 2002 and its regulations
- Beekeeping law No. 15 of 2002 and its regulations of 2005
- Guidelines for quality assurance of bee products (MNRT).

**Step participants**
- Exporter
- Tanzania Forest Services (TFS)

**Input and criteria to enter/begin the business step**
- Business license
- TIN certificate
### Activities and associated documentary requirements

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1</td>
<td>The exporter requests a Sanitary Certificate attaching copies of TIN number and business license.</td>
</tr>
<tr>
<td>3.1.2</td>
<td>The Tanzania forest services agency receives the request.</td>
</tr>
<tr>
<td>3.1.3</td>
<td>The Tanzania forest services agency issues a payment order.</td>
</tr>
<tr>
<td>3.1.4</td>
<td>The exporter pays in cash.</td>
</tr>
<tr>
<td>3.1.5</td>
<td>The Tanzania forest services agency receives payment and tests the sample.</td>
</tr>
<tr>
<td>3.1.6</td>
<td>If the test results are not acceptable, the Tanzania forest services agency denies issuance of a Sanitary Certificate and the step is terminated.</td>
</tr>
<tr>
<td>3.1.7</td>
<td>If the test results are acceptable, then the Tanzania forest services agency issues a Sanitary Certificate.</td>
</tr>
<tr>
<td>3.1.7</td>
<td>The exporter collects the Sanitary Certificate.</td>
</tr>
</tbody>
</table>

### Output criteria to exit the business step
- Sanitary certificate obtained

### Average time required to complete this business step
- 3 days

### Costs
- TZS 40,000 (US$ 20) for Inspection
### Process 3.2 Obtain export permit

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>3.2 Obtain Export Permit</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
</table>
| Related laws, rules, and regulations | - Forest law of 2002 and its regulations  
- Beekeeping law No. 15 of 2002 and its regulations of 2005  
- Guidelines for quality assurance of bee products (MNRT) | 3 days | TZS. 60,000 (US$ 30) |
| Step participants | - Exporter  
- Tanzania Forest Services (TFS) | | |
| Input and criteria to enter/begin the business step | - The exporter has business license  
- TIN Number | | |
| Activities and associated documentary requirements | 3.2.1 The exporter requests an Export Permit attaching copies of TIN number and business license.  
3.2.2 The Tanzania forest services agency receives the request.  
3.2.3 The Tanzania forest services issues a payment order.  
3.2.4 The exporter pays in cash.  
3.2.5 The Tanzania forest services receives the payment and conducts physical check and tests honey | | Export permit TZS. 60,000 (US$ 30) |
If the test results are not acceptable, Tanzania forest services agency does not issue the permit and the process is terminated.
If test results are acceptable, then

3.2.6 The Tanzania forest services issues the Export Permit.
3.2.7 The exporter collects the Export Permit.

<table>
<thead>
<tr>
<th>Output criteria to exit the business step</th>
<th>Export permit is obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time required to complete this business step</td>
<td>3 days</td>
</tr>
</tbody>
</table>

HONEY EXPORTS FROM TANZANIA
Process 3.3 Pay levy

<table>
<thead>
<tr>
<th>Name of business process</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 Pay levy</td>
<td>1 day</td>
<td>TSH 334,000 (US$ 167)</td>
</tr>
</tbody>
</table>

Related laws, rules, and regulations
Local Government Act

Process participants
- Exporter
- Local Government Authority

Input and criteria to enter/begin the business process
Collected cargo

Activities and associated documentary requirements
- 3.3.1 The exporter collects honey.
- 3.3.2 The exporter reports number of buckets purchased.
- 3.3.3 The local government authority verifies buckets purchased.
- 3.3.4 The local government authority computes levy.
- 3.3.5 The local government authority requests for payment.
- 3.3.6 The exporter makes cash payment.
- 3.3.7 The local government authority receives levy fee.
- 3.3.8 The exporter receives payment receipt

Output criteria to exit the business process
Levy payment receipt.

