Prioritizing Sanitary and Phytosanitary (SPS) Investments for Market Access in Malawi

Contributions from:

Talumba Ireen Chilipaine, Dr. Mukayi Musarurwa, Daniel Njiwa, Dingiswayo Shawa, Fred E. Sikwese, Dr. Joseph Nkhoma, Dr. Elisa Mazuma, Matlida Mdyetseni Chingwalu, David Kamangira, Isaac B. Gokah, Mufwa Munthali

January 2022

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Acronyms

AGRA	Alliance for Green Revolution in Africa
CAADP	Comprehensive Africa Agriculture Development Programme
CBOs	Capacity Building Options
COMESA	Common Market for Eastern and Southern Africa
EU	European Union
DARS	Department of Agricultural Research Services
FCDO	Foreign Commonwealth and Development Service
GAP	Good Agricultural Practices
GHPs	Good Hygiene Practices
GMPs	Good Manufacturing Practices
GVPs	Good Veterinary Practices
HACCP	Hazard Analysis and Critical Control Points
IPPC	International Plant Protection Convention
ITC	International Trade Centre
MCCs	Milk Collection Centres
MCDA	Multi Criteria Decision Analysis
MRLs	Maximum Residue Limits
PHH	Post Harvest Handling
P-IMA	Prioritizing SPS Investments for Market Access
PRA	Pest Risk Analysis
RASFF	Rapid Alert System for Food and Feed
RSB	Rwanda Standards Board
STDF	Standards and Trade Development Facility
SPS	Sanitary and Phytosanitary
TOT	Training of Trainers
USAID	United States Agency for International Development
UNOPS	United Nations Office for Project Services
WTO	World Trade Organization

Executive Summary

COMESA has been implementing a market access framework known as "**PRIORITISATION OF SANITARY AND PHYTO SANITARY (SPS) INVESTMENTS FOR MARKET ACCESS (P-IMA)",** with support from the Standards and Trade Development Facility **(STDF)** housed at the WTO and the Enhanced Integrated Framework **(EIF),** and also in collaboration with the Alliance for a Green Revolution in Africa **(AGRA**). This Initiative aims to support countries identify and prioritize SPS issues that limit their market access and subject them to the P-IMA priority setting framework and facilitate their mainstreaming into national investment frameworks.

The P-IMA initiative is also building synergies with the COMESA European Union's (EU) Trade Facilitation Programme, specifically on SPS capacity building in risk-based food safety management in priority value chains. The prioritization results of the SPS interventions are progressively informing other COMESA on-going work on Trade Facilitation including, technical regulations and harmonization of regulatory limits for agriculture commodities of regional trade importance, adoption of good practices in food import control and strengthening of laboratory testing requirements, among others. For instance, COMESA is implementing a Mutual Recognition Framework (MRF) with support of FCDO/AGRA. The overall objective of this project is to increase intra-regional regional trade by improving trade policy and regulatory environment through the development of a MRF for smooth implementation and monitoring of SPS measures and technical standards amongst six trading member states of COMESA, namely, Kenya, Malawi, Rwanda, Uganda, Zambia and Zimbabwe. The COMESA P-IMA initiative was successfully rolled out in 2018 as a three-year project (**2018-2021**) focusing on five COMESA countries namely, **Uganda, Kenya, Rwanda, Malawi and Ethiopia**. Full detailed reports can be found on the STDF website: STDF/EIF funded project Malawi is the 4th country that rolled out the P-IMA initiative and project implementation was successfully completed.

Thus, this report is the result of the application of the P-IMA framework in Malawi. A total of **19 SPS Investment Options** were subjected to the P-IMA priority setting framework. The priority setting was based on a structured process of identifying SPS Investment Options that were relevant for market access, prior agreed objectives (called decision criteria), and agreed weights assigned to the decision criteria. In all, it will cost approximately **USD15 Million** to implement all the **19 SPS Investment Options**. In return, these **19 SPS Investment Options** could generate additional exports worth **USD135 Million** annually. Overall, the following **eight (8)** SPS Investments Options consistently ranked highly as the best investment options:

1. Capacity building in GAPS, pre & PHH and HACCP for legumes and oilseeds
2. Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey
3. Capacity building of value chain players on GAPs & PHH and HACCP for horticulture products
4. Design and implementation of GAPs, GHP and HACCP for honey products
5. Pest Risk Analysis (PRA) for horticulture products
6. Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds
7. Develop a traceability plan and establish a digital traceability system for honey
8. Accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products

1.0 Introduction

The Standards and Trade Development Facility (STDF) of the World Trade Organization (WTO) has developed the framework, Prioritizing SPS Investments for Market Access (P-IMA), based on Multi Criteria Decision Analysis (MCDA), to help inform and improve evidence-based SPS capacity building planning and decision-making processes. COMESA views the P-IMA framework as a unique planning and sector-wide resource mobilization tool and encourages its Member States to use P-IMA to take stock of SPS capacity needs, prioritize and cost investment options with the best returns, and integrate SPS investments into national agriculture sector investment plans (CAADP) and other relevant frameworks.

Consequently, COMESA Secretariat secured funding from the STDF and the Enhanced Integrated Framework (EIF) to implement a regional P-IMA project, which builds on the past application of the framework, to further expand the use of the P-IMA framework in five (5) COMESA Countries namely: **Malawi, Kenya, Rwanda, Uganda and Ethiopia**. The objective of the project is to improve SPS capacity and enhance market access through a multi-stakeholder, evidence-based approach of mainstreaming SPS capacity building into national investment frameworks for agriculture, trade, health, and/or environment.

The P-IMA initiative is also building synergies with the COMESA European Union's (EU) Trade Facilitation Programme, specifically on SPS capacity building in risk-based food safety management in priority value chains. The prioritization results of the SPS interventions are progressively informing other COMESA on-going work on Trade Facilitation including, technical regulations and harmonization of regulatory limits for agriculture commodities of regional trade importance, adoption of good practices in food import control and strengthening of laboratory testing requirements, among others. For instance, COMESA is implementing a Mutual Recognition Framework (MRF) with support of FCDO/AGRA. The overall objective of this project is to increase intra-regional regional trade by improving trade policy and regulatory environment through the development of a MRF for smooth implementation and monitoring of SPS measures and technical standards amongst six (6) trading member states of COMESA, namely, Kenya, Malawi, Rwanda, Uganda, Zambia and Zimbabwe.

The COMESA P-IMA initiative was successfully rolled out in 2018 as a three-year project (2018-2021) focusing on five COMESA countries namely, Uganda, Kenya, Rwanda, Malawi and Ethiopia. Full detailed reports can be found on the STDF website: STDF/EIF funded project Malawi is the 4th country that rolled out the P-IMA initiative and project implementation was successfully completed. Thus, this report provides the outcomes of the application of the P-IMA process in Malawi in 2021. Previously in 2012, Malawi piloted the P-IMA framework, then called MCDA which identified 18 SPS capacity building investment needs. One significant outcome of the 2012 P-IMA application (then MCDA) in Malawi was the development and implementation of the Malawi Programme on Aflatoxin Control (MAPAC).

2.0 Overview of SPS Sensitive Trade

Malawi's economic prospects have slowed down compared to its levels in 2008/2009. In 2009, Malawi's Gross Domestic Product (GDP) grew at 8.3% but this consistently declined and was less than 2% in 2012 before picking up again. In 2017, GDP grew at 4% but this was projected by the World Bank to slow down to 3.5% in 2018. Malawi's economy is Agriculture driven and therefore largely susceptible to external shocks.

