

# **Agricultural Analyses and Design** ***Analyses Agricoles et Conception***

Working Document Series No 7

## **GRADES AND STANDARDS**

By

**Andrew Friend**  
**Ricardo Frohmader**  
**Floyd Niernberger**

**March 2000**

*Funded by:* United States Agency for International Development   
*Undertaken by:* **CHEMONICS INTERNATIONAL, INC.** RAISE Consortium

---

# TABLE OF CONTENTS

---

PREFACE .....	i
LIST OF ACRONYMS .....	ii
EXECUTIVE SUMMARY .....	iii
LE SOMMAIRE EXECUTIF .....	vi
SECTION I. INTRODUCTION.....	1
SECTION II. LEGISLATIVE AND QUALITY CONTROL OF GRADES AND STANDARDS .....	3
A. Current Legislative Situation .....	3
B. Review of Ministerial Responsibilities .....	4
C. Control Laboratories and Their Staffing .....	5
1. National Food Quality Control Laboratory .....	5
2. Livestock and Veterinary Laboratory .....	6
3. Water and Food Testing Laboratory.....	6
4. Fish Research Center Laboratory .....	7
5. Food Control Section.....	7
6. Food Quality Testing Laboratory.....	7
SECTION III. RECOMMENDATIONS ON LEGISLATION AND CONTROL OF AGRICULTURAL STANDARDS .....	9
A. Legislation .....	9
1. Support and Funding for Legislation Activity .....	10
B. Testing Equipment And Laboratories .....	10
1. Support and Funding for Testing Equipment and Laboratories.....	11
C. Crops For Initial Standards Development .....	11
1. Support and Funding for Standards Development .....	12
SECTION IV. GRADES AND STANDARDS FOR MEAT AND DAIRY PRODUCTS 13	
A. Current Standards.....	13
B. Improvements Underway.....	13
C. Areas for Continued Improvement.....	14
SECTION V. HORTICULTURAL GRADES AND STANDARDS .....	16
A. Introduction.....	16
B. Current Standards.....	16
C. Recommendations for the Project.....	16
SECTION VI. ORGANIC CERTIFICATION.....	18

ANNEX A: MILK STANDARDS: A REVIEW AND SUGGESTED UPGRADING 1  
ANNEX B: MEAT STANDARDS: REVIEW AND SUGGESTIONS FOR REVISION 1

---

## PREFACE

---

The Agricultural Analyses and Design (AAD) activity is an eight-month design activity undertaken by the Chemonics International RAISE Consortium through funded supplied by USAID/Rwanda. USAID/ Rwanda is using this study and design effort to support its Strategic Objective Number Three (SO3) *to increase the ability of rural families in targeted communities to improve household food security*. Specifically, USAID seeks to obtain information and proposed intervention strategies, approaches and activities suitable for USAID/ Rwanda's support in achieving the second Intermediate Results under SO3 (IR3.2) of *creating and enhancing internal production / marketing chains that promote broad-based economic growth*. The purpose of AAD, therefore, is to provide USAID/ Rwanda directions and information for their use in future development and eventual funding of a project that seeks to revitalize agribusiness in Rwanda and recreate links between the rural sector and private sector traders and processors. This USAID project will achieve its objective by addressing identified constraints and opportunities within the commodity chain for increasing economic growth via agricultural production and agribusiness. The principal task of AAD is to identify these constraints and opportunities.

The Agricultural Analyses and Design activity is divided into three phases. The first phase (two months) is to identify and recommend for in-depth study to USAID/ Rwanda those commodity chains and interventions that have the most potential for creating increased economic growth, internal and external trade, opportunities for employment and increased income. The second phase (four months) will consist of a number of in-depth studies. Some studies will look at crosscutting issues such as transportation, finance and human capital development. An additional study will look at the creation of Agribusiness Support Centers. The remaining studies will be in-depth analysis of interventions related to commodity chains identified in phase one and selected for study by USAID/ Rwanda. The results of these studies will provide the basis for phase three of the activity, the synthesis of the studies done in phase two and development of a technical proposal and supportive design components for USAID/ Rwanda's use in developing a request for proposal (RFP) for a project to support IR3.2.

This study on grades and standards was undertaken by three consultants working in three separate visits to Rwanda. Dr. Floyd Niernberger looked at legislative and control issues related to grades and standards in a visit from 26 February to 11 March 2000. Dr. Andrew Friend reviewed grades and standards for the meat and milk industry in a visit from 5 to 19 February 2000. And, Mr. Ricardo Frohmader made comments on grades and standards for horticultural crops from his visit from 3 to 14 March 2000. Dr. Bruce Brower did additional editing work on the study.

---

## LIST OF ACRONYMS

---

AAD	Agricultural Analysis and Design project for USAID under the RAISE IQC
BNR	National Bank of Rwanda
DRSA	Regional Agricultural Service, Direction Regional de Service Agricole
FAO	Food and Agriculture Organization
FEWS	Famine Early Warning System
Frw	Rwandan Francs
GOR	Government of Rwanda
GTZ	International development organization of Germany
HACCP	Hazard analyses critical control points
ISO	International Organization of Standards
MINAGRI	Ministry of Agriculture
MINECOFIN	Ministry of Economic Planning and Finance of Rwanda
MINICOM	Ministry of Commerce of Rwanda
NGO	Non Governmental Organization
PASAR	Food Security Support Project of Rwanda, Projet d'Appui a la Securite Alimentarie au Rwanda
RAISE IQC	A USAID Indefinite Quantity Contract aimed at improving rural incomes from agricultural and environmentally related activities that are economically and environmentally sustainable.
UN	United Nations
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
UNIDO	United Nations Industrial Development Organization
WB	World Bank
WHO	World Health Organization

---

## EXECUTIVE SUMMARY

---

In a modern agricultural economy, grades and standards play a fundamental role in the transfer of goods from producers to consumers. They provide uniform and consistent understanding as to the characteristics of the product for sale. They can also assure the buyer of conformance to health standards. In a more developing agricultural economy, such as Rwanda, grades and standards are not typically used. Still they can and should play an important role. Two obvious examples of the use of grades and standards are assuring public health and as a basis for interregional trade and negotiation. As the country moves to greater exports, the need for grades and standards that meet international norms becomes more urgent. A number of regulations on grades and standards already exist in Rwanda. They are incomplete and most are outdated and inappropriate (some dating to 1915). Up to 1999, little had been done regarding grades and standard. In 1999, however, MINICOM created a project called “Focal Point” to deal with this issue, aiming to create a National Bureau of Standards.

This study is a collection of work performed by several consultants. They looked at three elements of grades and standards:

- Legislative and quality control
- Grades and standards for the meat and dairy industry
- Grades and standards for horticultural crops.

Certification for organic production was also briefly examined by the study for both livestock and horticultural products.

### **A. Legislative and Quality Control of Grades and Standards**

Much of the future legislative work in grades and standards will derive from the National Bureau of Standards now being establish via the Focal Point with UNIDO support. Rwanda is seeking to gain membership to the International Organization of Standardization (ISO). To do so, Rwanda must have a single standards organization in the country.

The study looked at four laboratory sites to determine suitability for performing quality control and testing of agricultural products:

- The National Food Quality Control Laboratory in Kicukiro run by MINICOM
- The Livestock and Veterinary Laboratory in Rubilizi run by MINAGRI
- The Water and Food Testing Laboratory in Butare associated with the National University of Rwanda
- The Fish Research Center Laboratory in Butare presently operated by the National University of Rwanda.

The Ministry of Health and KIST are also looking to develop food laboratories.

All of the laboratories were greatly under-utilized. Outside of the two laboratories in Butare, the laboratories had considerable broken, unused or destroyed equipment. All of the labs faced problems in getting reagents and materials. Some labs had equipment that others did not, but there was no linkage or formal collaboration between the laboratories.

The study recommends that the proposed project should not get involved in legislative issues related to grades and standards. The program currently underway appears to be appropriate and should be supported.

## **B. Grades and Standards for Meat and Dairy Products**

Grades and standards for meat and dairy products are outdated. Most were put into place before 1957. Several meat standards were upgraded in 1998 as the result of heifer importations from Ireland and fear of BSE. Additional changes were made in 1999 as part of the negotiations with Uganda on fresh milk and meat imports.

At the present time, appropriate grades and standards for meat and dairy products are critical issues. With the return of refugees and their herds of cattle, there is considerable danger of disease being carried into the country. This could reduce production and disqualify producers from the possibilities of an export market.

One of the more contentious issues, mentioned in the study, concerns quality standards for local “fresh” milk cooling tanks in urban retail outlets. The study recommends establishing a system of routine milk and hygiene testing, with subsequent registration of processing dairies, milk cooler/retailers, milk collection centers, and (to the extent possible) private milking herds. A phased approach was suggested to improve the hygiene of milk being sold, recognizing the need to have low-cost but safe milk to supply Kigali and the major secondary cities.

The study made a review of existing meat and dairy standards and compared them with the FAO/WHO Codex Alimentarius International Food Standards. Among the recommendations made in the review include the following:

- Establish registration of slaughterhouses and hygiene inspection of on-farm slaughtering,
- Upgrade meat inspectors,
- Revise carcass classification,
- Require that all import and export of meat products be iced or in refrigerated vehicles,
- Establish a system of routine sampling and testing for bacteriology,
- Formalize the arrangement of ritual slaughter for Halal meat,
- Revise standards for bi-annual inspection of slaughterhouses and meat packing plants
- Revise minimum standards for milk

- Review the standards for raw milk sale
- Establish systems of licensing and testing of fresh milk selling points
- Upgrade standards for pasteurized milk
- Upgrade standards for boiled milk
- Upgrade descriptions of milk products

## **C. Horticultural Grades and Standards**

The study reviewed the situation on grades and standards for horticultural crops. Again, most of the existing regulations are outdated and need to be revised. Unlike the grades and standards for meat and dairy products, however, there is less urgency to do so, with the exception of specific export crops. Domestic marketing of horticultural and field crops already operates with de-facto market standards. Rwandan consumers know good quality beans from bad quality. There is also no pressing health risk in the purchase of most horticultural products, as there is for meat and dairy products.

In the export market, grades and standards are already in place in the consuming countries. The international grades and standards specified in the Codex Alimentarius and the EU Standards Guide control market transactions. Rwandan exporters need to know the specifics of these given standards so their products will be acceptable in European or other export markets.

## **D. Organic Certification**

The study briefly looked at organic certification. There is considerable interest in the production of organic products because of the high value placed on such products by affluent consumers. Organic production, however, does not mean production without inputs. Rather, the organic label on a product means it is produced and packaged with inputs and practices that meet given organic certification requirements. This certification is required for products to be sold as organic in European markets. Unfortunately, at the moment, there are different organic standards for different countries, including the United Kingdom Register of Organic Food Standards (UKROFS) and EC Regulation 2092/91. Certification can occur in several ways. One is to use the International Federation of Organic Agriculture Movement (IFOAM). Another is to seek certification from ECOCERT, the European Union certifying agency. Certification can cost \$4,000 or more, and requires periodic inspection and evaluation of the production and packing processes. Uncertified organic products are illegal to sell as organic, in many markets.

---

## LE SOMMAIRE EXECUTIF

---

Dans une économie agricole moderne, les classifications en calibre, qualité et la normalisation des produits jouent un rôle fondamental dans le transport des produits entre producteurs et consommateurs. Pour une économie en voie de développement agricole comme c'est le cas au Rwanda, les grades et les niveaux standards peuvent toujours et doivent même jouer un rôle important. Deux exemples évidents d'usage des grades et des niveaux standards pour les produits c'est d'assurer une bonne santé au public consommateur et de servir de base pour le commerce et les négociations inter-régionaux. Comme le pays se dirige vers une économie nécessitant des exportations en grande quantité, la nécessité d'utiliser les grades et les niveaux standards (des produits) répondant aux normes internationales devient plus urgent. Un nombre de règlement à suivre en matière de détermination des grades et des niveaux standards des produits existent déjà au Rwanda mais la plupart d'entre eux datent de très longtemps (il y en a qui datent de 1915) et sont inappropriés. Jusqu'en 1999, très peu a été fait dans le secteur des grades et niveaux standards au niveau du pays. C'est en 1999 que le MINICOM ont créé un projet d'étude visant à trouver une solution à cette question, mais avec un objectif de créer un bureau national de standardisation.

Cette étude se concentre sur 3 éléments relatifs aux grades et niveaux standards :

- Elle a, en premier lieu concentrée ses efforts sur les aspects légal et de contrôle de la qualité.
- Elle examine les grades et les niveaux standards pour l'industrie de la viande et celle des produits laitiers.
- Elle considère les grades et standards des produits horticoles.

La certification pour les productions organiques a été également brièvement examinée par cette étude pour les produits d'élevage et horticoles.