Average time required to complete this business process
1 day
Process 3.4 Obtain land transport permit

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>3.4 Obtain Land Transport Permit</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related laws, rules, and regulations</td>
<td></td>
<td>2 hours</td>
<td>Permit fees TZS 7,500 (US$ 3.75)</td>
</tr>
</tbody>
</table>
| Step participants | | | Exporter  
Tanzania Forest Service (TFS) |
| Input and criteria to enter/begin the business step | | | Business license  
TIN certificate |
| Activities and associated documentary requirements | | | 3.4.1 The exporter requests for a Land Transport Permit and submits all necessary documents.  
3.4.2 The Tanzania forest services receive the request.  
3.4.3 The Tanzania forest services issue a payment order.  
3.4.4 The exporter pays in cash.  
3.4.5 The Tanzania forest services receive the payment and Permit fees |

3.4.1 Request transport permit

- Application form
- TIN Number (copy)
- Business License (copy)
- Export Permit (copy)
- Pay payment receipt (copy)

3.4.2 Receive request

3.4.3 Issue payment order

3.4.4 Make payment

3.4.5 Verify cargo against the documents
- Not consistent
- Consistent

3.4.6 Issue land transport permit

3.4.7 Collect transport permit
verifies the cargo against the documents provided.
- If the documents are not consistent, the Tanzania forest
  services denies issuing the permit and the exporter has to
  start afresh
- If the documents are consistent, then
  
3.4.6 The Tanzania forest services issues the Land
Transport Permit.
3.4.7 The exporter collects the Land Transport Permit.

<table>
<thead>
<tr>
<th>Output criteria to exit the business step</th>
<th>Land transport permit obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time required to complete this business step</td>
<td>2 hours</td>
</tr>
</tbody>
</table>

TZS 7,500 (US$ 3.75)
Process 3.5 Obtain radiation certificate

<table>
<thead>
<tr>
<th>Name of business process</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 days</td>
<td>TZS 78,278 (US$ 39.14)</td>
</tr>
</tbody>
</table>

**Related laws, rules, and regulations**
- Atomic energy Act no. 7, 2003, Control of radioactivity contaminated foodstuff regulation 1998

**Process participants**
- Exporter
- Tanzania Atomic Energy Commission (TAEC)

**Input and criteria to enter/begin the business process**
- Commercial invoice
- Product sample
## Activities and associated documentary requirements

3.5.1 The exporter requests a Radiation Certificate, attaching a copy of commercial invoice, a dully filled “Food Sample Record form and the sample.

3.5.2 The TAEC receives the request.

3.5.3 The TAEC issues a payment order.

3.5.4 The exporter pays through bank.

3.5.5 The bank receives payment

3.5.6 The bank releases payment receipt.

3.5.7 The exporter takes the payment receipt to TAEC

3.5.8 The TAEC receives the payment and sends sample via courier.

3.5.9 The courier takes the sample to Arusha office

3.5.10 The TAEC Arusha office conducts radioactivity analysis.

If the analysis results are not acceptable, the TAEC does not issue the certificate and the process is terminated.

If analysis results are acceptable, then

3.5.11 The TAEC issues the Radiation certificate.

3.5.12 The TAEC Dar es Salaam office receive the certificate and inform the exporter

3.5.13 The exporter collects the Radiation Certificate.

<table>
<thead>
<tr>
<th>Output criteria to exit the business process</th>
<th>Radiation certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time required to complete this business process</td>
<td>4 days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courier services</th>
<th>TZS 16,500 (US$ 8.25)</th>
</tr>
</thead>
</table>

TZS 61,778 (US$ 30.14)
HONEY EXPORTS FROM TANZANIA

Process 3.6 Arrange transport (land)

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 Arrange transport (land)</td>
<td>3 days</td>
<td></td>
</tr>
</tbody>
</table>

Related laws, rules, and regulations
Beekeeping law No 15 of 2002 and beekeeping regulations of 2005