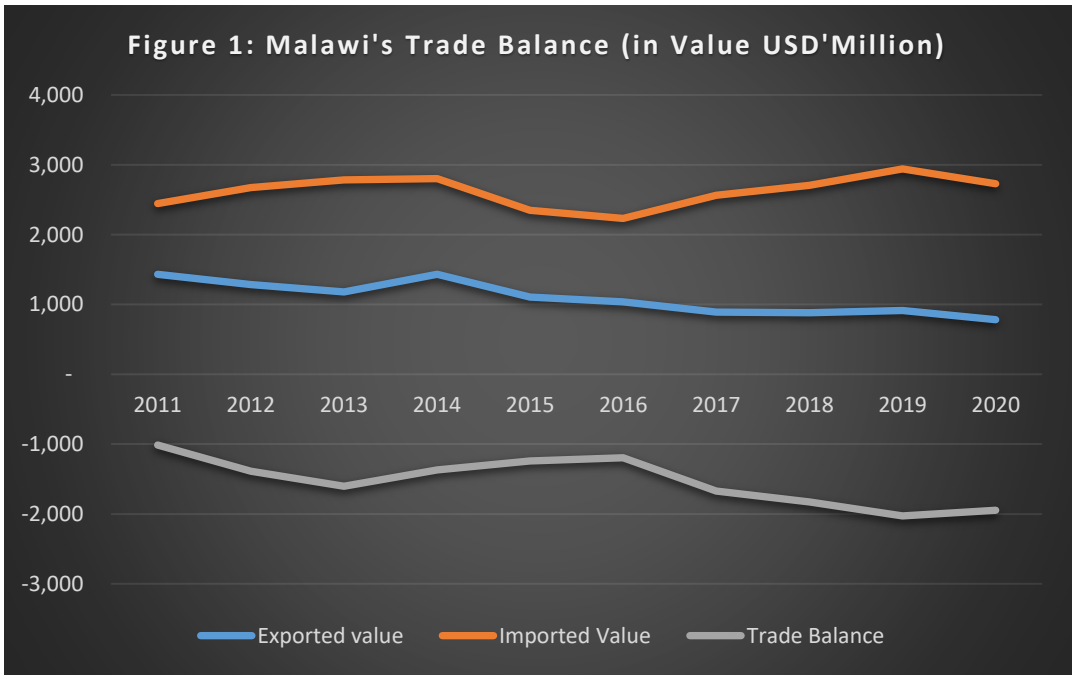
2.1 Trade Performance[1]

Malawi's trade performance in the last ten years (2011-2020) remains very abysmal as exports have been dropping. In 2011 and 2014, Malawi exported over USD1.4 Billion but this has dropped to a mere USD0.78 Billion in 2020. Imports, on the other hand have been rising but also dropped in 2015 and 2016 before picking up again from 2017-2020. Export and imported values in 2020 must be read with some caution as these are mirror data (estimations by the International Trade Centre (ITC)). Malawi, invariably, exports just about half (2011-2016) and a third (2017-2020) of what it imports, creating a large widening trade deficit over the years (see Table 1 and Figure 1).

Table 1: Exports, Imports & Trade Balance (USD' 000)

	Exported value	Imported Value	Trade Balance
2011	1,431,901	2,445,134	-1,013,233
2012	1,286,728	2,674,844	-1,388,116
2013	1,181,511	2,783,972	-1,602,461
2014	1,432,127	2,801,281	-1,369,154
2015	1,106,631	2,348,475	-1,241,844
2016	1,035,099	2,231,866	-1,196,767
2017	889,126	2,562,126	-1,673,000
2018	879,825	2,707,070	-1,827,245
2019	912,983	2,941,148	-2,028,165
2020	781,981	2,730,273	-1,948,292

Figure 1: Malawi's Trade Balance (Value in USD' Million)



Although Malawi had implemented an export strategy (2013-2018), its exports dwindled more drastically from well over USD1.4 Billion before the strategy to under a billion united states

[1] All data in this document are from ITC data on www.trademap.org, except otherwise indicated

dollars in the last four years. The reason is not far-fetched. The Malawi National Export Strategy (NES I), which aimed at boosting the productive sectors, of particularly oilseeds, sugar cane products, and manufactures (particularly agro-processing) clusters, was poorly implemented. Also, low exportable agricultural outputs, partly attributable to the vagaries of the weather, commodity prices, the energy crisis during later part of this period as well as the emergence of novel corona virus have also influenced the poor performance of Malawi's exports and hence the deteriorated trade deficit. A National Export Strategy II was launched in 2021 and it is expected to boost exports when well implemented

2.2 *Malawi's Main Export and Import Products*

Most of Malawi's export sectors still remain in infancy. Traditional exports (tobacco, coffee, tea, and sugar and sugar confectioneries) continue to dominate exports (See Figure 2). These sectors alone constituted, on average, over 72% of Malawi's total exports in 2020. Tobacco remains the most important sector for Malawi, accounting for over 50% of all exports, on average, over the 2011-2020 period. Notably, exports from these sectors have decreased substantially from their 2011 levels. Non-traditional exports that have emerged strongly over the period include oil seeds and oleaginous fruits, edible vegetables and certain roots and tubers, edible fruit and nuts (particularly macadamia nuts), and residues and waste from food industries.

Products that show the greatest export potentials include raw cane sugar, black tea, legumes, oilcakes of soya-bean oil, soya beans, maize seed for sowing, and coffee (see figure 3). Chicken eggs and plastic products also offer opportunities for regional trade.

On the flipside, Malawi's main imported products in 2020 were manufactured products (printed books, newspapers, pictures and other products of the printing industry; fertilizers; mineral fuels, mineral oils and products of their distillation; machinery, mechanical appliances, nuclear reactors, boilers; etc.).

Figure 2: Malawi's Main Exported Products in Value (USD' Million)

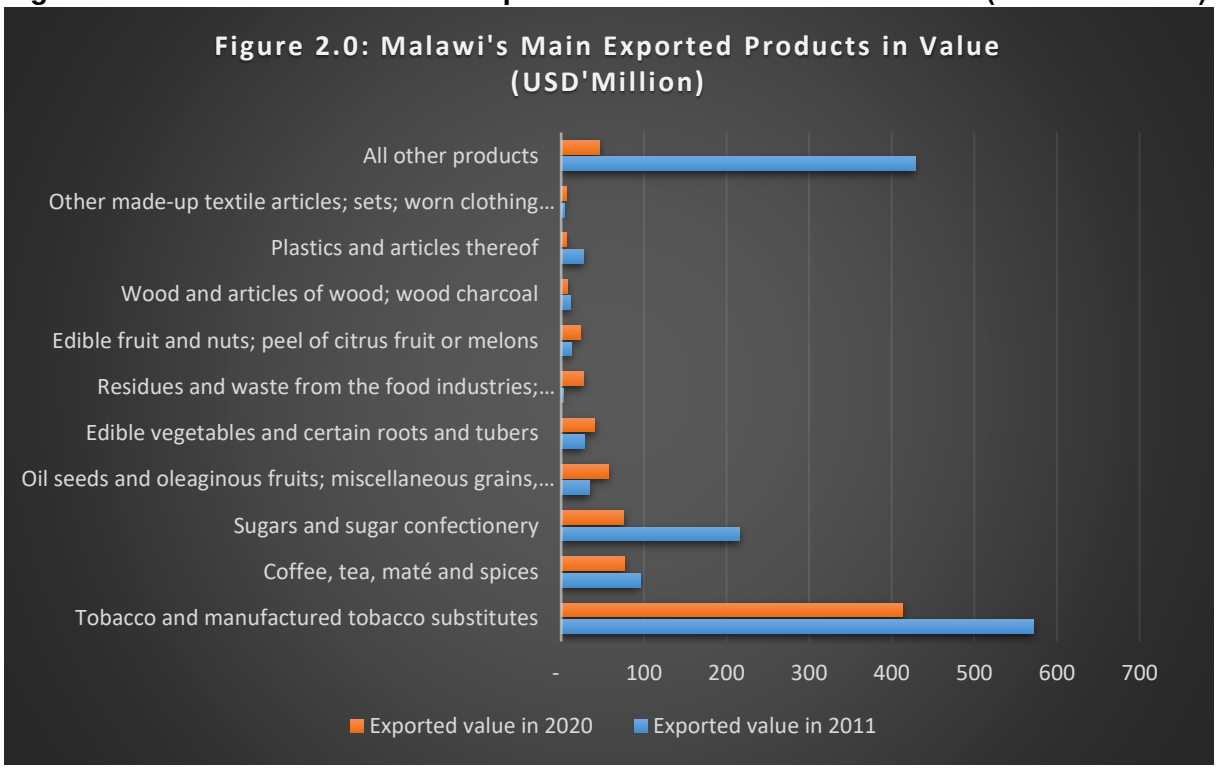
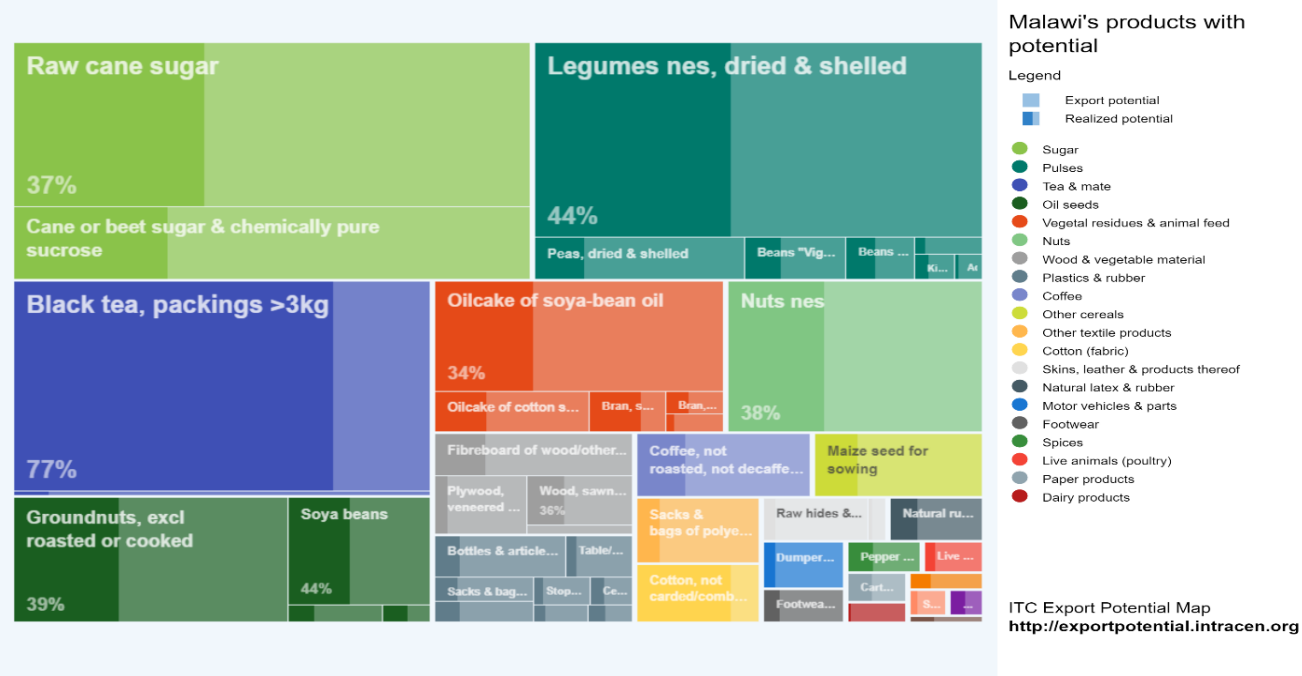