### **1. Législation et contrôle de la qualité des grades et normalization.**

Le plus grand travail à l'avenir en matière légale en ce qui concerne les grades et les standards des produits viendra du bureau national de standardisation qui est maintenant en voie d'être créé par le biais du projet d'étude du MINICOM avec le soutien de l'UNIDO. Le Rwanda a tout l'intérêt d'être membre de l'organisation internationale de standardisation et pour ce faire, il doit disposer d'une seule institution de standardisation au niveau du pays.

L'étude a dirigé ses travaux sur 4 laboratoires pour voir s'ils étaient à mesure de contrôler la qualité et faire des analyses des produits agricoles. Ces laboratoires sont :

- Le laboratoire de contrôle de la qualité des denrées alimentaires à Kicukiro qui est sous le MINICOM,
- Le laboratoire du centre d'élevage de Rubirizi sous le MINAGRI,

- Le laboratoire de contrôle de la qualité d'eau et des denrées alimentaires à Butare, qui est dirigé par l'Université nationale du Rwanda, et
- Le centre de recherche piscicole de Butare qui est actuellement dirigé par l'Université nationale du Rwanda.

Le ministère de la santé et le KIST ont également l'intention d'ouvrir des laboratoires d'analyse de la qualité des denrées alimentaires.

Tous les laboratoires étaient exploités en dessous de leur capacité. A part les deux laboratoires situés à Butare, les autres fonctionnaient dans un état lamentable, leurs équipements étaient soit cassés, inutilisés ou simplement détruits. Tous les laboratoires présentaient des problèmes d'approvisionnement en réactifs et autre matériel nécessaire. Certains d'entre eux avaient des équipements dont les autres ne disposaient pas mais il n'y avait aucun lieu de communication ou de collaboration formelle entre eux.

L'étude de ce volet recommande que le projet en question ne se conforme pas, du moins à ce stade des activités, aux questions législatives relatives aux grades et standards. Le programme actuellement en cours semble être approprié et doit être soutenu.

## **2. Grades et normes pour la viande et les produits laitiers**

Les grades et standards relatifs à la viande et les produits laitiers datent de très longtemps. Beaucoup d'entre eux ont été déterminés avant 1957. Plusieurs niveaux standards de la viande étaient révisés en 1998 suite à l'introduction de vaches de race exotique importées d'Irlande et par peur du BSF. Des changements ultérieurs étaient effectués en 1999 suite aux négociations avec l'Uganda sur les questions relatives à l'importation du lait frais et de la viande.

Actuellement, la question des grades et standards appropriés pour la viande et les produits laitiers constitue un problème majeur. Avec le retour des réfugiés et de leurs troupeaux de bovins, il y a grand danger d'introduction de certaines maladies dans le pays, lesquelles réduiraient la production et disqualifieraient les producteurs de toute possibilité de participation aux activités d'exportation.

L'une des questions les plus litigieuses sur laquelle l'étude a fait un petit commentaire concerne la qualité standard du lait frais localement livré dans des conteneurs frigorifiques et vendu aux détaillants dans les villes du pays. L'étude recommande qu'il y ait un système routinier bien établi pour contrôler l'hygiène et la qualité du lait, ainsi qu'un recensement ultérieur des fermes produisant le lait, unités de refroidissement du lait, vendeurs détaillants, centres de collecte du lait et, dans la mesure du possible, les vaches laitières appartenant aux éleveurs privés. Une approche procédant par étape était proposée afin d'améliorer l'hygiène du lait vendu, tout en reconnaissant la nécessité d'avoir du lait à bas prix mais aussi hygiénique pour approvisionner la ville de Kigali et les principales villes secondaires du pays.

L'étude a fait une liste des niveaux standards existants en ce qui concerne les produits de viande et laitiers. Parmi les recommandations émises quant à cette liste, on peut mentionner les suivantes :

- Recensement de tous les abattoirs et assurer l'inspection de l'hygiène des lieux d'abattage sur les fermes.
- Augmenter les capacités des inspecteurs chargés de contrôler la qualité de la viande.
- Revoir la classification des cadavres
- Exiger que toute activité liée à l'importation et à l'exportation de la viande s'assure que ce produit est soit sous forme congelé ou transporté dans des véhicules frigorifiques
- Etablir un système routinier de prise d'échantillon pour analyse bactériologique
- Formaliser les arrangements pour les abattages rituels pour la viande Halal
- Revoir les niveaux standards pour une inspection semestrielle des abattoirs et des centres de collecte de la viande
- Réviser les niveaux standards minimaux pour le lait
- Revoir les niveaux standards de vente du lait à l'état naturel
- Etablir des systèmes d'octroyer des licences de vente et d'analyse du lait frais sur les lieux de vente
- Améliorer les niveaux standards du lait pasteurisé
- Améliorer les niveaux standards du lait bouilli
- Améliorer la liste descriptive des produits laitiers.

### **3. Grades et normes des produits horticoles**

L'étude a passé en revue la situation concernant les grades et les niveaux standards pour les denrées horticoles. Une fois encore, la plupart des règlements existants datent de longtemps et nécessitent d'être revus. Mais contrairement aux grades et niveaux standards pour la viande et les produits laitiers, il n'y a pas urgence à les revoir. A l'exception de quelques denrées spécifiques destinées à l'exportation, le marketing des produits horticoles et autres opère déjà avec des niveaux standards sûrs de marketing sur les marchés locaux. Les consommateurs rwandais savent différencier le haricot de bonne qualité du haricot de mauvaise qualité. Il n'y a pas plus de risque majeur pour la santé dans l'achat de presque tous les produits horticoles comme c'est le cas pour la viande et les produits laitiers.

Dans le marché de l'exportation, les grades et standards sont déjà en place dans les pays consommateurs. Les grades et niveaux standards internationaux, tel que c'est mentionné dans « Codex Alimentarius » et le répertoire de l'Union Européenne sur les niveaux standards, contrôlent les transactions de marché. Les exportateurs rwandais ont besoin de savoir les particularités de ces standards pour que leurs produits soient acceptables sur les marchés européens et autres.

### **4. Certification biologique**

L'étude a examiné brièvement la certification biologique. Il y a un intérêt considérable dans la production des produits biologiques à cause de la plus haute intérêt que les consommateurs ont

mis dans ce genre de produits. Toutefois les productions organiques ne signifient pas la production sans intrants. La marque organique sur un produit veut plutôt dire qu'il est produit et emballé avec des intrants et pratiques répondant aux exigences de certification biologique. Pour être vendu comme produit organique sur les marchés européens, cette certification est nécessaire. Malheureusement pour le moment, il y a différents standards biologiques pour différents pays, y compris « United Kingdom register of organic food standards (UKROFS) » et le « EC réglementation 2042/91 ». La certification peut avoir lieu de plusieurs façons. L'une est l'usage de la fédération internationale du mouvement agricole pour les produits organiques. L'autre est de demander la certification de ECOCERT, l'agence de certification de l'Union Européenne. La certification peut revenir à USD 4.000 ou plus et exige une inspection et une évaluation de la production et de l'emballage. Les produits biologiques qui ne sont pas agréés sont considérés comme illégaux pour la vente en tant que produits biologiques dans plusieurs marchés.

---

## SECTION I. INTRODUCTION

---

A universal characteristic of advanced markets is the use of grades and standards. They play a fundamental role in the transfer of goods from producers to consumers. They are used to manage quality and consistency of product. Grades and standards are not just for developed economies. In a more developing agricultural economy, such as Rwanda, grades and standards still can and should play an important role. Two obvious examples of the use of grades and standards are assuring public health and as a basis for interregional trade and negotiation. As the country moves to greater exports, the need for grades and standards that meet international norms becomes more urgent.

Grades and standards generally result from one or more of three sources:

- 1) Custom
- 2) Government regulation
- 3) Market protection

Custom refers to those practices and standards that evolve over time and become entrenched in usage. An example is the use of standard packaging, such as half pint punnets for packaging berries. Government regulation refers to those definitions that govern the production, handling, grading, packaging, or marketing of product. Many regulations are designed for the protection of public health and safety. These are particularly important because they have the force of law and their violation can often represent significant public health risks. Market protection refers to those regulations and definitions that are employed to encourage price discrimination or in some instances, to exclude product. For example, producers of some products have established standards for product that become “market orders” that prohibit the sale of product in specific markets which does not conform to those standards. In many instances, these restrictions are only in effect during periods of peak production and are intended to maintain profitable prices for high quality product. They help protect the market against over supply by forcing substandard product to go to other markets, to processing or to storage. They also encourage producers to upgrade their production to be able to meet those standards.

Grades and standards may refer to the product itself, in terms quality, size, color, shape, texture, age or weight. They may refer to packaging, such as the “green” standards requiring the use of recyclable materials in Europe. They may refer to the labeling. They may refer to processing, such as type of treatment (radiation, temperature, washing, etc.), cleanliness, as well as allowable types and levels of contamination. They may refer to production, including type of germplasm, the use of chemicals, and even the type of labor employed – usually involving a prohibition against child or forced labor.

The market informally enforces some standards, such as when buyers refuse to accept product that does not conform to expectations. Others are maintained by certifying organizations and the buyer is informed of conformance by the way the product is labeled. This is important in those instances where there may be no outward manifestation of conformance, such as in the case of

organic product. Those grades and standards that are established by law are typically enforced through government inspectors or government authorized inspectors. In many instances, sampling systems are used to test conformance rather than 100 percent inspection. Noncompliance may generate warnings, fines, withholding product from the market, recalling product, and in sever cases, prosecution.

While grades and standards are neither well developed nor widely used in Rwanda, there is no need to re-invent them. Rather, those of the developed countries should be looked at as models for adoption. Indeed, to participate in the export markets, they must be adopted. Considerable effort will need to be expended in Rwanda to train producers, processors, handlers, and package manufacturers as to the nature of these standards and how to conform to them. As necessary, it will also be important to help the government of Rwanda in legalizing and monitoring standards, particularly those that deal with public health.

---

## SECTION II. LEGISLATIVE AND QUALITY CONTROL OF GRADES AND STANDARDS

---

This section of the report discusses: the current situation and ways grades and standards can be established within the agricultural sector in Rwanda. It addresses need for legislation and control and testing of agricultural grades and standards. It also considers the general framework of grades and standards systems in areas of the world where most of the potential exists for Rwandan products selected for export expansion.

### A. Current Legislative Situation

The *Agribusiness Policy Profile* study discussed the lack of a legally recognized governmental structure in Rwanda that would be able to develop domestic standards, perform quality measurements, certify quality of products, and provide information on international food and commodities standards. It is felt that standards will be important to facilitate marketing of the products selected for domestic and export expansion, therefore the absence in Rwanda of a standards development bureau should be addressed.

Little activity concerning grades and standards considerations for grains and foods took place during the years of colonization by Germany and later Belgium. For example, the most recent grade specifications issued for corn, as reported in the Volume 3 Book of Codes and Laws of Rwanda is an Ordinance dated March 1, 1958, using as legal authority the law of July 26, 1910.

After independence in 1962, ordinances addressing grades and standards were carried out in the following manner. The Ministry that has responsibility for an issue or concern of the people prepares proposed action after meetings with affected groups and other agencies. After agreement, a proposal is prepared and the Minister then presents it to government. If acceptable it is assigned to an Ad Hoc Committee to prepare legislation. After review, the Committee presents the proposal to National Assembly. The Assembly can vote to accept or reject the proposal. If accepted, the ordinance goes to the President for signature. After signature, a law is published in the Official Gazette. Eventually the law is also filed in the book "Codes and Laws of Rwanda" in the appropriate section such as agriculture, food, etc. After the law is signed, the affected Ministry assumes responsibility and issues a Ministerial decree, directives, and regulations to effect the practical administration of the law.

A review of the current situation of grades and standards in Rwanda indicates that progress is being made in addressing standards issues in Rwanda that will have direct application to the establishment of grades and standards for agricultural crops and products.

Within the framework on the Integrated Program for Industrial Development, a joint project for the Ministry of Commerce, Industry and Tourism (MINICOM) and United Nations Industrial Development Organization ( UNIDO) it was recognized in late 1999 that there is:

“ ... the necessity for creating adequate structures for developing Standardization, Quality Management and Metrology activities in Rwanda. For this purpose a Focal Point was created, as an initial step towards a Rwanda Bureau of Standards.”

Focal Point began in November 1999 with activities for:

- The development and management of Rwandese standards, compatible with international standards;
- The development of an evaluation system for quality, based on accreditation of testing laboratories and certification organizations for quality systems according to ISO 9000 standards, the certification of products and personnel.
- The development of a national metrology to enable traceability of calibration of industrial measuring equipment as well as the legal aspects of measurements performed by economic agents in commercial transactions.