Step participants
• Exporter (or representative)
• Transporter

Input and criteria to enter/ begin the business step
• Commercial invoice (original)
• Export permit (original)
• Land transport permit (original)
• Business Licence (copy)
• TIN Certificate (copy)
• Sanitary certificate (original)
• Radiation certificate (original)
• Levy payment receipt (original)
| Activities and associated documentary requirements | 3.6.1 The exporter negotiates with the transporter the price and conditions of carriage.  
3.6.2 The transporter reviews the price and conditions of carriage.  
- If not acceptable, both re-negotiate or terminate the step.  
- If acceptable, then  
3.6.3 The exporter makes an advance payment for the transport service by cash.  
3.6.4 The exporter hands-in commercial invoice, Export Permit, Sanitary Certificate, Land Transport Permit, Radiation Certificate, levy payment receipt, TIN certificate and copy of business license to the transporter.  
3.6.5 The transporter loads the truck and drives to the border. |  |
| Output criteria to exit the business step | Land transport is arranged  
Goods are on the way to the border |  |
| Average time required to complete this business step | 3 days |  |
### Process 3.7 Customs declaration

**Name of business process step**: 3.7 Customs declaration

**Lead Time (Max-Min)**: 2 hours

**Cost**

**Related laws, rules, and regulations**
Tax laws and Finance act, Tanzania Forest regulations on export.

**Step participants**
- Exporter (or representative)
- Clearing and Forwarding Agent (CFA)
- Tanzania Revenue Authority (TRA)
- Tanzania Food and Drug Authority (TFDA)
- Tanzania Forest Services Agency (TFS)
### Input and criteria to enter/begin the business step
- Export permit (original)
- Land transport permit (original)
- Commercial invoice (original)

### Activities and associated documentary requirements

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.7.1</td>
<td>Handle documents to CFA</td>
</tr>
<tr>
<td>3.7.2</td>
<td>The CFA uploads the documents in the Tanzania Customs Integrated System (TANCIS).</td>
</tr>
<tr>
<td>3.7.3</td>
<td>The TRA receives documents.</td>
</tr>
<tr>
<td>3.7.4</td>
<td>The TRA examines all documents and verifies cargo.</td>
</tr>
<tr>
<td></td>
<td>- If inconsistent, the TRA denies clearance.</td>
</tr>
<tr>
<td></td>
<td>- If consistent, then</td>
</tr>
<tr>
<td>3.7.5</td>
<td>The TRA orders authorization from the TFS and the TFDA.</td>
</tr>
<tr>
<td>3.7.6</td>
<td>The CFA calls parties for inspection</td>
</tr>
<tr>
<td>3.7.7</td>
<td>The TFS at the border port examines documents and verifies cargo.</td>
</tr>
<tr>
<td></td>
<td>* If not consistent the TFS denies endorsement and informs the TRA of the denial.</td>
</tr>
<tr>
<td></td>
<td>* If consistent, then (see 3.7.8)</td>
</tr>
<tr>
<td>3.7.8</td>
<td>The TFS endorses and sends the endorsed documents to the TRA.</td>
</tr>
<tr>
<td></td>
<td>- The TFDA at the border port examines documents, verifies cargo.</td>
</tr>
<tr>
<td></td>
<td>* If not consistent the TFDA denies endorsement and informs the TRA of the denial.</td>
</tr>
<tr>
<td></td>
<td>* If consistent, then (see 3.7.8)</td>
</tr>
<tr>
<td>3.7.9</td>
<td>The TRA receives the endorsed documents.</td>
</tr>
<tr>
<td>3.7.10</td>
<td>The TRA seals and issues the release order.</td>
</tr>
<tr>
<td>3.7.11</td>
<td>The exporter receives the release order.</td>
</tr>
</tbody>
</table>

### Average time required to complete this business step
2 hours
Process 3.8 Obtain certificate of origin

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>3.8 Obtain Certificate of Origin</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related laws, rules, and regulations</td>
<td>International rules of origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step participants</td>
<td>Exporter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tanzania Chamber of Commerce Industry and Agriculture (TCCIA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input and criteria to enter/begin the business step</td>
<td>Release order</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Export permit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial invoice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activities and associated documentary requirements</td>
<td>3.8.1 The exporter visit TCCIA offices and pick empty certificate.</td>
<td>TZS 30,000 (US$ 15) application fee</td>
<td></td>
</tr>
</tbody>
</table>
against documents.
- If the information and documents are not consistent the TCCIA sends back to the exporter to rectify and re-lodge.
- If the documents are consistent, then
3.8.7 The TCCIA signs and issues the certificates.
3.8.8 The exporter collects the certificates.