Figure 3: Malawi's Products with Potential



2.3 *Main Export Destinations and Import Sources*

Malawi's top export destinations remained largely the European and the regional markets. In 2020, these were Belgium, South Africa, UK, Kenya, US, Zimbabwe, China, and Tanzania (see figure 4). Most of these markets have declined in their significance in terms of the value of imports from Malawi except for Belgium. Although EU countries dominate Malawi exports, the EU market becomes less important without tobacco. In effect, Malawi exports more to the Africa region (particularly the SADC and COMESA regions) followed by Asia then EU if tobacco is excluded. Thus, Malawi's neighbours, South Africa, Zimbabwe, Tanzania, and Mozambique, are the most promising markets for Malawi exports. On the flipside, Malawi's main import sources in 2020 were South Africa, China, UAE, India, UK, Zambia, Mozambique, Japan, Kuwait and Malaysia. These countries remained consistently the most sources of Malawi's imports, although the amount of these imports remained largely static over the years.

Figure 4: Malawi's Top Export Destinations in 2011-2020 (USD' Million)

2.4 Overview of SPS Issues in Malawi's Trade

Although SPS issues are not the most constraining challenges to Malawi's exports, they are becoming very critical in pursuit of product and market diversification, particularly into high value markets. In addition, some regional markets such as South Africa and the East African region have started to pay serious attention to SPS compliance. Malawi has had some export rejections by the US and EU due to SPS issues. The EU through its Rapid Alert System for Food and Feed (RASFF) had 12 notifications for SPS non-compliance against Malawi between 2005 and 2017[2] (See Annex 4 for details). Eleven (11) of these 12 notices were related to aflatoxins in groundnuts and chilli into mostly UK and the Netherland's market. The remaining notification was related to unauthorized colour (additives) in curry to Sudan. On Honey, Malawi has also been delisted from exporting honey into the EU Market as a result of non- compliance to SPS issues.

Below also, are some interceptions by the EU of plants with harmful organisms between 2010-2019:[3]

Table 2: European Union Notification System for Plant Health Interceptions - EUROPHYT for Malawi (2010-2019)

Year	Commodity/Plant Species	Reason/Harmful Organism
2011	Wood Pallet	Other Reasons: Non-compliance with special Requirements
2014	Intended for planting: Not yet planted – Ficus	Phyto. Cert. / Plant Passport: Modification Of Document
2016	Wood Pallet	Other Reasons: Non-compliance with special Requirements
2017	Other living plants: Fruit & Vegetables - Mangifera Indica	Ceratitis Cosyra

3.0 The P-IMA Framework

The P-IMA framework employs a Multi Criteria Decision Analysis (MCDA) tool that engages a multi-stakeholder approach to consolidate SPS capacity gaps, cost and rank the investment needs based on agreed economic and social defined decision criteria. The aim is to generate a set of evidence based SPS priorities that gives the best return on investment and can be mainstreamed into national investment frameworks and/or leverage external resource mobilization. The rationale behind the framework is that priorities need to be established on the basis of a range of economic and social considerations that may, at least on the face of it, be difficult to reconcile. In turn, this assumes that the rationale for investments in SPS capacity-building is not compliant with the export market SPS requirements per se, rather, the economic and social benefits that might flow from such compliance, whether in terms of enhanced exports, incomes of small-scale producers and/or vulnerable groups, promotion of agricultural productivity and/or domestic public health, etc. The framework provides an approach for different decision criteria to be taken into account even though they may be measured in quite different ways.

[2] https://webgate.ec.europa.eu/rasff-window/portal/.

[3] Europhyt – an on-line web-based rapid alert system for plant health interceptions in the European Union (EU)

The framework employs a highly structured process that aims to be applied in a wide variety of contexts and to provide various diagrammatic and numerical outputs. The framework and its practical implementation are described in detail in a user's guide[4]. Below, is a relatively brief outline of the stages of the framework, with a particular focus on how they were implemented in Malawi.

Stage 1: Compilation of Information Dossier

The first stage of the analysis involved the compilation of a comprehensive dossier of existing information on the SPS challenges facing agri-food exports in Malawi and the associated capacity-building investment needs. In so doing, the aim was to ascertain what work had already been undertaken to identify capacity-building investment options and the definition of priorities for related investments. Consequently, the current study built on the previous work done in 2012, received sector specific presentations from the various competent authorities based on their sector specific assessments, and a synthesized SPS-sensitive trade flow study during a High-Level inception meeting that was held on 9th March 2020.

Stage 2: Definition of Choice Set

In order to identify the SPS Investment Options to be considered in the priority-setting framework, a two-day stakeholder workshop was held from 10th to 11th March 2020. The workshop comprised of training of key stakeholders on the P-IMA framework and on the D-Sight Software, which powers the P-IMA framework. These two days were also dedicated to the identification of Malawi's SPS Investment Options and defining the Decision Criteria and Weights. Participants were presented with a series of cards and asked to identify the SPS investment needs that are mutually exclusive and consist of four key elements (Figure 2). First, the product(s) affected; second, the specific SPS issue faced by exports of this product(s); third, the market(s) where these SPS needs were an issue; and fourth, the capacity-building investment option(s) that would solve the SPS issue being faced. The combination of these four elements defined a distinct capacity-building investment option. Respondents were free to define as many specific SPS capacity-building needs as they wished.