At the present time Focal Point consists of a staff of three persons located in offices at the site of the National Food Quality Control Laboratory building in Kicukiro. The offices are well equipped with computers, printers, photocopier, fax, scanner, and telephone and Internet facilities. A library of standards information was started and is continuing to be updated at the site. The staff was trained by UNIDO through study tours to Tunisia, Kenya and Romania. An awareness workshop on standardization and quality concepts was held in Rwanda on 14 December 1999, for members of ministries, public services, professional organizations and industries. Focal Point had an immediate task of preparation of a proposal for creation of a Rwanda Bureau of Standards. It has prepared a draft proposal and MINICOM is studying the proposal.

The International Organization for Standardization (ISO) accept membership application from only a single organization in a country. Unless a standards bureau is established in Rwanda, the country is not able to apply to be an ISO member. Until Rwanda can meet the requirements to apply as a member of ISO, Focal Point is cooperating with the South African Bureau of Standards, and has contacts with similar organizations in Kenya, Uganda and Zimbabwe. Presently, Uganda is a correspondent member of ISO while the other countries are subscriber members.

## **B. Review of Ministerial Responsibilities**

The consultant interviewed staff from three Ministries: Commerce, Agriculture and Health. All persons met with were aware of the lead role of MINICOM through Focal Point in preparing a legislative proposal for a Bureau of Standards to address quality control, testing and standards in Rwanda. There does not seem to be a problem between the other Ministries in playing a supporting role to MINICOM in this task. The concept of an autonomous standards group was favored by some, while others felt funding would be a serious problem for an autonomous group as it was doubtful that sufficient self-funding was possible through fees for services that could be collected for certification and lab tests.

Also discussed with staff in each Ministry was how they envisioned standards for a particular issue or crop would be developed within a proposed Bureau of Standards. Most discussion centered on health, contamination, dangerous residue, mislabeling and domestic concerns of food and products that have taken place over the past year in Rwanda. It appeared these issues would have high priority in initial Bureau activity.

Staff identified the present laboratories in Rwanda that could do agricultural crops quality characteristics testing. Generally, the labs were not used for analyses because the lab equipment was out of order or instruments or tests were not available for the type of analyses required. Most cases of suspected food product contamination that requires specific chemical testing is done outside Rwanda.

Several individuals were critical of a private international testing service that had certified as safe and satisfactory certain donor products that were later discovered as contaminated or unfit for human consumption. Consequently, other country's governmental testing services are presently being used.

no new suggestions on possible sources of revenue for funding a standards program were uncovered in the interviews. Present laboratories are underutilized or cannot perform tests of the type that would bring in needed revenue. Most were constructed and equipped through cooperative donor grants. The 1994 internal conditions interrupted operation and staffing of the labs. Few quality tests on agricultural products can presently be done. Other needs for money after 1994 left no monies available in Ministries to rehabilitate labs in order to perform chargeable services. Grading and standards services including testing and certification seldom generate sufficient funds from users' fees to cover costs. Some of the costs must be funded by government appropriation.

## **C. Control Laboratories and Their Staffing**

Four laboratory sites were visited by the consultant to determine general suitability for performing quality characteristic measures of some of the agricultural products discussed in the *Selected Commodity Profile* study. Additionally, one location that performs sampling of market products and another location of a future food laboratory were visited.

### **1. National Food Quality Control Laboratory**

This laboratory is located in Kicukiro, outside Kigali central. At this time responsibility for operation is with MINICOM. It is the outgrowth of a USAID project begun in 1982 that ended in 1984. The second phase of the project started in 1984 and continued through 1990 with construction of a building and purchase of equipment and funding. UNFAO furnished more equipment over the period 1991 through 1993. Germany also furnished equipment during 1991 until 1995. Regrettably, internal violence in 1994 halted installation of equipment and operation of the laboratory until recently.

The laboratory was originally intended for use to support projects dealing with storage of dry beans and sorghum. Later equipment was added to do additional types of quality tests on more crops and food products and to be used for research.

An evaluation of the status of the National Food Quality Control Laboratory, located in the basement of the Kicukiro offices, was completed by Pierre Martiniere, consultant for UNFAO (Oct-Dec 1999). He wrote that the present laboratory was not considered suitable for modern analytical work that would meet basic quality standards (Standards EN 4500). He felt the lab needed to be relocated in an improved facility and both lab equipment and staff strengthened.

There are three members of the lab staff. The head is recently appointed and is in the process of rehabilitating and testing the equipment from storage that Pierre Martiniere had discovered for operational capability. He is also preparing the quality laboratory requirements for the Focal Point team. One technician does the physical testing of samples and the other does bacteriological testing.

In the consultant's estimation the lab without costly rehabilitation, could presently be used only for basic physical tests of grain grading and perhaps training for grain inspection and grading. It is not suitable in its present state for modern analytical testing necessary for a standards bureau.

## **2. Livestock and Veterinary Laboratory**

This laboratory complex consisting of an administration and three other buildings is located in Rubizi outside Kigali. Operating responsibility is with MINAGRI.

The building complex was built in 1985/6 but some equipment has never been used and other equipment had not been used after the 1994 war. Equipment in the vaccine preparation section would not be operable without rehabilitation. Vaccines used in MINAGRI programs within Rwanda must be purchased from outside the country. The internal violence of 1994 and the lack of trained specialists were reasons given for underutilization of the lab.

There is an active program in brucellosis and East Coast fever testing and vaccination. The primary focus of the lab at this time is on cattle. Laboratory staff in the vaccination program appeared well managed and busy. However, most of the buildings and equipment were not being used.

The laboratory could be used for quality tests on livestock standards with the addition of applicable equipment.

## **3. Water and Food Testing Laboratory**

This laboratory was built and began operations in 1996. The lab is in Butare and presently operates as a joint project with the University of Liege and National University of Rwanda although it is located off campus. It is the responsibility of MINEDUC and may also be referred to as a hygiene lab. It functions as a central lab and mostly tests water samples at the present time although it recently tested some suspected food products for contamination. It can do microbiology tests but not toxicological and can do most physical tests of nitrates, ph, salts, etc. It does not have a gas chromatograph. Presently samples are sent to the University of Liege for more detailed analyses.

It is a well designed lab and most equipment is operable but has limited capability for agricultural product specialized testing. The laboratory would require additional instruments for commodity and food testing.

There were three lab technicians in the physical chemistry section of the lab and three in the microbiology unit. They felt that they had the training to carry out most physical and chemical testing of samples and could do food analyses.

#### **4. Fish Research Center Laboratory**

This lab is on the site of the fish research center in Butare and presently operates under the National University of Rwanda. It was probably built in the mid 1980's and is in fair condition. The lab can do measurements of calories, fiber, moisture, and ash although new equipment was not yet in operation for protein content determination. Although water quality of the fish tanks is the primary work, it also performs tests on fish feed values and other animal feed measurements. Additionally, the lab does testing of samples for research projects.

The director and his staff had a working relationship with local fish producers providing sample analyses and fish feed analyses. The staff were interested in fee services they could provide and may be able to do some agricultural product testing for producers in the area. The lab staff could perform some fish products standards testing.

#### **5. Food Control Section**

This section has recently been started by the Ministry of Health to do routine inspection of products, storage places and customs inspections. This includes food products.

For domestic businesses the staff would take samples of products for later analyses. Any analyses required beyond simple appearance are sent to laboratories in other countries. This could be analyzed for mold, rust, infestation and content ingredients. Uganda and South Africa laboratories are presently being used. The section also supervises destruction of products declared unfit for human consumption or dangerous to retain. It basically follows the terms of reference of food safety and hygiene. Responsibilities are in control and manufacture of food so work involves licensing, labeling and composition and enforcement.

The section head is aware of the efforts of Focal Point and has attended the awareness seminar. The work of this group would impact marketing of commodities efforts and the lack of a food laboratory in Rwanda will require awareness of what methods and testing facilities this section uses for analyses to avoid inter-laboratory method differences.

#### **6. Food Quality Testing Laboratory**

This lab is in the process of being set up in the Kigali Institute of Science and Technology (KIST) campus in Kigali. It is jointly funded by UNDP/Rwanda and was assisted by both Kenya and South Africa in preparing the curriculum. A 3 to 4 year food quality-testing program leading to either a diploma or BS degree is to start this April within the Food Technology Department.

Only basic physics and chemical lab tests and some tests used in short courses in food safety can be presently run. Because there is not an on-site lab capable advanced chemical content determination, it is planned to use outside training and also internships at food processing locations for senior students.

When a food lab at KIST is completed it would be useful for quality testing of certain agricultural commodities. The most important immediate value of the food quality program may be in supplying trained people in food quality principles to meet the needs of government and private companies.

From the brief visits to the four laboratories and two other interested locations it is evident there is no laboratory in Rwanda that could be used today without additional equipment for agricultural products analyses to determine if the products met international standards or probably any rigorous domestic standards to be proposed.

---

## SECTION III. RECOMMENDATIONS ON LEGISLATION AND CONTROL OF AGRICULTURAL STANDARDS

---

### A. Legislation

It is not necessary for the USAID/Chemonics project to undertake action on legislative initiative for agricultural grades and standards in Rwanda at this time. The MIMICOM sponsored Focal Point is already underway to develop a structure for developing standardization, quality management and methodologies. This structure would be an umbrella organization patterned after existing standardization structures in most other nations. If approved as envisioned, this legislation would provide necessary ancillary services for efficient operation of agricultural standards within Rwanda.

Focal Point has developed a proposal to create a Standardization Bureau allowing Rwanda:

- To apply for membership in the International Organization for Standardization, allowing easier development of compatible international standards.
- To develop an evaluation system for quality of products based on ISO standards for testing laboratories using approved methods of determination and standard equipment and allow for accreditation of labs, products and personnel.
- To provide a procedure to track calibration of measuring equipment used in commercial transactions for control and legal ramifications.
- To create a central awareness of quality in the marketplace and foster free movement of products and goods both internally and internationally.

Focal Point efforts are being carried out on schedule and the proposal is currently under review by MINICOM. The concept is sound and similar Bureaus or Institutes are already in neighboring countries and Southeast Africa.

It suggested that grades and standards activities begin in three areas during the time that Focal Point proposed legislation is debated. This work would provide the necessary background to efficiently develop agricultural commodities grades and standards when a decision on the Focal Point proposal is made.

1. Legislation and Regulations Issues.
  - a. Begin a dialogue with Focal Point staff on the general procedure for proposing a standard. Examine the procedure for potential problems and discuss with the staff possible resolutions.
  - b. Set up an ad hoc committee within MINAGRI to review the standard procedure and to propose a procedure to follow by the staff when proposing regulations to implement a crop grade and standard.
  - c. Develop a draft procedure for priority agricultural products, review and discuss with MINAGRI administration.

- d. Consider issues of responsibility for movement of a proposed agricultural standard through MINAGRI and other agencies.
2. Grades and Standards for Agricultural Crops
    - a. For the proposed agricultural products, continue to collect and review the international and nearby country grades and standards.
    - b. Assemble the information in working files by agricultural product, and prioritize by internal direction the order of development.
  3. Staff Development
    - a. Develop a general outline to follow when developing crop and food standards. It should contain: recommended format; standards considerations; grade considerations; schedule of development; method of obtaining producer-marketer-consumer input and review; and include a list of Bureau approved methods and equipment for determining quality measurements.
    - b. Develop a crop regulations format to follow when developing specific crop regulations. It should contain; duties of MINAGRI for the crop; inspection procedures; certification procedures; application to domestic, import, export or combination; cooperating and reporting relationships with other affected Ministries and organizations; issuance, collection and retention of certificates; appeal procedures, enforcement and penalty provisions; and, public notice schedule.
    - c. Prepare instructions on use of the Internet and computer files to adapt source standards, grades regulations to conditions in Rwanda.

### **1. Support and Funding for Legislation Activity**

Immediate funding is not required for legislation efforts as MINICOM are doing this activity through Focal Point.

Until the Focal Point proposal for a Standards Bureau is addressed it will not be known the extent of needs of MINAGRI to support and address technical deficiencies within MINAGRI in preparing standard and grades proposals for crops. Within the three areas of suggested activities to pursue during the interim, assistance from outside Rwanda may be needed to prepare training materials for staff development at the appropriate time. This would include developing a crop regulations format for use in Rwanda including generic sections of crop regulation, sampling and inspection guidelines, and generic crop handbook outline. The activity would require 8 weeks time.

The other two areas of suggested activity could be supported through the existing support programs and as a support activity of the Agribusiness Development Center, if established at a later date.