<table>
<thead>
<tr>
<th>Output criteria to exit the business step</th>
<th>Certificate of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time required to complete this business step</td>
<td>1 hour</td>
</tr>
</tbody>
</table>
# Process 3.9 Conclude border process

<table>
<thead>
<tr>
<th>Name of business process step</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9 Conclude border process</td>
<td>4 days</td>
<td></td>
</tr>
</tbody>
</table>

- **Related laws, rules, and regulations**: Tax laws, Regulations and Finance acts

- **Step participants**
  - Exporter (or representative)
  - Transporter
  - Tanzania revenue authority

- **Input and criteria to enter/begin the business step**: Release order

- **Activities and associated documentary requirements**
  - 3.9.1 The transporter moves cargo to the exit gate
  - 3.9.2 The Tanzania Revenue Authority makes final check on documents and cargo.
    - If documents and cargo are not consistent, the TRA denies exit.
  - 3.9.3 The TRA retains cargo at border yard and informs the exporter.
  - 3.9.4 The exporter takes necessary actions and restarts the step anew.
    - If documents and cargo are consistent, then
  - 3.9.3 The TRA permits the transporter to leave the country.
  - 3.8.4 The transporter proceeds to pass the border gate.
  - 3.8.5 The transporter delivers cargo at destination.
  - 3.8.6 The exporter makes final transport
### HONEY EXPORTS FROM TANZANIA

<table>
<thead>
<tr>
<th>Output criteria to exit the business step</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transporter passed at the border gate.</td>
</tr>
<tr>
<td>• Goods delivered</td>
</tr>
<tr>
<td>• Transporter received final payment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average time required to complete this business step</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 days</td>
</tr>
</tbody>
</table>
Process 3.1 Open Letter of Credit

<table>
<thead>
<tr>
<th>3. Pay</th>
<th>Lead Time (Max-Min)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of business process</td>
<td>3.1 Open letter of credit</td>
<td>14 days</td>
</tr>
</tbody>
</table>

Related laws, rules, and regulations

Process participants
- Exporter (or representative)
- Exporter's bank
- Importer's bank
- Importer

Input criteria to enter-begin the business process
Commercial invoice
| Activities and associated documentary requirements | 3.1.1 The importer requests his bank to open the letter of credit in favor of the exporter by filling in the application forms and attaching to it the Commercial Invoice.  
3.1.2 The Importer's bank receives the letter of credit application form and the attached documents from the importer.  
3.1.3 The Importer's bank evaluates the line of credit of the importer for the letter of credit application.  
If the letter of credit amount is below the line of credit, then the Importer's bank will issue the letter of credit without any additional assurance.  
If the letter of credit amount is above the line of credit (or the Importer's bank doubts the creditworthiness), the bank may demand the full amount plus related charges to be deposited as a security.  
3.1.4 The importer deposits the full amount plus letter of credit charges with the Importer's bank.  
3.1.5 The Importer's bank receives the money deposited by the importer.  
3.1.6 The Importer's bank gives out the draft letter of credit and sends it to the Exporter's bank in the country of the exporter.  
3.1.7 The Exporter's bank receives the draft letter of credit.  
3.1.8 The Exporter's bank reviews the draft letter of credit for its authenticity.  
If the draft does not correspond with the terms in the commercial invoice, the exporter will reject the draft letter of credit and sends it back to the Importer's bank to make amendments.  
If the draft corresponds with the terms in the commercial invoice, the Exporter's bank approves the draft letter of credit and  
3.1.9 The Exporter's bank forwards the draft letter of credit to the exporter for review and approval.  
3.1.10 The exporter reviews the draft letter of credit.  
3.1.11 If the letter of credit terms are not acceptable, the importer amends the draft letter of credit and submits it to the Importer's bank (see process 3.1.6).  
If the letter of credit terms are acceptable, the importer approves the draft letter of credit and submits to the Importer's bank.  
3.1.12 The Importer's bank issues the letter of credit.  
3.1.13 The Importer's bank informs the Exporter's bank that the letter of credit is ready.  
3.1.14 The Exporter's bank informs the exporter that the letter of credit is ready.  
3.1.15 The exporter receives the information about the letter of credit being ready. | US$ 150.00 |
| Output criteria to exit the business process | Open letter of credit |
| Average time required to complete this business process | 14 days |   |   |
Appendix III: Characteristics of honey

Honey has the following characteristic that makes it the most appropriate for several uses and highlighting handling keenness:

(a) Antibacterial properties

The presence of high sugar content, hydrogen peroxide and high acidity in honey prohibits growth of microorganisms. However, the antibacterial properties of honey are reduced or removed when it is subjected to change from its natural condition.