Figure 5: Definition of SPS capacity-building options

The Investment Options generated from the above workshop was further reviewed and validated in a sector-specific working session from 20 to 24 September 2021. At this stage, certain SPS Investment Options that did not meet the criteria were excluded. The Investment Options that were included are listed and defined in Table 4 below:

[4] User Guide can be found on STDF website: http://standardsfacility.org/prioritizing-sps-investments-market-access-p-ima

Table 4: SPS Investment Options for Malawi

1.	Accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products
2.	Capacity building of value chain players on GAPs & PHH and HACCP for horticulture products
3.	Pest risk analysis and integrated pest management for horticulture products
4.	Surveillance and residue monitoring in horticulture products
5.	Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey
6.	Develop a pest and disease surveillance system in honey (Varroa, AFB, EFB, Nosema etc)
7.	Design and implementation of GAPs, GHP and HACCP for honey products
8.	Develop a traceability plan and establish a digital traceability system for Honey
9.	Develop a regulatory framework for honey
10.	Develop a disease surveillance system for livestock (day old chicks, beef, goats, hides and skins)
11.	Develop a disease surveillance system for ornamental fish
12.	Develop a surveillance system for milk and milk products
13.	Upgrade capacity of the Central Veterinary Laboratory for surveillance system for trade sensitive diseases (FMD, RVF, PPR, HPAI, Anthrax, Brucellosis, bovine Tuberculosis, AFB, EFB, Nosema, Varroa)
14.	Creating an FMD free zone
15.	Capacity building in GAPs, Good Veterinary Practice (GVP), HACCP for milk and milk products
16.	Capacity building in pest surveillance and diagnostic testing and personnel certification skills for legumes and oilseeds
17.	Accreditation of MRL testing method for legumes and oilseeds
18.	Capacity building in GAPS, pre & PHH and HACCP for legumes and oilseeds
19.	Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds

Stage 3: Definition of decision criteria and weights

In the second stage of the stakeholder workshop, respondents were asked to define an appropriate set of criteria to drive the priority-setting process and to assign weights to these. First, participants were presented with a series of potential decision criteria and asked which (if any) should be excluded and whether any potentially important criteria were missing. To define the decision weights, the workshop participants were each asked to assign 100 points amongst the seven decision criteria agreed on. The scores of participants were then collated, and an average weighting calculated. This average weighting was reported back to the workshop to identify any discrepancies. The final agreed weightings are reported in Table 5 below.

Table 5: Decision Criteria and Weights

Objective	**Decision Criteria**	**Average Weight**
Cost	Upfront Investment	17.6
	On-going Cost	10.8
Trade Impact	Change in absolute value of exports	18.4
	International Reputation	13.6
Domestic Spillovers	Public health	13.5
	Vulnerable Groups	11.5
	Poverty Reduction	14.6
Total Weight		**100**

Stage 4: Construction of Information Cards

Having identified the choice set of SPS capacity-building investment options and the decision criteria and weights to be applied in the priority-setting exercise, information was assembled into a series of information cards. The aim of these cards is not only to ensure consistency in the measurement of each decision criterion across the capacity-building options, but also to make the priority-setting exercise more transparent and open to scrutiny.

First, the specific nature of each of the SPS capacity-building options was described in some detail on the basis of existing documentation, consultation with stakeholders, etc. and are set out in Section 4. The metrics to be employed for each of the seven decision criteria were then defined, taking account of currently available data and the range of plausible ways in which each of the criteria might be represented. Table 6 sets out the final metrics. Note that the choice of metrics involves a sometimes-difficult compromise between the availability and quality of data, and the imperative to employ continuous quantitative measures. While the cost element and trade impacts were estimated by a core team of sector players based on the component of the capacity building investment options and the lost trade and/or potential trade, respectively, other decision criterion were measured collectively by stakeholders during the working session based on available data and information. However, it is important to recognize that the aim of the framework is not to provide a final and definitive prioritization of the capacity-building investment options. Rather, the priorities that are derived should be revisited on an on-going basis and revised as more and/or better data for the decision criteria become available.

Information cards for each of the SPS capacity-building options were then compiled. These are reported in Annex 3. Each card presents data for the seven decision criteria, measured according to the scales outlined in Table 3. For each criterion, details are provided of how measures for each of the decision criteria were derived. There is also an indicator of the level of confidence in the measure reported. Where there is a lack of underlying data and/or these data are of dubious quality, a low or medium level of confidence is indicated. Conversely, where fairly rigorous and comprehensive prior research is available, a high level of confidence is reported. These confidence measures need to be considered in interpreting the results of the prioritization exercise, and in considering how the analysis might be refined in the future.

Table 6: Decision Criteria Measurement Metrics

Decision Criterion	Details	Measurement
Cost		
Up-front investment	Monetary costs of investments to upgrade SPS capacity	Absolute value ($)
On-going costs	Direct costs of maintaining and operating the upgraded SPS capacity	Absolute value ($)
Trade Impact		
Change in absolute value of exports	Predicted enhancement of exports or avoided loss of exports five years from implementation of the intervention	Absolute value ($)
International Reputation	Would the implementation of the intervention enhance the reputation of trade from Malawi?	Yes (1) / No (-1)
Domestic Spillovers & Social Impacts		

Public health & environment	Changes in domestic public health, through food safety, occupational exposure to hazards, etc. and Changes in protection of natural environment	Large negative (-3); Medium Negative (-2); Negative (-1); No Impact (0); Positive (+1); Medium Positive (+2); Large positive (+3).
Impact on Poverty	Change in the incidence of poverty	
Vulnerable Groups	Impact on the health and/or income of Women, Youth, Underage, People with Disability, the elderly or the sick	Yes/No

Stage 5: Review of Information Cards

Following from stage 4, the information cards were further subjected to further verification by the national team to ensure accuracy and confidence in the data and information in the cards.

Stage 6: Derivation of quantitative priorities

The formal priority-setting analysis involved the use of outranking through the D-Sight software package. The mechanics of the analysis are described in some detail in the user guide to the framework. The inputs to the model are the data assembled in the information cards. For most of the decision criteria, preferences were modelled using a level function since these were measured using categorical scales. However, the up-front investment, on-going cost and absolute change in value of exports criteria were measured continuously and modelled using linear functions. Two models were estimated using D-sight:

- *Baseline model* using decision weights derived in Stage 3.
- *Equal weights model* in which all of the decision criteria are weighted equally.

The baseline model is considered to provide the main set of priorities, in that it uses the full set of information derived through Stages 1 to 4. The equal weights model was estimated in order to examine the extent to which the derived priorities are sensitive to changes in the decision weights; if the broad ranking of the SPS capacity-building investment options remains generally the same under the scenarios presented by these models, we can be reasonably confident that the results of the framework are robust.

Stage 7: Validation

The final stage of the priority-setting analysis is completed with this report on the results of the analysis. The aim of the validation process was to ensure that the results of the priority-setting framework were broadly in accordance with expectations, or that unexpected rankings can be explained through the pattern of data in the information cards. To facilitate this process, the draft report was disseminated to stakeholders by email with a request for comments. Further, the preliminary results were presented at stakeholders' validation workshop on 24th February 2022 the participants at which are reported in Annex 4.0.

4.0 Brief Description of the Capacity Building Options (CBOs)

4.1 Horticulture Value Chain

Selected horticultural crop value chains (mangoes, spices and herbs, chillies, macadamia, and egg plants) are among the crops whose products are traded at national, regional and international markets in Malawi for human and livestock consumption as well as industrial use.

The key destination markets for these commodities are India and United Arab Emirates (in the case of mangoes); Australia, USA, UK, Norway, Japan, Kenya, and South Africa (in the case of macadamia nuts), and France, Spain, India and Netherlands (in the case of Chillies). However, there are SPS measures that have to be addressed to meet the national, regional and international standards and requirements in the traded plant products. Some of the SPS challenges experienced in Malawi's horticulture sector include:

i. Stringent Maximum Residual Limits (MRLs) by the EU for horticultural products and lack of accredited laboratory in Malawi for assessing MRLs;
ii. Emerging pests' invasion: tomato leaf miner (*Tuta absoluta*), fruit flies (*Bactrocera dorsalis*);
iii. Limited resources and capacity to conduct Pests Risks Analysis (PRAs) e.g. surveillance of quarantine pests to be conducted regularly;
iv. Lack of understanding on the import requirements by the importing country on the horticulture products including understanding of market conditions.

The other problems are pesticide residues which are not compliant with the Maximum Residue Limits (MRLs) required by the importing countries. The Department of Agricultural Research Services (DARS) in the Ministry of Agriculture (MoA) through its National Plant Protection Organization (NPPO) is one of the SPS implementing agencies that facilitate trade in making sure that there is compliance to SPS (plant health) requirements and standards in traded agricultural plant products.