### **B. Testing Equipment And Laboratories**

The establishment of a Central Standards Laboratory proposed by Focal Point is critical to the ability of Rwanda to develop Standards that will be credible, acceptable, and compatible in

international trade. Laboratories established in Rwanda for testing of agricultural products in the past have been underutilized and had difficulty in credibility of testing results with outside purchasers because of lack of central control of methods, procedures, and equipment reference sample use.

The location of the Central Standards Laboratory will be decided by the funding sources but it is recommended that the Kigali area be the location. Furthermore, it is suggested that the Kigali Institute of Technology and Science (KIST) area be considered. Reasons are: academic environment for professional staff; supporting faculty staff for most product standards and equipment to be approved; and in particular the food science department for agricultural products; good access to air and vehicle transport; closeness to business interests; and, autonomous environment.

### **1. Support and Funding for Testing Equipment and Laboratories**

Until the Central Standards Laboratory is operating it does not seem necessary to build satellite labs or purchase equipment prior to approval as to type by the Standards Bureau. Consequently, funding is not proposed.

Two approaches to test agricultural products for standards and grade development during the interim of Central Standards Laboratory operation are suggested. Both approaches are currently being used in Rwanda.

1. Use approved laboratories in countries outside Rwanda for laboratory results. Samples are sent to these laboratories for analyses and results reported to the user. Whenever possible, ISO approved procedures should be used by the laboratories selected. In international trade of agricultural products, the purchaser may require sample certification to be positive the sample is representative of the load, according to approved sampling procedures. Private agencies such as Societe de General Surveillance (SGS) perform both the taking of samples and testing for quality and grade factors. Rwanda has had problems with recent donor products certified by SGS and presently prefers to not use their services. Other private inspection services could be substituted.
2. Use the limited services that can be provided by the labs in Rwanda for domestic only needs. Increased use of the labs should lead to improvement in results, as trained staff is again becoming available and some equipment has been made operable. What is needed in some labs visited is reference sample usage like the Food and Water Testing Lab in Buture, has with the University of Liege.

### **C. Crops For Initial Standards Development**

One could attempt to address standards for many Rwandan crops initially. However, difficulties may be encountered in funding, obtaining adequate technical staff, and establishing authority for dispute resolution as grading standards are proposed. To minimize the difficulties, and in the belief that small operations are more easily managed and controlled when starting out, it is

suggested to limit development of standards to the highest priority needs and current problem areas.

There are domestic health concerns about agricultural products like dairy products (milk) that have high priority. Standards and grades development for a product like milk will take time because of the complexity of assembly, difficulty of safe transport and diverse consumer and health interests. Domestic health interests should be a primary concern and work should initially begin to develop standards for dairy products.

It is suggested that tea be also considered for initial development for different reasons. The crop has been grown for many years and has an established marketing channel. It is a major foreign exchange crop and has good potential for additional export amounts. Grades and a standardized product are one way to differentiate for quality and can lead to greater returns for growers of the better grades. The marketing sector is concentrated and would be easier to involve participants in development of standards. Because most of the crop moves into international markets this standard would be directly applicable to the domestic market. The British Standards Institution (BSI) methods and standards are recommended because most price information sources use these as a basis. Also these standards are presently in use in the markets traditionally thought to be accessible to Rwanda or because they are the standards of the potential market competitors.

## **1. Support and Funding for Standards Development**

The issue of financing the standard development program is difficult as financial support for services such as inspections for export products, certification, licensing, and laboratory services can be expected to be funded through fees. Standards development by government is not readily fee based so funds come from general appropriations and staff remains relatively small. Consideration for support of this function should be made either through the agribusiness development centers activities or through a training component of general agricultural crop development support.

---

## **SECTION IV. GRADES AND STANDARDS FOR MEAT AND DAIRY PRODUCTS**

---

### **A. Current Standards**

The current standards for milk processing, packaging and sale date back to Belgian Congo regulations of 1956 with updates to 1959. Since these dates no legislative amendments have been made.

Similarly, the current standards for meat slaughtering and inspection date back to regulations introduced in the Belgian Congo by the Government of the period. The ordinance was written in 1915 and updated periodically until September 1957.

The present Government made some amendments in November 1998 to the Import/Export regulations. This was a result of an Irish importation of calf heifers which led to permanent quarantine for the 65 animals and subsequent restriction of livestock from countries listed as having had confirmed cases of BSE from indigenously bred cattle.

Further changes were documented in December 1999 when a joint Rwandan and Ugandan Ministry of Agriculture delegation discussion was held in Kigali to make agreement in the area of fresh milk importation and an update of milk, meat and fish processed products. Agreement was made to restrict the importation of raw milk, meat and fish to packaged and processed products transported via an agreed cold chain standard of refrigerated vehicle or packed ice covered containers. This updated revision document does not constitute a legal standard. Apart from the above references, no change has been made and approved by Parliament since the documents of the 1915-57 administrations.

### **B. Improvements Underway**

The Ministries of Agriculture, Health and Commerce are working to improve the situation and have employed experts to assist them to revise current standards. The driving motivation behind this effort is to protect public health. In addition, recommendations to modernize grades and standards have been made by UNOPS, FAO and GTZ. The consensus has been that a Central Bureau of Standards is required with an approved Laboratory able to carry out testing procedures on routine sampling from premises of production and processing (dairies, slaughterhouses, meat plants, tanneries) and products for export qualification and environmental control.

Currently private laboratory testing facilities are being used for the few products that qualify for export. The three Ministries involved, all reported difficulties relating to financing and siting of such a national facility.

To date the OPROVIA Laboratory (fruit and vegetables), the Primus factory laboratory (water/beverages) and the National Veterinary Diagnostic Laboratory at Rubirizi (Meat and Milk products, and bacteriology) are being used in an uncoordinated manner to conduct laboratory tests.

There is a recognized need for coordinated agreement between the Ministries of Agriculture, Commerce and Health on the National Policy of the establishment of a Food Standards Bureau and accompanying Laboratory testing.

The continued use of the existing Rubirizi facilities for Meat and milk products and OPROVIA and other private laboratories such as BRALIRWA (for vegetables, fruits, beverages, processed foods) is a realistic option for the near term, as long as there is coordinated management and oversight of testing and enforcement procedures being made from one central Standards Bureau.

Milk and meat testing equipment is required to make the Rubirizi Laboratory fully operational. At present there are reagents and equipment for only basic bacteriology testing procedures.

A substantial central Laboratory for a Central Standards Bureau could be proposed to an International Donor or included as a component in a World Bank program. It is likely to be given a low priority under current budgetary constraints and compared with the greater needs for agricultural production, processing and export development to improve current rural incomes.

### **C. Areas for Continued Improvement**

The improvements needed for the grades and standards in the meat and dairy industries go far beyond the scope of the USAID project being designed by AAD. However, there are a number of concrete recommendations that resulted from the analysis. These are topical areas in which significant work needs to be done. Details as to what kinds of modifications need to be accomplished are provided in the attached Annex A: “Milk standards: a review and suggested upgrading”, and Annex B: “Meat standards: a review and suggested upgrading.” Among the suggestions made in these annexes are the following:

- Establish registration of slaughterhouses and hygiene inspection of on-farm slaughtering,
- Upgrade meat inspectors,
- Revise carcass classification,
- Require that all import and export of meat products be iced or in refrigerated vehicles,
- Establish a system of routine sampling and testing for bacteriology,
- Formalize the arrangement of ritual slaughter for Halal meat,
- Revise standards for bi-annual inspection of slaughterhouses and meat packing plants
- Revise minimum standards for milk
- Review the standards for raw milk sale
- Establish systems of licensing and testing of fresh milk selling points
- Upgrade standards for pasteurized milk
- Upgrade standards for boiled milk
- Upgrade descriptions of milk products

For the purposes of the USAID project, assistance to businesses in the meat and dairy industries should encourage conformance to international standards even if they have not been legislated in Rwanda. This will have obvious benefits for the quality and healthfulness of product sold in

country, but it will also prepare the way for these industries to more fully participate in international trade.

---

## SECTION V. HORTICULTURAL GRADES AND STANDARDS

---

### **A. Introduction**

The quality of meat and dairy products is critical because of the high risk of bacterial contamination. Horticultural products do not generally represent as high a risk. However, the international markets are just as demanding that horticultural products meet premium standards. Product that is deficient suffers tremendous price discounting in those markets.

Similarly, there is less urgency to legislate grades and standards for horticultural products than for meat and dairy products. Nevertheless, it is important that Rwanda meet or match the international standards if it expects to successfully participate in the global economy.

The work done for AAD reviewed the conditions of the horticulture industry and arrived at conclusions and recommendations that affect the nature of the project that will be implemented by USAID.

### **B. Current Standards**

As with the meat and dairy industry, there are few standards in Rwanda, and those that do exist are out of date. That is not to say standards do not exist, but they tend to be informal.

Traders in the market place do discriminate based on quality. Similarly, Rwandan consumers know good quality beans from bad quality. However, there are no defined standards that convey a specific meaning. For example, if someone offers to sell a quantity of US #1 potatoes, the buyer does not have to see the potatoes to know their size, cleanliness, and percentage of defects because those are all included in the definition of what constitutes US #1 potatoes. In Rwanda, if someone offers to sell good quality potatoes, the buyer is obligated to inspect them to see if the seller's definition of "good" corresponds to his own expectations.

The investigations related to this study found there was little understand of and no formal effort to comply with international standards. There is no adherence to ISO quality standards. There is no use of HACCP (hazard analyses critical control points). There is no adherence to international worker safety and sanitation protocols. There is no adherence to pesticide regulations. In the latter instance, this is not yet an overly serious condition because so few petrochemicals are in use.

In all practicality, the Rwandan horticultural market is operating without any system of codified grades and standards.

### **C. Recommendations for the Project**

The USAID project that results from the AAD effort should not directly work on changing the codification of grades and standards for the horticulture industry. Rather, it should use the

international standards as the basis for its assistance to Rwandan businesses. In the export market, grades and standards are already in place in the consuming countries. The international grades and standards are specified in the Codex Alimentarius, the EU Standards Guide, and USDA published regulations. These should be used to guide market transactions. Rwandan exporters need to know the specifics of these given standards so their products will be acceptable in European or other export markets. The focus of the project should be on insuring that Rwandan businesses, whether they produce for the internal or export markets, meet those standards.

More specifically, it is recommended that the project do the following:

- Obtain copies of the Codex Alimentarius, the EU Standards Guide, and the USDA publications on grades and standards. These should be maintained in the Agribusiness Center. Every effort should be made to disseminate this information, as it is relevant, to specific businesses. This information as well as other information suggested below, should also be made available to Rwandan government offices.
- Obtain copies of standards for packaging. As above, widely disseminate the information.
- Obtain samples of packaging for use in training and assisting local manufacturers to produce internationally acceptable packing materials.
- Obtain pictures and descriptions of product as expected in the international markets.
- Obtain examples of labels, and regulations for labels for specific markets.
- Obtain regulations relevant to the use of petrochemicals, for both the European and US markets.
- Work with laboratories to help them provide the appropriate testing services to support the horticulture industry (soils, pesticide residues, bacterial contamination, brix, etc.)
- Obtain and disseminate information on technologies available to help meet standards. This could include equipment and practices.
- Provide training on grades and standards. This might include importing samples of product, sending people to see international horticultural markets, and bringing in importers who can help show Rwandan businessmen how to meet regulatory requirements and market expectations.

---

## SECTION VI. ORGANIC CERTIFICATION

---

There is a relatively low use of manufactured inputs in Rwandan agriculture. This does provide an opportunity to engage in organic production. The study briefly looked at organic certification.

There is considerable interest in the production of organic products because of the high value placed on such products by affluent consumers. Organic production, however, does not mean production without inputs. Rather, the organic label on a product means it is produced and packaged with inputs and practices that meet given organic certification requirements. This certification is required for products to be sold as organic in European markets. Unfortunately, at the moment, there are different organic standards for different countries, including the United Kingdom Register of Organic Food Standards (UKROFS) and EC Regulation 2092/91. Certification can occur in several ways. One is to use the International Federation of Organic Agriculture Movement (IFOAM). Another is to seek certification from ECOCERT, the European Union certifying agency. Certification can cost \$4,000 or more, and requires periodic inspection and evaluation of the production and packing processes. Uncertified organic products are illegal to sell as organic, in many markets. An alternative is to label product as “pesticide free” or some other alternative that indicates the special efforts related to the production and handling of the product. These alternatives will not command the price differential allotted to certified organic product.

Quality organic product commands a price premium in the international markets. There is a reason for that. Successful production of organic products is generally more difficult than non-organic production. In general, the shorter the life cycle of the product, the more difficult organic production is. Short cycle products do not offer much leeway to responding to pest and disease pressure. In general the forward planning and the management of the crop is usually far more intense for organic crops than for their non-organic counterparts.

There are a number of disadvantages in Rwanda for organic production.