(b) Hygroscopic properties of honey

Hygroscopic is the tendency of honey to absorb moisture from the air, this depend on relative humidity of the environment and amount of moisture in honey. The lower the moisture content in honey, the higher the tendency to absorb moisture from the air.

(c) Viscosity of honey

This is the property of liquid honey that affects its tendency to flow. The higher the viscosity, the slower the honey will flow. This property is affected by the amount of moisture in honey and temperature. Honey with low water content flows relatively slow and an increase in temperature reduces its viscosity.

(d) Formation of Hydroxyl- Methyl-Furfural (HMF)

Hydroxyl-Methyl-Furfural (HMF) is a product formed when a solution of sugars containing fructose in acid media is heated. Fructose, one of the sugars found in honey is very sensitive to heat. Once subjected to heat, fructose forms HMF and the colour of honey changes to dark brown. Storage of honey at room temperature for long periods also denatures the fructose in honey resulting into formation of HMF. This is an indicator of honey freshness (honey which is recently harvested and not been subjected to high temperatures) and whether it has been overheated. In fresh honey there is practically no HMF but it increases upon storage depending on pH of honey and storage temperature. Recommended standard of HMF content is not more than 40mg/kg.

(e) Aroma and flavour substances

Honey has characteristic taste and smell. These depend mainly on where the bees collected the nectar and pollen. As many plant flowers have different aroma and flavours, the same goes to honey. For instance, honey from sunflower farm may taste and smell different from that of miombo woodlands or the mangroves. There are as many different flavours as there are plant nectar sources.

(f) Granulation

Granulation is a tendency of honey to form crystals. This tendency is related to honey composition and storage conditions. Some honeys never granulate while others will do so within a short time after extraction, or even in the comb. The two major sugars in honey (fructose and glucose) are the main factors to consider when determining the tendency of honey to granulate. The higher the glucose, the faster honey granulates and the higher the fructose the slower it granulates. Other factors, which favor granulation, are low temperatures and high colloidal content.

(g) Fermentation

Fermentation of honey is caused by the action of sugar-tolerant yeasts upon levulose and dextrose, resulting in the formation of alcohol and carbon dioxide. The alcohol in the presence of oxygen may then be broken down into acetic acid and water. As a result, honey that has fermented will have a sour taste. The main factors in honey fermentation are yeast, high moisture contents and temperature.

(h) Moisture content
Honey that has a high moisture content is more likely to ferment. Under the EU and Tanzania standards a maximum of 21% has been set. However under Tanzania conditions, the values of 21% are very seldom attained except honey from stingless honeybees which range from 20-25%.

(i) Mineral content

The non-volatile inorganic residue after ignition of honey is referred to as ash, and its separate components as minerals. Most of these are metals, some of which are present in only minute amounts and are called trace elements. The minerals, e.g. potassium, chlorine, sulphur, sodium, and calcium originate from the soil and get into honey via the plants. Minerals are among the many components that affect honey colour. Very light coloured honeys often contain little mineral matter and dark honeys contain more mineral matter.

(j) Diastase content

Diastase content is a quality factor influenced by shelf life, temperature and use of heat when stepping. It is therefore an indicator of freshness and overheating. Although there is a large natural variation of diastase, the minimum Diastase Number (DN) of 8 is set as minimum.

(k) Water insoluble solids

Water insoluble solids refer to pollen, combs, debris, bee and filth particles are important means to detect honey impurities. Water insoluble solids content for honey in EU and Tanzania Standards is not more than 0.1% for extracted honey while for pressed honey is not more than 0.5%.
Bibliography


TANEXA. (2012) *problems of official food export permits to East Africa Community (EAC) and Southern Africa Development Community (SADC), the case of Tanzania*.


Printed by ITC Digital Printing Service on FSC paper, which is environmentally-friendly paper (without chlorine) using vegetable-based inks. The printed matter is recyclable.