The implementation of SPS requirement in traded plant products is guided by the Plant Protection Act of the Laws of Malawi and its subsidiary Plant Protection Regulations which empower the NPPO to discharge their duties professionally. The Plant Protection Act is consistent with the international guidelines and regulations such as the International Standards on Phytosanitary Measures (ISPMs) of the International Plant Protection Convention (IPPC) of the Food and Agriculture organization (FAO) of the United Nations (UN), the World Trade Organization's (WTO) SPS & trade facilitation agreement (SPS & TFA) which Malawi is a signatory. The Plant Protection Act is also aligned to the regional SPS requirement (harmonized SPS regulations and requirements for the Southern African Development Community (SADC) and Common Market for Eastern and Southern Africa COMESA)).

The application of the P-IMA Framework in Malawi has identified the following **four (4)** SPS Investment Options to respond to the existing SPS constraints in the Horticulture value chain and facilitate trade:

4.1.1 Accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products

Credible testing in pesticides, heavy metals, foreign objects, and microbial organisms in horticultural crop products must be in place in order for exporters to ensure compliance with MRLs in destination market, including domestic markets. Malawi's principal market for horticultural products is India, UAE, China, and the European market. Most horticultural products, particularly hot pepper, chilies, herbs and spices, lack access to these markets due to non-compliance issues such as: microbial contamination, foreign objects, chemical and pesticide residues. These horticultural products have a great potential of contributing greatly to the Malawi's economy if exported in large quantities and complies with regional, EU and India import requirements. Accredited testing capacity is arguably more important in the case of regional, India, Asian and EU markets where far stricter limits and associated testing requirements are applied and needed.

In Malawi, farmers/growers utilize large quantities of pesticides in order to control the pests that devastate the horticultural crops from where traded products are sourced. Currently

Malawian exporters of agri-food products have pesticide residue tests conducted outside the country as the existing laboratory in Malawi, the Malawi Bureau of Standards (MBS), is not yet accredited in these parameters.

Accrediting the MRL testing method will increase the confidence in the test results which will bring confidence in market access, reduction in cost of testing and time of waiting for the product to be dispatched for destination market,

The total cost of accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products is estimated at **USD 311,110.14**. The investment is expected to cover the development of the laboratory quality management system (SOPs, manuals and standards), training of staff and farmers, procurement of reference materials, auditing of the system and ICT equipment, as well as procurement of equipment. See Annex 3 for details.

4.1.2 Capacity building of value chain players on GAPs & PHH and HACCP for horticulture products

The application of Good Agriculture Practices (GAP) is paramount in the management of SPS measures that affect the facilitation of international trade in horticultural products. It is observed that the selected horticultural value chains require adherence to GAP & Post Harvest handling (PHH) including HACCP so that the produce obtained are of good quality. Extension staff in the Department of Agricultural Extension Services (DAES) of the Ministry of Agriculture (MOA), Plant Health Staff in the DARS need to be trained in GAP & pre & PHH, HACCP so that the skills acquired can be transferred to the farmers who in turn will make sure that the horticultural crop products obtained will be of good quality. Training manuals need to be developed, validated and used. Trainers need to be trained so that quality training is delivered. Extension circulars would be needed to supplement the training manuals.

In addition, some of the horticultural crop products exported from Malawi to the EU and United Kingdom requires HACCP certification as part of the private food safety standards in that country. There have been potential commercial opportunities to export horticultural products from Malawi to regional and EU markets. This CBO will enhance knowledge on some of these market access requirements.

There is also need for capacity building initiatives to horticulture farmers for export skills and knowledge on agronomic practices and quality requirements for various markets. These will be necessary for ease of market access initiatives that could be required by trading partners as may be requested by the clients in plant products trade for their product to meet the required SPS standards.

The total cost of the capacity building in GAPS, pre & PHH and HACCP for horticultural products is estimated at **USD 104,920.75**, which will cover training of trainers, training manual development and validation, training of staff at DARS., farmers and SMEs in GAP, pre and PHH and HACCP, and HACCP certification.

4.1.3 Pest Risk Analysis and Integrated pest management for horticulture products

Pests are one of the key SPS issues faced by exported products in the horticulture industry. Malawi's principal market for horticulture products is the European Union (EU). Although, currently, Malawi mostly exports mangoes to India, the EU and UAE, there is also some potential market for mangoes within the region such as South Africa. However, compliance with fruit fly (*Bactrocera dorsalis*) is currently restricting fresh mango fruit exports. In addition, there is a huge market demand for chilies in the EU region. However, the production of these value chains is faced with problems of pest contamination. The export market demands that a pest risk assessment be conducted on the consignments for selected horticulture products.

In view of this there is need to have a vibrant system that will conduct a Pest Risk Analysis (PRA) as well as integrated pest management (IPM) for selected horticultural products (chilies and hot pepper, mangoes, and egg plants etc.).

(a). Pest Risk Analysis (ISPM 2) and other ISPMs related to trade facilitation would be paramount to capacitate NPPO staff at border posts and inland SPS offices and facilities through the skills training. This investment option is intended to use combined complementary approaches of pest surveillance to establish pest free area/low areas of pests, and biological control agents, to address the challenge. The estimated cost for this investment option is **USD55,100**.

(b). Integrated pest management (IPM) is key for management of pests and diseases for horticultural crops both local and export markets. IPM is in line with integrated measures in a systems approach for pest risk management (ISPM 14) guidelines. This intervention will include training of extension personnel, producers, exporters on Good Agricultural Practices (GAP) using IPM. The estimated cost for this investment option is **USD60,000**.

4.1.4 Surveillance and residue monitoring in horticulture products

Pest and disease surveillance is key in ascertaining the pest and disease status in horticultural crops. Surveillance is used to generate a pest list which is in turn used for market access. On the other hand, pesticide residue monitoring is essential as it will inform on the levels of the pesticide contamination in a product. The government of Malawi through the Ministry of Agriculture (MoA), Department of Agricultural Research Services (DARS) is mandated to carry out plant pests and disease surveillance to help in decision making and also assure the consumers on the product safety that come from horticulture products. Currently, due to limited resources and government policy on plant pest and disease control, the majority of the surveillance activities focus on pests and diseases that are trade sensitive.

Reports show that horticulture products may not be allowed to be exported due to problems of pest infestation that can be carried together by the horticulture consignments to destination countries. This calls for scaling up of pest and disease surveillance and diagnostic activities to ensure that horticultural crop products destined for export are free from pest and disease attack and infection. This further requires procurement of laboratory equipment, training of staff in use of equipment and conduct pest surveillance, residue monitoring through use of state-of-the-art equipment for testing MRLs for exported horticulture products. In addition, ICT infrastructure would be helpful in PRA that could be requested by the importing countries.

The total cost of building capacity in pest surveillance and residue monitoring for the selected horticulture value chains is estimated at **USD 2,336,700**.

4.2. Honey Value Chain

Bee keeping has largely been a traditional activity in Africa for a long time. Honey in Malawi is mostly produced by small-scale beekeeping households who operate individually or in beekeeping associations and medium or large-scale semi-commercial beekeepers. There has however been an increase in commercial activity in this value chain. Through beekeeping, many people, including vulnerable groups (women, youth and the disabled) are getting income, hence changing their lives for the better from the money that the sale of honey brings. Beekeeping also helps communities to preserve forests, since trees are used for beehives.

The Government of Malawi has earmarked honey production as one of the potential income generating activities in the rural areas and this has been stipulated in government policy documents specifically the Malawi Poverty Reduction Strategy Paper and the Malawi Growth and Development Strategy. As such, it has initiated a number of activities, which include linking honey farmers to market outlets, linking them to financial service providers, improving rural infrastructure, permitting honey farmers to hang their beehives in forest reserves at no cost and increasing annual budgetary allocations towards beekeeping activities. All these activities are aimed at motivating farmers to increase honey production.

Furthermore, Malawi honey has huge export potential to the European market, China and the Southern Africa region. However, honey exports to the EU and China are faced with SPS challenges that need to be addressed by the country, more especially the capacity to meet international standards requirements. Compliance with SPS requirements for honey exports was listed in the previous P-IMA framework as the SPS constraint for the honey sector. For instance, the EU and the South African markets have been expressing high interests in buying Malawian honey for the past ten years, if not more. However, Malawi could not demonstrate residue safety through a residue monitoring plan, a traceability system for honey, adequate food hygiene control system, adequate testing capacity of maximum residue levels, or able to irradiate the honey for the case of the South African market.