- Good organic farmers tend to be highly educated in the area of integrated pest management. That is totally lacking in Rwanda.
- The organic farmer typically has to have ready access to non-manufactured inputs. These are not generally available nor will they be easily accessible in the foreseeable future.
- Many organic farms rely, to a significant degree, on protection from disease and pests through isolation. In other words, produce the crop at a distance, or with barriers (rivers, forests, etc.) between the organic production and other producers. The pattern of cultivation in Rwanda makes that very difficult.
- Water control. Most high value horticulture needs a controlled and consistent water supply. For organic production, the cleanliness of the water takes on greater importance. Most growers in Rwanda do not have ready access to water supplies with these characteristics.

The crops that present the greatest opportunity for Rwanda for organic production are perennials. Coffee and tea are probably the two best choices.

It is recommended that the project obtain and disseminate information on organic production, and, except in highly specific cases, such as coffee, not enthusiastically promote its adoption. When it is recommended, the project should take special care to evaluate the management capability of the grower to insure it is of the highest standards. The grower should probably also have larger than average economic resources available to offset the larger risk associated with this type of agriculture.

---

## ANNEX A: MILK STANDARDS: A REVIEW AND SUGGESTED UPGRADING

---

### Rwanda: Milk Standards for production and Commercial Trading: An update from the 1911, 1918 and 1956 regulations for the Republic of Rwanda:

#### Recommendations are made in bold/italics with reference to The Codex Alimentarius International Food Standards:

- 1 a) Milk produced and available for processing or sale under Belgian Law should have a density of 1.028, butterfat minimum 2.7 %, and minimum dry matter of 10.7 %. There should be no mixing of milk products.

***Recommendation: Milk minimum density: 1.028; butterfat minimum: 3.6%. Both are too low in regard to present day genetics and Rwandan dairy production and consumer needs.***

- b) Farm milk must be whole (full cream milk)- sale outside the farm is allowed.

***Recommendation: MINAGRI should consider this current policy of raw milk sale versus pasteurized/sterilized milk in the urban areas- the availability of cheap, cooled milk from city/town milk coolers to a low purchasing power public against the guaranteed health safety for the general public in urban areas through the sale of processed milk in ½ and 1 liter packs at one and a half the price of raw milk.***

***A system of licensing and testing of the 18 milk Coolers in the Kigali PVK and Rural areas should be introduced by MINAGRI to the same standard of hygiene and milk quality as the registered processing dairies: reference standards page.***

- c) Standardized milk from registered dairies should have a fat guaranteed minimum of 30 grams per liter or 3% butterfat

***Recommendation: This should be raised to 3.5% minimum. The local breed Ankole milk is 4.5% plus; Holstein Friesian/Brown Swiss and Jersey re introduced bloodlines are in the 3.8-4.5 % butterfat range. The Friesian of the 1960's and before was low in butterfat and no record was made of Protein % in the milk. The protein content of milk is important for the processing of cheeses in particular. The minimum should be 3.0% protein but should not be introduced as a testing or standard minimum until other national testing procedures at present dairies are fully operational and efficient***

- d) Pasteurized milk should be heated to 63° C for a minimum of 5 minutes or 95° C for a minimum of 1 second to allow 'enough time' to destroy the pathogens. Maximum temperature after refrigeration should be 5 degrees C. Normally Laboratory tests should be completed.

***Recommendation: The timing of the pasteurization temperature process should be more specific and accurate. The 'normal' laboratory tests should be specified; such as at the minimum testing procedures for milk collection centers and processing Dairies. Milk color, odor, density tests, alcohol test/boiling test for acidity, boiling test for Sedimentation. At dairies- butterfat/Total solids %, Total Bacterial Count, Cell Count and antibiotic sensitivity tests.***

- e) Boiled Milk should be prepared by simmering at the boil for 5-40 minutes at 100 degrees minimum.

***Recommendation: Milk boils at less than the boiling temperature of water- a figure of 92-95 degrees C is more accurate. There is a need to promote efficient household boiling of milk for minimum of 10 minutes simmering at the boil, so as to kill the most harmful Zoonoses- Brucellosis and Tuberculosis. This could enhance the law and recommendations inclusive in this document by having a public advertising campaign.***

- f) Sterilized milk should be heated to a minimum temperature of 100 degrees C at a pressure of more than normal. (This corresponds to the Autoclave system- steam and high pressure water). The time should be sufficient to destroy all microorganisms.

***Recommendation: The steam pressure of the Autoclave machine should be specified.***

- g) Homogenized Milk: Milk treated mechanically in order to produce small globules (no fat separation on top of the milk) and to have dissolved fat globules and other elements.

- h) Conserved milk- obtained by evaporation (condensed milk) plus or minus evaporation temperature to obtain high or low concentration. The containers used should be small tins (sealed) without sterilization. Three categories:

- Condensed, Evaporated and Concentrated: must contain a minimum of 8 % butterfat,
- 28 % Milk Ingredients (total solids).
- Milk without sugar – Standards after bottling: 7.8 % Butterfat; 25.8 % Total solids.
- Skimmed Milk: Condensed with no sugar; 20 % Dry matter
- Skimmed milk with sugar: 20 % Dry matter as above
- Milk powder (dried milk) Dry matter 98 %; Minimum milk fat: 26 %. Obtained by the elimination of milk water.
- Skimmed milk powder (or skimmed dry powder); Maximum of 2 % butterfat.

obtained by the elimination of water.

- Skimmed milk and full milk (partial skimmed) 2- 2.5 % butterfat content.

i) Cream: -The product of separation by centrifugation or milk by 'slow boiling' (simmering.). A minimum of 20 % of butterfat.

- Whipping cream: 40 % butterfat
- Cream Dilutee (pouring/single cream): 4-20 % butterfat.
- Pasteurized Cream: In the pasteurization process of heat treatment of 65° C to 95° C during which time the microorganisms should be destroyed. Cooled and re refrigerated to a maximum temperature of 10 degrees Centigrade.

J) Skimmed milk: as a result of centrifugation- total or partial. Maximum of 0.27 % butterfat

K) Butterfat: It is the butyric-fat content in the milk extracted from cows' milk by mechanical means without adding other fats and treated in the same process outlined.

***Recommendation: Codex standard description: Butter is a fatty product derived exclusively from milk and/or milk products obtained from milk, principally in the form of an emulsion of the type water in oil.***

The butter cannot contain substances other than those coming from the produce/substance natural milk:

It may contain: Salt for cooking,  
ferment organic,  
Coloring (carotene, ROCU).  
Coloring must be insoluble- a solution of chloric acid or citric acid

### **Denominations of butter:**

**Special trademark butter:** 'Beurre de marque'- Butter made with particular care with cream coming from pasteurized milk and has properties to allow the product to be conserved for a long time.

***Recommendation: The term ' a long time' should be qualified. (The Codex standard to butter: codex standard A-1-1971,Rev.1-1999) at 5 degrees centigrade is 14 days; refrigerated at -0 ° C for 6 months.***

**Table butter** (dairy butter): Made from un-pasteurized cream

**Farm butter:** Made by a producer/farmer on his farm premises with un-pasteurized cream coming exclusively from his own cattle. There must be a minimum of 82% butyric fat. Salt may be added. Must have the appearance, smell and flavoring that is acceptable.

**Cooking butter:** All butter that does not answer to the conditions of the above-Special, Farm, Table and Farm butter- in terms of acidity, color, Salt content and organo lipids; Butyric fat less than 80 % and acidity 12.

**Milky butter:** All butter that is containing less than 80 % of butterfat.

**Beurre Fondu:** Processed butter – obtained by the melting process of butter extraction, water and other components of milk.

**Reconstituted Butter:** Reconstituted butter is made when reconstituting the fresh product, in order to reduce the degree of acidity. To achieve the correct taste or flavor it is submitted to manipulation where only milk, cream, water and salt is used; and in which presents the same composition as natural butter as defined at the letter L above.

#### **RECOMMENDATION: CODEX STANDARD FOR MILK FAT PRODUCTS: CODEX STAN A-2-**

1973,Rev.1-1999. Description of the milk fat products may be summarized as follows:

Anhydrous milk fat, Milk fat, anhydrous butter oil, and butter oil are fatty products derived exclusively from milk and/or products obtained from milk by means of processes which result in almost total removal of water and non-fat solids; Ghee is a product exclusively obtained from milk, cream or butter, by means of processes which result in almost total removal of water and non-fat solids, with an especially developed flour and physical structure.

- m) **Butter milk:** buttermilk product is stored in the form of butter removal and the resulting definitive butter milk, before washing and the application of rock Salt. It must have a minimum of 8 % dry matter for milk, casein, lactose and minerals/salts.

**Recommendation:** *Reference Codex Standard for butter in appendix 1 for recommended composition, permitted ingredients, Food additives, contaminants (heavy metals), pesticide levels and hygiene.*

**Labeling:** *In addition to the provisions of the Codex general Standards for Labeling and Prepackaged foods and the General Standards for the use of Dairy Terms, the following specific provisions apply:*

**Name of Food:** *The name of the food shall be 'butter'. The name 'butter' with a*

*suitable qualification shall be used for butter with more than 95% fat.*

*Butter may be labeled to indicate whether it is salted or unsalted according to national legislation.*

*Declaration of Milk fat.*

*Labeling of Non-retail containers.*

*Methods of sampling and analysis: see codex Alimentarius, Volume 13.*

- n) Cheese: Definition: The fermented product or not, obtained by the renneting process, or acidification of full milk, with or without the addition of skimmed or full cream or acidified milk.

In the production process the product is not treated in any way with an organic Ferment, addition of cooking salt, coloring or ingredients with offensive additives. There may be a film of plastic for sealing, protection and packaging of the cheese, no bread crumbs but bacterial crusts may be used- *Penicillium Roquefort* for the production of Roquefort cheese.

**Fatty cheese and half fat cheeses:** The in the dry matter is not less than 45% (fromage crème-Gouda cheese), 35% (Fromage gras) and 20% (Fromage demi-gras) This will include the production of 'whey' as a residue after the extraction of butterfat and casein.

**Recommendation:** *The definition for hard and soft cheeses may be followed in the Codex Standards for Cheese; codex standard A-6-1978, Rev.1-1999. No 2 'description may be used for the Rwandan document for Cheese standards.*

## **2. The denomination of Fat constituents:**

The mixture of butters for all categories for article one: with other fats, oils, together with oil and water, or copra 'butter', Palm oil, sunflower and others.

**Les Gras (Edible fats):** Use of fats should be nominated and the name of the margarine or with a denomination and indication of the nature of the raw material used for the production of edible fats.

3. It is forbidden to import, to make, to prepare to sell, to sell, to propose and to display for sale, to have/possess or transport for sale. -

- All products and by-products coming from the dairy industry for human consumption if the name of the product is not the same as outlined in article one.

## **Minimum Standards for discussion for premises checks and raw milk collection**

1. Dairy Premises check for hygienic production: Floors, walls, windows, doors, equipment, Production and packing equipment, cold storage hygiene: HACCP score: reference Appendix 7.

2. Personnel personal hygiene- clothing/overalls/hand washing facilities.
3. Washing down routine and disinfections of premises routine: Regular dairy washing following each operation with recognised disinfectant: Minimum 5 times per day for operational dairy.
4. Health and Safety routine: Qualification of one staff member in first aid, protected and guarded equipment with moving parts.
5. Display of current license and employees.
6. Record of origin and traceability of milk collected.

### **Minimum Routine Sampling:**

All registered Processing dairies, Milk Collection Centres and Kigali Milk Tanks should test their receiving milk for the minimum base tests listed below:

Random tests should be made at least once per week with samples taken daily by a qualified technician from Rubirizi/Rubirizi Laboratory. These tests could be started immediately following approval by MINAGRI and the Government legislature through an approved commercial laboratory facility, using coded sample identification (ABCD etc) for confidentiality.

1. Date received
2. Farm/origin of milk
3. Receiving Dairy
4. Density of milk sample:

Lactometer Test for presence of water/additives: appendix 8 for test details  
Minimum limit: 1.026

5. Acidity of the Milk sample:

The PH test determines the acidity of the milk and therefore the lower the reading the more acid and the unstable for souring and clotting at heating. This test may be confirmed by the Dominic Acidity test, but only the former is necessary and cost effective. Minimum Limit: PH 6.6

6. Butterfat test:

There are two volumetric methods for testing the butterfat content of milk, namely the Gerber and the Babcock tests. The Gerber test is most often used and easy to operate: The Gerber test uses the Butyrometer, which gives graduated readings of butterfat % available within 10 minutes.

Minimum Limit: 3.6 % butterfat.

#### 7. Bacteriological Tests:

There are a number of bacteriological tests available mainly involving dye reduction.