The application of the P-IMA Framework in Malawi has identified the following **Five (5)** SPS Investment Options and costed to respond to the existing SPS constraints in the Honey value chain and to facilitate trade:

4.2.1 Develop a Residue (pesticides and veterinary drug) Monitoring Plan in Honey

The European Union, the Middle East, China and the Republic of South Africa markets have set MRLs for pesticides in food products, including honey. Pesticides applied by farmers in the farming fields surrounding the beehives may contaminate honey. When bees collect nectar in such farming areas, residues of the pesticides may be found in the honey, and the set MRLs may be exceeded. Furthermore, when bees are treated with veterinary drugs such as antibiotics and parasiticides, the drug residues may remain in the honey, which can compromise human health. Malawi does not have a Residue Monitoring Plan in honey so it needs to develop that in response to the requirements in the EU and China markets as a means of ensuring residue safety. The Residue Monitoring Plan guarantees that the honey exported into the target markets does not contain any prohibited residues of pesticides or veterinary drugs. It is anticipated that a consultant would be engaged to develop the Residue Monitoring Plan in order to address requirements of the EU market. This SPS Investment Option is estimated to cost **USD213,000.**

4.2.2 Develop a Pest and Disease Surveillance System in Honey (Varroa, AFB, EFB, Nosema etc.)

In order to trade in beehive products in Malawi, it is necessary to establish and monitor the status of pests and diseases in the honey sector in Malawi. The Government of Malawi is mandated to carry out animal disease surveillance to help in decision making and also assure the consumers of the safety of the products originating from animals. Currently, due to limited resources and Government policy on disease control, the majority of the surveillance activities focus on diseases are trade sensitive. Malawi does not have a disease surveillance plan and does not currently conduct surveillance for bee diseases. Experience in the region shows that there is emerging and re-emerging diseases and pests of bees. This calls for scaling up of disease surveillance activities to ensure access to markets for honey products.

Implementing this capacity building would clear the hindrances and improve trade thereby increasing income for the poor. To achieve this, a total of **USD417,000** is required as an up-front and on-going investment.

4.2.3 Design and implement GAPs, GHP, GVPs and HACCP for honey products

Production of quality honey that is safe for human consumption helps in attracting both the domestic and international markets. Building capacity on Good Agricultural Practices (GAPs), Good Hygienic Practices (GHPs), following Good Veterinary Practices (GVPs) and establishment of a HACCP-based food safety management system would result in producing safe honey that meets SPS requirements and reduces cases of rejections at the markets. Therefore, it is important to develop a good production and handling infrastructure/ system to ensure that quality and safety of the honey is maintained. Likewise, GVPs in the sector are critical to avoid veterinary drug residues and buildup of antimicrobial resistance which ultimately ensures that the honey produced is free of residues.

Continued failure to invest in this would result in continued honey rejection at the market and failure to export honey and other products which currently have growing potential markets in EU, RSA, China, Middle East and Japan. The investment would require a total of **USD411,000**.

4.2.4 Develop a Traceability Plan and Establish a Digital Traceability System for honey

Food traceability enables the tracing of a product to its origin. Malawi does not have a formal livestock (including honey) identification and traceability system. This has left honey processors with no option for product identification. The current practice is that each individual farmer or processor decides the identification system to be applied on the honey and beehive product. The systems range from company brand names, area and district of origin names, batch number, etc. and there is no policy that requires inclusion of traceability of honey to the place of origin. The current markets in EU, China and Japan require that products be traceable to the place of origin.

In order to guarantee food safety and to allow appropriate action in cases of unsafe food, the food (honey) product must be traceable throughout the entire supply chain. An important aspect of controlling food safety hazards and promoting product recall in case of an emergency further justifies the need to establish a product traceability system. The industry has recently failed to access honey and wax markets in the EU, Japan, UK, China and the RSA worth **USD 4.6 Million** due to failure to meet SPS requirements. This SPS Investment Option would require a total of **USD305,000**.

4.2.5 Develop a regulatory framework for honey

Exports of honey to Europe have to comply with legally binding food safety requirements. All European food legislation are established according to the principles of traceability, risk analysis and precautionary measures. The General Food Law is the legislative framework for food safety in the European Union. To guarantee food safety and to allow appropriate action in cases of unsafe food, the food (honey) product must be traceable throughout the entire supply chain. A further important aspect of controlling food safety hazards is defining critical control points (HACCP) by implementing a food safety management system. In addition, each batch of honey must be accompanied by a health certificate signed and stamped by a veterinary officer authorized by the relevant authorities of the exporting country.

To achieve this, there is need to have a legal framework in place to guide the production of honey and control of bee diseases since the current old legislation, the Control and Diseases

of Animals Act (1967) only talks about livestock in general and does not specifically mention honey. This investment option requires a sum of **USD100,200** to be implemented.

4.3 Livestock and Livestock Products

The Malawi livestock sector is dominated by rural-based smallholders with 70% of the population for all livestock species found in rural areas. The sector is a significant contributor to Malawi's economy as it contributes at least 11% to GDP. The current National Livestock Development Policy (2021-2026) is aligned to Malawi 2063 which emphasises on wealth creation and the policy specifically aims to increase by 50% the contribution of livestock sector to overall agricultural production, increase the value of livestock exports by 10%, prepare and enforce all the laws governing disease control and food safety to safeguard animal biodiversity and increase women's and youth's access, ownership and control of livestock assets by 50%.

The application of the P-IMA Framework in Malawi has identified the following **six (6**) SPS Investment Options and costed to respond to the existing SPS constraints in the Livestock and Livestock Products value chain and facilitate trade:

4.3.1 Develop a Disease Surveillance System for livestock (day old chicks, beef, goats, hides and skins)

The livestock sector is a significant contributor to Malawi's economy as it contributes at least 11% to GDP. There is a growing export market regionally and internationally which the new National Livestock Policy and Malawi 2063 are geared to take advantage of to exploit. Trade in livestock and livestock products is subject to control measures and barriers that include SPS measures. There is increasing export of day old chicks to Mozambique, beef and goat meat to Mozambique and internationally to UAE, Bangladesh and the middle East and tonnes of hides and skins to Tanzania. Malawi must therefore keep abreast of the disease status in the various livestock populations in the country. Disease surveillance is key to determine the disease status in livestock across the different livestock farming systems. The Government is mandated to carry out animal disease surveillance to help in decision making and also assure the consumers and trading partners of the safety of the products that come from animals. This would enable the country to detect diseases early and control of disease hence safe and quality products as well as increase confidence in the products on the market. Currently, due to limited resources and Government policy on disease control, the majority of the surveillance activities are *ad hoc* focusing on trade sensitive diseases.

Further, experience shows that the country is being faced by emerging and re-emerging diseases some of which are of public health importance such as anthrax, which occurred for the first time in 2018 and Peste des Petits Ruminants (PPR), Highly Pathogenic Avian Influenza (HPAI) and brucellosis that are endemic or have been recorded in the surrounding countries. Salmonella free flocks are a requirement for a country to trade in day old chicks among other poultry products. Majority of livestock is reared by smallholder farmers, including women and the youth, who are vulnerable, and implementing this project would improve their income. This calls for scaling up of disease surveillance activities to ensure that both animals and humans are protected in addition to maintaining foreign markets for animal products. To implement this investment option, a total of **USD2,514,400** is required.

4.3.2 Develop a Disease Surveillance System for ornamental fish

Malawi has a unique range of freshwater fish species, notably from three lakes and the Shire River system. Most fish is consumed locally, and indeed Malawi is a net importer of fish, most of which comes from the region. Exports are dominated by live ornamental fish which though limited in volume have a high unit value (specialty product).

EU regulations lay down detailed requirements for the importation of live ornamental fish. Council Directive 2006/88//EC requires importers of ornamental aquatic animals to register in the importing country and to notify the relevant authority at least 24 hours in advance of any import. All consignments must be accompanied by an appropriate health certificate stating that the animal is free of specified diseases. However, these regulations focus their attention on countries exporting cold water ornamental fish, with the requirements for warm water fish exporters being considerably being more relaxed. The main requirement in the case of Malawi, therefore, is that there is need to conduct regular active surveillance of ornamental fish diseases so that Malawi is able to complete some additional declarations on the health certificate. The majority of people involved in capturing fish from the lakes and rivers are the poor around the sites. Implementing this investment option would clear the hindrances and improve trade thereby increasing income for the poor. To achieve this, a total of **USD403, 020** is required as an up-front and on-going investment.