For example:

#### **The Resazurin test (RRM)**

<i>Qualification of the milk</i>	<i>Lavender colour reached</i>
Bad	In one hour or less
Poor	Between one and two hours
Good	Between two and three hours
Excellent	After three hours

Other Bacteriological tests include:

- The Methylene blue reduction test (MBR),
- The Standard Plate count.
- The Psychrotrophic bacteria Count
- Thermophilic Count
- Coliform Count

The Resurazin reduction test and the Standard Plate Count are the ones currently being used by dairies in Rwanda- Nyange and Rubirizi private dairies.

Minimum Standard:

Excellent and Good = < 500,000 cells/ml on the RRM  
Less than < 500,000 cells/ml on the Standard Plate Test.

This basic minimum will ensure safety of milk products and processing techniques. The standard set for year 2000 should be reduced over a 2-3 year period with improved equipment, management and animal husbandry techniques.

***European Union Standards/ Codex for Milk Quality is graduated according to TBC with penalty payment per litre over 250,000 cells/ml with Milk Board (Farm Cooperative) laboratory visit to investigate the problem and to advise on improvements. 85% of TBC hygiene high cell counts are as a result of poor dairy equipment hygiene- lack of dairy acid/hypochlorite cleaner and insufficient temperature during hot washing of the system.***

European Union Standard:

*(Each member Country has its own Incentive payment scheme)*

< 50,000 cells per ml	Additional payment Incentive A Top quality.
50-100,000 cells per ml	Additional payment Incentive B
100-250,000 cells per ml	Standard Payment-No Incentive C
250-400,000 cells per ml	Penalty payment 1
> 400,000 cells per ml	Cooperative Check- possible loss of license.

#### 8. Temperature Check:

Milk should be reduced from 32 oC at the farm to less than 5 oC within a maximum of 2 hours from the end of production.

The section of his document entitled 'Cold Chain' will write in detail the recommendations for cold storage requirements from the producer to the consumer.

#### 9. The Antibiotics Test:

In Rwanda there is easy access to antibiotics across the shop counter for treatment of tick borne diseases and general routine veterinary treatments. Penicillin and oxytetracycline based formulations are widespread.

Basic testing procedures need to regulate to ensure public health protection and clean milk for yoghurt and cheese processing.

Inyange Dairy is the only one with an antibiotic testing procedure based on an agar medium inoculated with a microorganism and using a Standard Plate technique.

Maximum accepted limit detectable: 0.008 Units per ml.  
European Union /Codex maximum is 0.001 Units per ml.

#### 10. A list of other reference tests that will be relevant in the future:

**Protein Testing:** EU payment to farmers per litre is weighted toward Protein percentage and grams of protein per kg of milk. This is particularly relevant to cheese production for selection of high protein casein content milk.

**Somatic Cell Count:** Milk from animals suffering from mastitis usually shows a number of abnormalities such as a high catalase activity, a high somatic cell count, and increased chloride content and lowered lactose content. The somatic white blood cells rush to the site of infection and use up the energy available causing the said symptoms.

European Union Dairies give incentive payments and penalties for Somatic Cell Count levels. (Cells per ml). Bulk milk samples are taken from the farmer/processor daily and random tests made twice weekly. Farmers/dairies can be notified by fax or e-mail.

Monthly milk recording is made by the Registered breeders (65% Of commercial dairy farmers in Germany, 45% in the UK) for individual cow performance for yield, butterfat and protein, including TBC and SCC, Somatic Cell Counts. Persistent high cell count offenders can be identified for culling. Penalties for Milk with > 250,000 cell/ml, license withdrawal for 400,000 cells/ml or over on 3 consecutive tests.

Tests that assist the detection of clinical mastitis in the field are the Catalase test and the California Mastitis test. The latter is being used on a few commercial farms in the Kigali Prefecture.

Physico-chemical tests for the presence of additives: The Sediment Test, the Flavour (milk taint) test, Phosphatase test, Storch's peroxidase test, Titratable acidity and Oxidates and Pesticide residue tests

Routine Brucellosis testing:

The Milk ring test has made it possible to test bulk milk samples in the European Union on a weekly basis to alert endemic areas of infection. This is possible because of a non-vaccination policy (unmarked vaccines mask the tests and give regular positive results, without clinical infection) and routine culling and compensation of reactors. The department of Livestock Services has no current vaccination programme for Brucellosis in the dairy herd. Milk tests could be done over a trial period to assess the level of infection in the urban supply herds for later policy decisions.

### **Summary of tests:**

Tests 1-9 are recommended to be introduced for Processing Dairies, Farmer Milk collection Centres (a,b,c) and Urban Milk tanks for fresh refrigerated milk sale. After an annual inspection has been made and milk samples taken weekly for the first month of random tests are found to be within the minimum standards, a license for processing and sale can be issued. This may be withdrawn if milk quality and hygiene fall below standard over 3 consecutive tests. The enforcement detail to be completed by the MINAGRI Directorate of Livestock Services.

For the testing of individual farmers milk (d)- this will be the responsibility of the Processing Dairies, collection Centres and Milk tanks sale owners to ensure collection and registration of clean milk producers. (For example- procedures at Nyabisindu, Nyange and Rubirizi Dairies.)

MINAGRI will continue to provide extension advice on good animal husbandry practices and organisation of farmers into Milk Associations for future improvement of rural milk collection. For example – the provision or access to credit to obtain Milk cooling tanks at reception centres.

Rubirizi National Diagnostic Veterinary Laboratory will need financial assistance above the provision of diagnostic equipment for National disease control, to provide the basic testing facilities for tests 1-9 and the minimum meat bacteriology tests outlined in the next chapter on Meat standards.

In the short term the testing of samples can be carried out by MINAGRI at a private laboratory. Inyange dairy has a well-equipped Laboratory

**Cost recovery:**

The cost of routine weekly random testing (interval to be decided by MINAGRI) to be quoted and a registration and license fee issued each year to cover the testing procedures. 50,000 FRW per Dairy per year for annual inspection and sample collection/lab fees.

In the medium term (5-7 years) a system of milk recording (milk control: NMR: National Milk Records) can be introduced to officially record individual farmers cow performance for yield, milk quality, hygienic quality and to coordinate herd book registrations, cattle identification and traceability.

The Individual reports (page) on the Dairy premises visited during this consultancy give a baseline to the Hygienic Standards to be introduced by MINAGRI in the near future.

---

## ANNEX B: MEAT STANDARDS: REVIEW AND SUGGESTIONS FOR REVISION

---

### **Recommendations made in bold italics with reference to Codex Alimentarius International Food Standards.**

1. Anyone wanting to commence commercial Butchery in the Belgian Congo Rwanda must first send to The Ministry of Agriculture, the licensing Authority, a declaration giving the exact location- the street, building number and the exact plan of the premises where the butchery is to be developed. The declaration should be renewed if the premises or owner are changed.

***Recommendation: The permission for premises registration should refer only to the Republic of Rwanda.***

2. Any person (other than those mentioned in article one) who wants to slaughter or get slaughtered, to cut or to get cut, one or several animals from which the resulting meat is intended for the human diet, should previously inform the local authority or delegated agent for this mission giving the time, day, place and hour where the slaughter and cutting are to take place.

***Recommendation: MINAGRI should decide on the policy of Central or registered Slaughterhouse slaughter compared with the continuation of On-farm slaughter with Veterinary check/stamp of approval for human consumption. The dual systems of abattoir and on farm slaughter are practiced at present and is satisfactory with routine hygiene checks being made to qualify for a registration license. Reference Codex Alimentarius record for meat slaughtering.***

This notice of the place of slaughter will be given to the local authority for approval. This notice will be given in a minimum of 6 hours before the hour indicated for slaughter. When slaughter will be done before 8.00 am, the notice should be given the day before – the latest time of 6.00 pm

Persons who have declared, according to article one, should inform the local authority or agent delegated/contracted of all slaughter and cutting activities not less than 2 hours before the slaughter/cutting operation. If this is planned before 8am, the notice should be given the day before by 5.00 pm.

3. Prescriptions of article 2 are applicable to all domestic animals of Bovine, Ovine, Caprine, Porcine, and equine breeds as well as all wild animals coming into the category of big game.

4. In localities where slaughtering is done daily or frequently, the territorial authority can determine the hour during which regular slaughters can be made without notice, in places declared in article one. All slaughtering made out of hours indicated should be announced according to article 2 prescriptions.

5. Territory Authority should stipulate all measures where useful for the interest of Public health. Such as :Indicating places suitable for slaughter, paving and cleaning with adequate water for these places after each slaughter, burying viscera and waste.

***Recommendation: The document needs to more specific in the detail of minimum requirements for rural and urban slaughterhouses: reference Codex standards for Slaughterhouses.***

6. In the locality where the public slaughterhouse is to be installed, the slaughtering outside of this establishment will be generally forbidden. The Territorial authority should in exceptional circumstances, authorize the slaughtering of Bovine, Porcine and Ovine/Caprine outside the slaughterhouse. The District Commission will control public slaughterhouses services

***Recommendation: For national and regional meat supply chains; the slaughtering of meats at the Abattoir and on farm should be permitted with the enforcement of biannual checks listed on page...***

### **B Meat Inspection:**

7. All meat from slaughtered animals inside the locality, as well as imported meat, fish, tinned, either Salted, smoked, refrigerated or other manner of preparation. Exceptions are of products canned in metallic tins hermetically weld sealed and are submitted to a sanitary control visit.

They are also submitted to that control- meat tinned as said below, prepared at the same place.

8. Every animal, belonging to breeds mentioned in article 3 and devoted to diet, will be examined by an expert inspector, at least 2 hours after the slaughter. The inspector can ask to see animal before slaughter. While waiting for arrival of the inspector, thoracic viscera should be maintained in place attached to one of the fore quarter of the slaughtered animal. A minimum of a quarter of a liter of blood will be sampled for checking, if the inspector feels it necessary.

***Recommendation: Meat inspectors in the Prefectures and Communes are under the control and training of the Directorate of Livestock Services. The level of competence of the inspectors is very low and needs an immediate training and equipping project so as to improve hygienic standards at all levels .BCK and the Slaughterhouse of Nyabugogo are currently having courses for 20 meat preparation staff with 2 top Master Butchers from Germany. MINAGRI should seek funds from donors for a 3-day course for meat inspectors- a project proposal may be passed to USAID for possible credit.***

Fresh meat imported in the locality will be submitted to inspection within 2 hours after their arrival.

Parties not devoted to be sold will be buried by the care of the butcher or of the cutting man, in the place indicated by the territorial authority.

9. Every meat from animals slaughtered on site, every imported fresh meat sold one day after slaughtering or sold at the importation moment, should be submitted to veterinary inspection before being sold.

10. When the meat is accepted as edible, the expert will decide if it belongs to the first or to the second quality. After his checking, he will affix on quarters a number of stamps appropriate and these will have circular shape for the first quality and triangular shape for the second quality.

The territorial authority can also ask to affix on meat a date-stamp indicating the day of the slaughter.

***Recommendation: The system of carcass classification requires further thought to ensure a more detailed assessment of conformation and fat cover of the carcass. The Codex recommendation for classification and the EU/MAFF grade system will give some ideas for future extension and improvement of the current 2 grades.***

11. If inspection reveals that the animal is unfit for human consumption, either partially or totally, the inspector will forbid the selling of the whole or the part of animal affected and will destroy them.

He will ask, in his presence, to destroy the sealed meat by the care of the butcher, slaughter man or the cutter man. He should request local police to assist him in the surveillance of this operation.

The expert will justify his decision in a well-founded report addressed immediately to the district commissioner through the local authority.

12. The expert inspectors or the persons designed by the district commissioner according to the article 8, can always visit paddocks in which animals stays and make a check.

Imported animals will be checked at their arrival in country. The importer will inform the territorial authority in due time for the expert can be present before the arrival of the animal in the locality. The importer will receive after checking a permit indicating the date, the species, and the number of animals introduced as well as their origin.

13. The expert inspectors will survey specially the selling of poultry as well as animals devoted to diet, non-including those identified in the article 3. They will seal and make buried all pieces considered as unfit for the human consumption as stipulated in the article 11.

14. Every person who wishes to import fresh meat, refrigerated, frozen, salted, dried or smoked, other than preparations of meat called “charcuterie”, meat and meat preparations tinned in devices hermetically closed, is obliged to request an importation permit from the provincial chief or from his delegated agent.

The request will mention the origin of the meat, its category, the name and the address of the expeditor and of the consignee of merchandise, the quantity to be imported and, eventually, the process used for its conservation.

Imported meat, other than those concerned by the exception stipulated in the first paragraph above as well as those called “of game”, must come from animals slaughtered in slaughter houses under direct control of a sanitary authority. Every quarter of meat imported will present, either on the meat itself, or leaden on it, the stamp of the meat inspection of the slaughterhouse at the origin as well as the date of the slaughtering of the animal.