4.3.3 Develop a Surveillance System for Milk and Milk products

Whilst Malawi is a net importer of milk and dairy products, there are significant exports of dairy products, predominantly to Zimbabwe and other countries in the region. Food safety systems in milk processing are well-established, with the major facilities implementing HACCP food safety systems. The Central Veterinary Laboratory is mandated to ensure that these food safety requirements are achieved.

The dairy value chain involves about 168,000 farmers organised in 21,000 groups, majority of whom are poor, women and the youth, including those with disabilities. In the production therefore, lack of trade drives them into deeper poverty. The export value of dairy products has ranged from USD35,000 – USD50,000 and growing, while the domestic market has been higher and requiring food safety measures. Continued lack of a surveillance system threatens this trade and income for the farmers.

However, effective surveillance system for milk and milk products needs to be in place for effective control of quality of the products. This will involve getting samples from different stages of the value chain of milk. This will also require multiple interventions/controls along the value chain including at the level of animal feed producers, veterinary products and service providers and in the bulking and handling of milk and at the stage of processing plants. This also entails good agricultural practices, appropriate transportation and handling of milk and processing including of all food safety measures. Investment in this value chain would lead to reduced losses, introduction of grading of milk thereby increasing income from milk and dairy products and increased milk on market among others. A total investment of **USD1, 270,660.00** is required to resolve the SPS issues and ease trade.

4.3.4 Upgrade Central Veterinary Laboratory capacity for Surveillance System for Trade Sensitive Diseases (FMD, RVF, PPR, HPAI, Anthrax, Brucellosis, bovine Tuberculosis, AFB, EFB, Nosema, Varroa)

The livestock industry in Malawi is of significant importance as a contributing sector to Malawi's export and is subject to governmental promotion measures. Low productivity of livestock caused by diseases not only affects farmers' income, but also trade for both domestic and international markets. The newly approved National Livestock Policy clearly spells out the need to improve livestock productivity and safeguard the health of animals and the general public including SPS measures in order to increase regional and international trade and livestock’s contribution to GDP by at least 50%. Priority, therefore, ought to be given to improving the capacity of the Central Veterinary Laboratory (CVL), which is the only centre responsible for animal disease diagnosis, surveillance, and investigation as well as inspection of hatcheries, abattoirs, quarantine facilities and processing plants of products of animal origin.

However, CVL suffers chronic inadequate veterinary diagnostic techniques and aging equipment. This has caused the CVL to fail to have accredited methods to fulfil its expected function such as disease confirmation and pathogen identification. Lack of surveillance system in honey diseases for example led to failure for a Malawi company to export honey to China where a market of 10,000 Metric Tonnes was available and the company had the capacity to export. In addition, a total value of USD4.4 million worth of honey and honey products have been rejected access to the international market due to various SPS challenges. Currently, there is also a growing market for beef and goat meat in the UAE where Nyama World, another Malawi company exports, but it is under threat because the CVL is not able to conduct regular surveillance for FMD which has occurred in the offtake zones.

There is need therefore, to improve the capacity of the laboratory in various fields including human and infrastructure capacities. Training of staff will improve their sample collection, handling and testing capacity and efficiency, procurement of modern testing equipment and modernizing the laboratory infrastructure are thus among the urgent needs of the country. Foot and Mouth Disease (FMD) is among the priority diseases that affect trade, therefore, there is need for intervention to resolve the gap and implement active surveillance of the diseases and improving the capacity of the laboratory. Upgrading the laboratory capacity would improve detection and control of animal diseases which will lead to improved production and productivity of animals, reduced losses, increase in income from livestock activities and reduction in risk from contracting zoonotic diseases. To implement this investment option, a total of **USD1, 297,588** is required.

4.3.5 Creating an FMD free zone

Foot-and-mouth disease is endemic in the major livestock keeping northern and southern regions in Malawi with serious consequences due to its ability to affect a wide range of livestock species and restrictions in trade during outbreaks. Negative impacts are experienced by cattle, goats, sheep and pig farming households, traders and consumers due to frequent bans in livestock trade, slaughter and movement during outbreaks which are occurring in increasing frequency and area coverage in Malawi in recent times. The country has recorded at least six outbreaks of FMD since 2005 and the frequent outbreaks of the disease are mainly attributed to failure to maintain recommended annual herd vaccination coverage in the high risk areas, violation of livestock movement and quarantine restrictions, delay in supply of vaccines and weak capacity to implement regulatory measures among others. Malawi has a growing export market in the UAE and the Middle East which requires meat to come from areas free from trade sensitive zones. Most of cattle ranches and farming of susceptible livestock species occur in the zones of the South and the North that are FMD endemic. This can be achieved through improving the disease control infrastructure, ensuring farm bio-safety and bio-security, bi-annual FMD vaccination, regular disease surveillance, sensitization of value chain players among others.

The measures when properly instituted and followed will result into increased income for farmers as there will be infrequent outbreaks and trade restrictions. In addition, animals will not suffer from deaths, weight loss, abortions, milk losses, stunted growth etc. Furthermore, Malawi will be able to trade in animal and animal products in regional and international markets as confidence on the country will be high. A total of **USD1, 832,240** is required to implement this option.

4.3.6 Capacity Building in GAPs, GVPs, HACCP for Milk and Milk Products.

The dairy sector is the flag carrier for the Department of Animal Health and Livestock Development in the country and the government has put special emphasis on the expansion of the sector through establishment of Milk Bulking Groups where smallholder farmers collect their milk. This is used as one of the tools to alleviate poverty, create wealth and improve

nutrition. A total of 168,000 farmers organized in 21,000 groups are involved in the dairy sector in Malawi. General hygiene practices are highly associated with rejection of milk and milk products exports. Milk cold chain infrastructure features consistent and adjustable temperatures to keep milk at optimum level to allow farmers contact the buyers for increased income and facilitate value addition for increased export volumes and values. The most important advantage of maintaining the cold chain is to safeguard milk safety and quality because checks at the milk bulking centre enables farmers to produce clean and fresh milk to meet required standard for the market. It is, therefore, an important to maintain milk at 4C˚ and below so as ensure its utmost quality.

Likewise, GVPs in the dairy sector are critical to avoid veterinary drug residues and buildup of antimicrobial resistance. To ensure consumers of milk and milk products that are free of residues, it is important to promote good veterinary practices. Continued failure to invest in this would result in continued milk rejection at market and failure to export cheese and other milk products which currently have a market in Zimbabwe. The investment would require a total of **USD554, 310**.

4.4 Legume and oil seeds Value Chains

Selected legume and oil seed crop value chains (groundnuts, soya bean, common bean, pigeon peas, sesame, macadamia and cotton) are among the crops whose products are traded at national, regional and international markets in Malawi for human and livestock consumption and industrial use. However, there are sanitary and phytosanitary (SPS) measures that have to be addressed to meet the national, regional and international standards and requirements in the traded plant products. Some of the SPS issues are crop diseases in product consignments which are to be regulated by not being transferred together with the seed consignment from one producing area to another. Diseases such as rust in soya bean, common bean and groundnuts are regulated because they contaminate the seed consignment and may be carried together as inoculum in the seed consignment if not treated, which could establish in a crop field when the seed is grown where the disease does not exist or is regulated. Rust also reduces yield through destroying the leaves which are the factory for manufacturing plant food.

There is a requirement that a legume seed crop should be inspected during active growth and found free from the rust disease and many other virus diseases such as rosette in groundnuts, soya bean mosaic disease (SMV), one of the seed borne disease in soya bean, aphid borne mosaic virus disease and many other fungal diseases. In addition, insect pests (live insects, eggs, and larvae) may infest the crop product earmarked for trade such as bruchids in legume grains. The other problems are pesticide residues which are not compliant with the maximum residue limits (MRLs) required by the importing countries. Products in some commodities when consumed induce allergies.