The importer must immediately inform the meat inspector for the arrival at destination of the meat concerned above as well as the game meat; the meat inspector will check the meat as soon as possible and at least 2 hours after the arrival of the meat; he will affix a stamp on each quarter of the meat. [...]

The experts and the persons specially appointed will work as indicated in the article and will report on infractions when occurred

***Recommendation: All meats and fish products listed above should be imported/exported only in refrigerated vehicles or in cases packed and layered with ice. The ice factory at BRALIRWA has sufficient production- 5 tonnes per day for 20kg blocks to be crushed and used for layers.***

15. Taking into account the uncertainty of a good conservation, the products indicated at the article 14 (including those imported from Belgium) will still submitted to the surveillance and to the permanent veterinary inspection in premises, shops, public or private warehouses, on ships and boats where they have been placed for selling or for feeding. Are submitted to this inspection, the establishments where are prepared the meat indicated in the last paragraph of the article 7, as well as any other premises where these meat are stocked later on.

16. The meat indicated in articles 14 and 15 above will be sampled to be submitted to chemists or to veterinarians in order to make checking or microscopic analysis on their actual state, as well as on utilization of non tolerated antiseptics.

Judicial Service will pay by financial Service, or the amount of the sampling when there is condemnation.

A statement of the sampling will be established with a copy to the concerned person and the other given to the director of the laboratory and to the veterinary of the locality. These last ones will submit the case when there is contravention.

17. Are declared harmful, by application of the article 2 of the Decree of July 26, 1910:

1. Any meat preserved with harmful or dangerous substances, notably with formic aldehyde, sulfurous acid, boric acid or borax. However, the use of these last two products is tolerated to the periphery of the natural salt meats, because of scratching and washings of which these are the object;
2. Meats and salt meats tampered by the presence of microorganisms or any other parasite in general or ammonia compounds.

***Recommendation should be made here of routine sample taking and testing for bacteriology at the Rubirizi Laboratory: reference Codex recommended tests.***

18. The introduction as well as the debit of products indicated at the article 17 are forbidden.

19. It is prohibited from detaining meats either prepared derivative of meats, not devoted to the feeding (and notably those indicated at the article 17), in stores, boutiques, deposits and any places allocated to the sale, to the detention and the food commodity preparation, devoted to be sold or to be delivered, as well as in the premises communicating with those indicated above, otherwise than by the public way.

## **About the veterinarian inspectors**

20. The infraction of meats, fresh or preserved, will be made preferably by veterinary surgeons. [...] If these aren't available, all doctor in medicine and anyone who will be able to justify sufficient knowledge, after an exam, will be able to be commissioned, by the governor of province in quality of experts inspectors on proposal of the chief of zootechnic and epizootic section of and under the responsibility of this last one.
21. The program of the exam to undergo by candidates expert-inspectors of meats as well as the composition of juries will be determined administratively by the province governors in agreement with the veterinary authority.
22. Expert-inspectors commissioned by governors of province are officers of judicial police. Their material scope of activities includes all matters foreseen in the present order. Their territorial scope of activities includes the locality where they exercise their functions.
23. Infractions of the present order will be punished by penalties provided for in the decree of July 26, 1910, about food commodities.
24. All contrary arrangements to the present order are abrogated.

### **3 MARCH 1937: ORDER N° 30/AGRI. SLAUGHTERING AND TRANSPORT OF ANIMALS**

1. Apart from cases of emergency slaughtering, due to accident or illness, it is prohibited from bleeding animals for slaughter without having stunned them previously.
2. The stunning of cattle and horses will be achieved by mechanical devices producing the instantaneous insensibility by penetration of a projectile or a mandrel with limited course into the cranium. The mass or the axe won't be used only by people possessing strength and the dexterity needed, known as such by the direction of slaughterhouses or by the meat inspection Service.

The small animals, pigs, calves, sheep, goats, will either be stunned by a suitable device or by knocking out with a mass stroke applied on the forehead. The bleeding will be done immediately after the stunning of the animal. Animals that must be stunned by knocking out will be fixed and will be maintained in an appropriate way.

The so-called method of nerve cutting or neck blowing can also be used.

The governor of province will be able to fix the method of slaughtering to be used to the exclusion of any other one in localities that he will determine. The arrangements above don't apply to the ritual slaughtering.

***Recommendation: The arrangements for ritual slaughter for Halal meats should be formulated***

3. Unless there is illness or accident occurred suddenly, it is prohibited from slaughtering animals on the public place or in places exposed to the sight of the public.

4. Animals sheltered in slaughterhouses while waiting for their slaughtering will be fed and will be watered at least once every twenty-four hours. It is defended to water veal with excess drink and to feed them or give them drinks by force in view to increase their weight.
5. Animals affected by a serious lameness, preventing the standing on a member, must be transported by vehicle.
6. The loading on vehicle and the discharge of big species animals will be made using ramps appropriately fixed and adjusted in such way to prevent slips.
7. The big animals will be: either attached on vehicles in such way to be able to remain standing in a natural position, or without tethers; the small animals carried as the big animals let without tether must have sufficient place to be able to lie down. It is forbidden to maintain members hindered during the transport.
8. It is forbidden to load animals in vehicles that cannot be aired appropriately.
9. Is forbidden the loading of animals either affected by serious wounds, or apparently serious either presenting signs of deterioration of their health.
10. It is prohibited from loading in the same vehicle big and the small animals without an appropriate separation established between the two categories of animals.
11. The flooring of vehicles allocated to the transport of animals will be, to prevent slips, adjusted in such special way either covered with ashes, sawdust of wood or another suitable substance.
12. When the journey must last more than thirty-six hours, the owner of animals is held to assure their drinking during the journey.
13. The maximum loading of a 9 meters long wagon won't exceed 14 adult cattle or 28 veal or 432 pigs or 65 sheep and goats.
14. Prescriptions of articles 1st to 4 inclusively are applicable only to public slaughterhouses and in the urban circumscriptions, except for the indigenous townships.  
  
Prescriptions of articles 6 to 13 inclusively are applicable only to the public transports.
15. All infraction to the present order will be punished by seven days of penal servitude to the maximum and by a penalty that won't pass 100 francs, or by one of these penalties only, without prejudice of the application of clauses of the Decree of December 27, 1934.

**16 July 1934: O.R.U. n° 40/Vét.**

**Slaughtering of livestock, infraction of meat devoted to the feeding and related remunerative taxes**

1. In localities where there is no a public slaughterhouse the slaughtering and the cutting of the big and the small animals will take place only in this establishment.
2. By derogation to the article 1st, the territorial administrator will be able, on advice of the veterinary of the sector, to allow slaughtering and the cutting of the big and the small animals outside of the public slaughterhouse, in a private installation, agreed by the veterinary aforementioned.
3. Meats coming of animals slaughtered in places where the infraction of meats was prescribed by the Resident on advice of the veterinary of the sector won't be sold or retailed before they have been checked and recognized appropriate to the consumption. This infraction will be carried on meats coming of cattle, sheep, pigs and goats.
4. Slaughtering in a public slaughterhouse where the inspection of meats has been prescribed, implies payment of the following taxes:

For a beef, bullock, bull, young bull, cow, heifer, horse..... 100 F  
 For a veal or a pork..... 60 F  
 For a sheep, lamb, goat, kid, young pig ..... 30 F

5. In localities where exists a public slaughterhouse, the infraction of meats coming of animals slaughtered outside of these establishments on authorization of the territorial administrator and the infraction of meats imported in these localities, will imply perception of equal infraction taxes to those paid for slaughtering foreseen to the article 4.

6. No one is authorized to slaughter livestock, nor to retail fresh meat on a public or indigenous market without having acquitted previously the amount of remunerative taxes that are fixed as follows:

for a beef, bullock, bull, young bull, cow, heifer, horse..... 50 F  
 for a veal or a pork..... 30 F  
 for a sheep, lamb, goat, kid, young pig..... 15 F

This tax is not owed if slaughtering took place in a public slaughterhouse and if the tax of slaughtering has been acquitted.

7. The expertise of meats coming of animals slaughtered in a public slaughterhouse where the tax of slaughtering has been collected will be free.

8. In the private slaughterhouses situated outside of localities where exists a public slaughterhouse, the expertise of meats, if for this one has been requested by owners or if it has been prescribed by the Resident on opinion of the veterinary of the sector in virtue of the above article 3, will imply the payment of remunerative taxes equal to those fixed by the article 4 of the present order.

Traveling expenses are payable by the private slaughterhouse and will be calculated in on the basis of the kilometer rate for agents of the Government.

Taxes foreseen at the present article will be paid at the end of every month to the accountant of the territory according to a report established by the expert of meats on expenses of the last month.

9. Orders n° 31/Fin. of April 29, 1931 and n° 217 of August 30, 1924 of the Governor of Rwanda - Urundi are abrogated.

10. The present Order will produce its effects August first, 1943.

## **2 AUGUST 1957: ORDER N° 55/231**

### **Remunerative tax of sanitary inspection on imported meats, fish, mollusks, crustaceans, farmyard birds and game.**

1. It is decided a remunerative tax of veterinary inspection of 1 franc by kilogram of meat imported, fresh, refrigerated, frozen, preserved either prepared by salting, smoking, drying or by any other way, of imported fish, fresh, refrigerated, dried, salted either by any other way, of imported mollusks, crustaceans, farmyard birds and game.

Remunerative tax isn't applicable to animal origin commodities so-called "preserves" enclosed in containers tightly sealed and not passing a weight of 5 kilograms.

2. Remunerative tax is owed to the inspection. It is paid to employees of the veterinary stations on border.

3. Prescriptions of the penultimate paragraph of the article 14 of the order of February 13, 1915 as modified up today are abrogated.

## **LOCAL MEASURES**

### **25 MAY 1938: R.R.R N° 7**

Slaughtering of livestock and inspection of meats to Kigali

1. In the urban circumscription of Kigali, it is prohibited from slaughtering the big or the small animals outside of the public slaughterhouse.

However, the territorial administrator will be able, sometimes, to allow the slaughtering of pigs, sheep or goats outside of the slaughterhouse.

2. Butchers, hoteliers and, in general, all people that produce meat are held to present animals on the hoof to the veterinary inspection, in the evening at 17 hours, at the slaughterhouse.

Slaughtering will be achieved the day following the inspection of animals on hoof, from 15 hours.

3. After slaughtering, the local will be washed by a lot of water. No edible viscera and residues will be buried or incinerated.

4. All the meat and viscera coming from the slaughtered animals will be submitted to the veterinary inspection, at 17 o'clock.

5. After the veterinary inspection, meats and viscera recognized appropriate to the consumption must be immediately removed and stored in the cold room of the slaughterhouse or of the butchery of the market.

Organs of digestion (stomach, intestines) won't be introduced in the cold rooms unless they are in a perfect cleanliness state.

6. If the inspection reveals that an animal is not appropriate to the consumption, either completely, either partially, the veterinary will forbid the sale of the whole animal or the one of the part judged inappropriate and will seize them.

He will make to proceed, in his presence, by the personnel of the slaughterhouse, to the incineration or the burying of the meat seized.

He will be able to require the local police to attend him in the surveillance of this operation.

The veterinary will justify his decision by a motivated report that he will immediately address to the Resident.

7. The veterinary will be able, in all time, to visit enclosures where livestock is parked and to proceed to the inspection of animals. He also has access, in all time, in the local where one prepares meat for the sale.

8. No meat will be released be get out of he slaughterhouse, to be sold or to be lay in sale if it doesn't carry stamps justifying of the sanitary visit.

***Recommendation: The system of stamps for passed carcasses should be reviewed so that more are available to more vets/I***

Meats will be stamped on pieces below:

1. muscles of the neck;
2. forearm;
3. shoulders;
4. back;
5. loins;
6. coasts;
7. thighs (external and internal face);
8. legs;
9. the two lungs;
10. the liver.

9. The entrance of the slaughterhouse is strictly forbidden for all people other than those who are called there for work.

10. The veterinary, in case of absence or major obstacle, will be replaced in activities mentioned above by the physician director of the hospital.

11. [Abrogated]

12. Infractions to the present regulation will be punished with one to seven days of penal servitude and with a penalty that won't pass 200 francs, or with one of the two penalties only, without prejudice, if the case arises, of all damages and interests.

13. The present regulation will bring in force from June 1st, 1938.

**25 November 1939: R.R.R. n° 2/S.V.: Slaughtering of livestock and inspection of meats to ASTRIDA**

1. Butchers - hoteliers and in general all people that produce meat are held to present previously living animals to the veterinary inspection.

Slaughtering, if it is allowed by the veterinary, will be done the following day from the inspection of the living animals.

2. The local where will take place slaughtering will be held in constant state of cleanliness. Viscera no edible and residues will be buried or incinerated.

3. All the meat and viscera coming from the slaughtered animals will be submitted to the veterinary inspection.

4. If the inspection reveals that an animal is not appropriate to the consumption, either completely, either partially, the veterinary will forbid the sale of the whole animal or the one of the part judged no appropriate and will seize them.

He will make to proceed, in his presence, by the personnel of the slaughterhouse, to the incineration or the burying of the meat seized.

He will be able to require the local police to attend him in the surveillance of this operation.

The veterinary will justify his decision by a motivated report that he will address by first mail to the Resident.

5. The veterinary will be able, in all time, to visit enclosures where livestock is parked and to proceed to the inspection of animals. He also has access, in all time, in the local where one prepares meat for the sale.

6. No meat won't be get out of the slaughterhouse, to be sold or to be lay in sale if it doesn't carry stamps justifying of the sanitary visit.

Meats will be stamped on pieces below:

1. muscles of the neck;
2. forearm;
3. shoulders;
4. back;

5. loins;
6. coasts;
7. thighs (external and internal face);
8. legs;
9. the two lungs;
10. the liver.

7. The veterinary, in case of absence or major obstacle, will be replaced in activities mentioned above by the physician of the Astrida laboratory.

8. Infractions to the present regulation will be punished with one to seven days of penal servitude and with a penalty that won't pass 200 francs, or with one of the two penalties only, without prejudice, if the case arises, of all damages and interests.

9. The present regulation will bring in force from January 1st, 1940.

**3 December 1948 / R.R.R. n° 6/S.V.: Slaughtering of livestock, inspection, transport and debit of meats to KISENYI**

1. In limits of the urban circumscription of Kisenyi, except special derogation foreseen at the article 2 of the order n° 40/Vét. of July 16, 1943, it is forbidden to slaughter the big or the small livestock outside of the public slaughterhouse.

2. In the determined limits at the article 1st of the present decision, whoever has the intention to either slaughter or to make slaughter the big or the small livestock, is held to present previously animals alive to the inspection of the veterinary director of the slaughterhouse or his delegate, at hours fixed for slaughtering.

3. If, according to a special derogation foreseen at the article 2 of the order n° 40/Vét. of July 16, 1943, the authorization to slaughter outside of the slaughterhouse has been granted, interested people who has the intention to proceed to a slaughtering of livestock should warn the veterinary physician director of the slaughterhouse or his delegate, at least 12 hours before the one foreseen for the mentioned operation.

4. In the case where, as result of accident or all other circumstance, it is necessary to proceed, in view of the consumption, to the slaughtering of an animal strips eviscerated will be transported to the slaughterhouse in view of the sanitary inspection and the stamping. The animal will be brought entirely, accompanied with all its giblets; skin, lungs, the liver and loins will remain adhesive to the remains by at least a point of their natural bonds.

5. Meats coming from animals slaughtered outside of the limits definite at the article 1st above will not be prepared inside of these limits without have been previously submitted to the veterinary inspection and have received justifying stamps.

6. The veterinary director of the slaughterhouse is charged of the meat inspection. In case of absence or major obstacle, he will be replaced by a member of the veterinary personnel he will have designated or by the physician of the station.

7. Following the inspection of meats, if these are recognized appropriate to the feeding, the expert - inspector will affix stamps of the sanitary visit on organs and tissues according to the legislation on the inspection of meats. It will be made by using a round seal for meats of first quality and a square seal for those of second quality.

8. No meat won't be get out the slaughterhouse, to be sold or to lay in sale if it doesn't carry, with a very obvious manner, stamps justifying the veterinary inspection. Giblets cannot be get out the slaughterhouse before the inspection.

9. Transport of meats (whole animal, half-animal, quarters) should be done in conditions of perfect cleanliness. They will be subtracted from the sight of the public, rain, dust, mud and flies.

10. Infractions to the present regulation will be punished with one to seven days of penal servitude and with a penalty that won't pass 200 francs, or with one of the two penalties only.

### **TRANSPORT AND TRADE OF MEATS: GENERAL MEASURES**

#### **17 December 1938: Order n° 176/Agri. : Transported meat protection**

1. The transport of fresh, refrigerated or frozen meat, devoted to the feeding, must be done so that meats are hidden from public sight and appropriately protected from sun, rain, dust, mud and flies.

2. Infractions to the present order will be punished with penalties foreseen at article 17 of the Decree of July 19, 1926 on hygiene and public healthiness.

#### **22 JULY 1953: ORDER N° 74/241 : TRANSPORT AND TRADE OF MEATS IN THE URBAN CIRCUMSCRIPTIONS**

1. Prescriptions of the present order apply to establishments of meat trade situated in cities, circumscriptions urban and localities designated by the governor of province; those of these prescriptions that are linked to the transport of meats are applicable also to enterprises of transport, but only for transports made in cities, the urban circumscriptions and localities above mentioned.

Meat trade establishment, means, to the sense of the present order, all installation where is implemented the cutting, carving or selling of fresh, refrigerated, frozen or prepared meat.

Are excluded however from the application of the present order trades in which following practices are found:

1° the sale without manipulation of meats cut-up, wrapped and maintained refrigerated;  
2° incidentally the sale of meats prepared, salty or smoked. (The O.R.U. n° 771/15 of the 14.1.1959 indicated that localities where to apply the present orders are: Kigali, Butare, Ruhengeri, Gisenyi and Cyangugu).

2. The transport by vehicle of fresh, refrigerated frozen or no wrapped meat will be made in closed vans, distinct of the driver's cabin, internally coated with galvanized brass or with any other rustproof matter.

The van will be provided at its superior part with rails, intended to facilitate the manipulation of meat; besides, its interior disposition should permit the daily cleaning of it with water containing a detergent product. The van will be used exclusively for the transport of meats.

3. Persons appointed to the transport of meats will carry great-coats and washable caps and will be shoed.

4. Butcheries must respect the following conditions:

1° they cannot be installed unless 200 meters of an unsanitary declared place by the sanitary authority;

2° soil in front of the entrance must be tiled on a width of at least 1 meter on all the length of the facade;

3° sale's room and production unit will be protected efficiently against the intrusion of flies and rodents;

4° the surface of the sale's room won't be lower to 20 m<sup>2</sup>;

5° soil, built with hard and washable materials, will be water-proof;

6° walls will be covered with white tiles or similar materials until a height of 1,60 ms. Higher, they will be painted with oil or with ditrempefine, with light colors. The intersection between soil and walls will be rounded in view to avoid the deposit of dusts;

7° the sale's room will be provided with ventilation devices (windows opening on the outside, special openings of ventilation) of which the total surface of the opening part will be at least equal to the 1/20 of the surface of the local;

8° it will have a height under ceiling of at least 4 meters;

9° doors giving access to the store, outside as well as inside, must be provided with springs that assure the automatic closing of it, and they will be decorated of glass or canvases to stitches;

10° stalls and counters must be covered with marble, marbrite, glass or similar materials no fissured. Hanging bars and hooks will be in rustproof metal. They must be placed so that meat doesn't touch walls, nor the soil;

11° meats will be exposed only in refrigerated facilities whose temperature will be maintained at 4°C;

12° blood flowing out will be covered on the floor with sawdust of wood in order to subtract it to the action of air;

13° the sale's room must be separated completely from dwelling rooms, kitchen, washers, refectory, places allocated to the preparation of meat products, guts or other animals

products. It cannot be adjoining to constructions serving to the lodging of kids or big domestic animals, to the sanitary facilities, smokehouse or local declared unsanitary by the sanitary authority;

14° the local in which meat is processed must serve exclusively to this destination; alone the following products can be found in it: meat, products of meat, canned foods of meat, excerpts of meats, greases and objects related to the conservation and the selling the aforementioned products.

5. Butcher shops will be provided, for the bonding of meats, a cold room or an icebox whose importance will be proportioned to the one of the trade.

The inside must be covered of a washable matter and must include a thermometer in good condition that will permit to control every time the temperature, which should never pass 4°C.

6. It is prohibited from using for the packing meats with paper or with other matters no washable, soiled or having served to another use.

7. The material must include an automatic balance.

8. The store, the material and the small material as knives, saws, axes, etc., should be always in perfect state of cleanliness.

9. Butcheries and butcher's shop will be fly proof and provided with ventilation facilities of which the total surface of the opening part will be at least equal to the 1/20 of the surface of the local, that won't be itself lower than 16 m<sup>2</sup>. The illuminating surface should be at least equal to the 1/10 of this surface. Soil and walls must be waterproof and must be built in strong materials and be washable. The height of ceilings will be 3,40 ms at least.

The smokehouse will be separated from the shop in which there must a water point. All communication with the sanitary facilities or with local declared unsanitary by the sanitary authority is defended.

10. Butcher shops will be provided in sufficiency with containers galvanized intended to collect garbage, rubbish, waste, etc.

These containers will be provided with a lid and should be held tightly closed. They will be washed after emptying waste from it.

11. Persons appointed in butcher shops will use, to work, aprons and white and washable special caps and will be shoed.

12. The presence of animals will be forbidden in butcheries, butcher's shops and their preparation rooms.

13. On advice of the hygiene Commission, commissioners of district can grant derogations to paragraphs 6°, 9° and 14° of the article 4, to trades that don't sale fresh, refrigerated, frozen or prepared meat on daily basis.

14. Infractions to the present order will be punished of penalties foreseen in the article 10 of the Decree of July 26, 1910 on the manufacture and the food commodity trade.

15. The article 2, paragraphs 1°, 2°, 4°, 5°, 6°, 7°, 8°, 9°, 10°, 13°, 14° of the article 4, the article 9 will enter in force on March 1st, 1954.

### **7 OCTOBER 1958: ORDER N° 41/414: DECLARATION OF QUANTITIES OF MEATS PRODUCED BY BUTCHERS OR BY SELLERS OF MEAT.**

1. In localities determined by governors of province, every butcher or seller of meat is held to declare monthly, by category and by origin, quantities of fresh, refrigerated or frozen meat that have been produced or resold by himself during the month, as far as these reach a ton per month.

2. Procedures according to which these declarations must be made will be fixed by governors of province.

3. Infractions to the present order will be punished of penalties foreseen in the article 10 of the Decree of July 26, 1910 on the manufacture and the food commodity trade.

### **PARTICULAR MEASURES**

#### **9 June 1955: O.R.U. n° 54/77 : Measures of execution of the Decree of July 26, 1910 on the manufacture and the food commodity trade.**

1. Are considered as harmful food commodities in sense of the 3° of the article 1st of the Decree of July 26, 1910:

1° all meats coming from dead animals by natural death, intervening following a pathogenic reason such as: infection, poisoning, infestation or other;

2° all meats delivered to the consumption more than forty-eight hours after the stake to death of the animal from which they come, and no treated by an efficient process of conservation such as refrigeration, freezing, smoking, salting, etc.

2. [Infractions to the Decree of July 26, 1910 can be judged by the indigenous jurisdictions in limits of their competence.]

3. The order n° 54/111 of August 14, 1953 is abrogated. The present order will bring in force thirty days after its publication.

### **The Minimum Standards for meat inspection and routine hygiene Tests:**

1. The bi annual test for slaughterhouses and meat packing plants, rural butcheries should include an inspection of the premises as outlined in the Codex Alimentarius recommendations:

- Sealed doors and windows
- Tiled surfaces and walls to 2 Metres height with lip curve from wall to floor for easy washing and disinfections

- Utensils and operating equipment check
- Hygienic cutting table and room
- Cold room sealed doors, hygiene and temperature check- less than 5 oC for chilling rooms
- Cold store sealed doors, hygiene and temperature check: capability of –18 oC facility for refrigeration rooms.
- Personnel check for personal hygiene and clothing-overalls
- Health and safety procedures:

*Reference: Codex Alimentarius Standards for Slaughterhouse and Meat Processing Hygiene. Annex:*

### **Minimum Laboratory Tests:**

Routine tests should be made on meat samples from registered slaughterhouses to ensure absence of:  
Bacteriology:

E. Coli  
Salmonellae  
Streptococci  
Staphylococci  
Listeria

Nematodology:

Helminthology

Random Samples should be taken weekly to ensure non-bacterial contamination of carcasses and processed products.

These tests would be routinely done on meat export commodities for importer veterinary certificate (For example for de boned Goat and Beef vacuum packed products palletted for Cairo Egypt)

These tests can be made in the Rubirizi Laboratory at the National Diagnostic Veterinary Laboratory. Regional and Export sample testing can also be made and reports sent to the Central Standards Bureau Office coordinated by the Ministries of Agriculture, Health and Commerce.