In order for the NPPO to carry out its roles and responsibilities in implementing the SPS requirements for traded plant products, it requires a vibrant system including capacities in human, institutional and infrastructure (quarantine facility, laboratories and their functional equipment). Most of the Plant Health laboratories have dilapidated equipment some of which are obsolete and non-functional. Staff (Plant Health Officers) require basic skills training for them to ably undertake their roles and responsibilities in SPS trade facilitation. Training in pest surveillance (ISPM 6) would be one of the training that is needed to guide in the establishment of pest list for the traded plant products. Pest risk analysis (ISPM 2) and other ISPMs related to trade facilitation would be paramount to capacitate NPPO staff at border posts and inland SPS offices and facilities through the skills training. These will be necessary for ease of market access initiatives that could be required by trading partners as may be

requested by the clients in plant products trade for their product to meet the required standards.

It is against this background that capacity building investment options for legume and oilseed crop products (groundnuts, soya bean, common bean, pigeon peas, sesame, macadamia, and cotton seeds) were generated. A total of four (4) investment options cutting across the selected legume and oil seed crop value chains were generated and are briefly described below:

4.4.1 Capacity building in pest surveillance and diagnostic testing and personnel phytosanitary certification skills development for legumes and oilseed

Pest and disease surveillance is key in ascertaining the pest and disease status in legumes and oilseed crop production in Malawi. The government of Malawi through the Ministry of Agriculture (MoA), Department of Agricultural Research Services (DARS) is mandated to carry out plant pests and disease surveillance to help in decision making and also assure the consumers of the safety of the products that come from legume and oilseed crops. Currently, due to limited resources and government policy on plant pest and disease control, the majority of the surveillance activities focus on diseases that are trade sensitive.

Reports show that seed consignments may not be allowed to be exported due to problems of excessive disease incidence and severity in legume and oilseed crops such as rust disease in legume crops which could contaminate the seed consignment and be carried together to destination countries where they are exported. This calls for scaling up of disease surveillance and diagnostic activities to ensure that both legume and oilseed crops are free from pest and disease attack. This calls for the procurement of laboratory equipment, training of staff in use of equipment and conduct surveillance, ICT infrastructure to help in PRA. The total cost of building capacity in pest surveillance and diagnostic testing and personnel certification capacity for legume and oilseed is estimated at **USD 1,186,700.**

4.4.2 Accreditation of MRL testing method for legumes and oilseed

Credible testing in Maximum Residue Limits (MRLs) in legume grain and oilseed crop products must be in place in order for exporters to ensure compliance in maximum residue limits with destination market, including domestic markets. Malawi's principal market for legume grain and oilseed products is India, China, and the European market. Most products, particularly cotton, soya bean, groundnuts, pigeon pea, common beans, have been subjected to constant interceptions into the regional and EU market due to pesticide residues. Farmers/growers utilize large quantities of pesticides in order to control the pests that devastate the crops from where traded products are sourced.

Currently Malawian exporters of agri-food products have pesticide tests conducted outside the country, because the existing laboratories are not accredited. Having the local laboratories accredited would negate the need to use external laboratories. This option will establish internationally accredited pesticide residue testing capability in Malawi.

Accredited testing capacity is arguably more important in the case of regional, India, Asian and EU markets where far stricter limits and associated testing requirements are applied and needed. The assumption of this capacity building is that a government owned accredited testing Laboratory at DARS would be reasonable even though some concerns surround the turnaround time, which would be considered to be usually longer than the private one. It should also be noted that the Malawi Bureau of Standards runs a pesticide laboratory, which however is not accredited. The process is however underway to have the laboratory accredited.

Accrediting the MRL testing laboratories in DARS and the MBS would increase the confidence in the test results which will bring confidence in markets access, cost of testing, reduction in time of waiting for the product to be dispatched for destination market, it will remove doubt in competence of the staff undertaking the MRL testing.

The total cost of accreditation of the MRL testing method for legume and oil seed crop products is estimated at **USD 297,071.38**.

4.4.3 Capacity building in GAPS, pre & PHH and HACCP for legumes and oilseeds

The application of good agriculture practices (GAP) are paramount in the management of SPS measures that affect the facilitation of international trade. It is observed that the selected legume and oilseed value chains require adherence to GAP so that the produce obtained are of good quality. Extension staff in the DAES of the MoA, Plant Health Staff in the DARS need to be trained in GAP so that the skills can be transferred to the farmers who in turn will make sure that the products obtained will be of good quality. Training manuals need to be developed, validated and used. Trainers need to be trained so that quality training is delivered. Extension circulars would be needed to supplement the training manuals.

Some of the legume and oilseed crop products exported from Malawi to the United Kingdom requires HACCP certification as part of the private food safety standards in that country. There have been potential commercial opportunities to export legume and oilseed products from Malawi to regional and EU markets.

The total cost of capacity building in GAPS, pre & PHH and HACCP for legume and oil seed crop products is estimated at **USD 57,620.22**.

4.4.4 Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds

Development of resistant crop varieties to pests and diseases have been one of the management option for pests and disease control. The process of coming up with resistant crop varieties covers many stages and requires time. The stages include introduction of resistant genes from various sources within or from outside the country. Breeders requests the introduction through the importation of genotypes with desired traits of pest and disease resistance or through hybridization that can take place where selected genotypes with consistent levels of resistance to target pests and diseases would be tested and evaluated at different agro-ecologies for their adaptability and acceptance by the end users. The testing will be done covering a certain period (3-7 years) including its promotion strategies.

After the superior variety has been identified through testing, it is recommended for registration and wider use by the farmers (end users). The registration call for the rapid multiplication of the variety to produce breeder, basic and certified seeds for the farming industry of these selected legume and oilseed value chains. The SPS issue is the provision of phytosanitary services through the inspection for pests and diseases in the seed crop for compliance to SPS standards and requirements in the seed consignment. Some importing countries will provide the condition that the imported seed should have been inspected during active growth and the mother plants were found free from the regulated or quarantine pests.

Challenges for seed health testing in Malawi include inadequate facilities, lack of experienced analysts, limited knowledge of where to find reference materials when submitting seed health testing methods, and limited research in seed science and seed health testing. This option will develop internationally recognized seed testing and phytosanitary certification services.

The total cost of developing a disease resistant legume and oilseed crop variety is estimated at **USD349, 921.40**.

5.0 Results

Overall, an estimated total cost of approximately **USD15 Million** is needed to implement all the nineteen (19) SPS Investments options, which are estimated to generate about USD135 Million worth of additional exports annually. Table 7 gives a sectoral breakdown of the required costs of SPS investments per value chain and the potential trade likely to be generated.

Table 7: Sectoral Breakdown of Costs of SPS Investments and Potential Trade

Sector	Cost of Implementation	Change in absolute value of exports
Horticulture	2,807,830	5,825,500
Honey	1,446,700	23,000,000
Livestock's Incl. Dairy (milk) & Fish	7,888,218	33,193,500
Legumes and oilseeds	2,891,312	73,440 000
Total	**15,034,060**	**135,,459,000**

Figures 6-9 presents the results of the prioritization framework using outranking in the D-Sight software package based on the decision criteria and weights agreed by stakeholders. Figure 6 shows the main result of the analysis. The analysis shows that the following were the top eight (8) SPS Investment options:

- Capacity building in GAPS, pre & PHH and HACCP for legumes and oilseeds
- Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey
- Capacity building of value chain players on GAPs & PHH and HACCP for horticulture products
- Design and implementation of GAPs, GHP and HACCP for honey products
- Pest Risk Analysis (PRA) for horticulture products
- Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds
- Develop a traceability plan and establish a digital traceability system for honey
- Accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products

On the other hand, the following five (5) SPS investment options ranked as the lowest:

- Develop a disease surveillance system for ornamental fish
- Develop a surveillance system for milk and milk products
- Capacity building in GAPs, Good Veterinary Practice (GVP), HACCP for milk and milk products
- Surveillance and Residue Monitoring Plan in horticulture products
- Accreditation of MRL testing method for legumes and oilseed
- Develop a regulatory framework for honey

This means that the top ranked options would bring the best benefits across trade, productivity, and social impacts than the lower ranked ones. It should, however, be noted that because an option ranked low does not imply that it's not important for implementation, but rather, it simply shows that, in terms of priority setting, based on assigned costs and flow of benefits, a lower ranked option is not the best option to be implemented now given limited resources.

Figure 6: Ranking of the SPS Investments Options Using Baseline Model

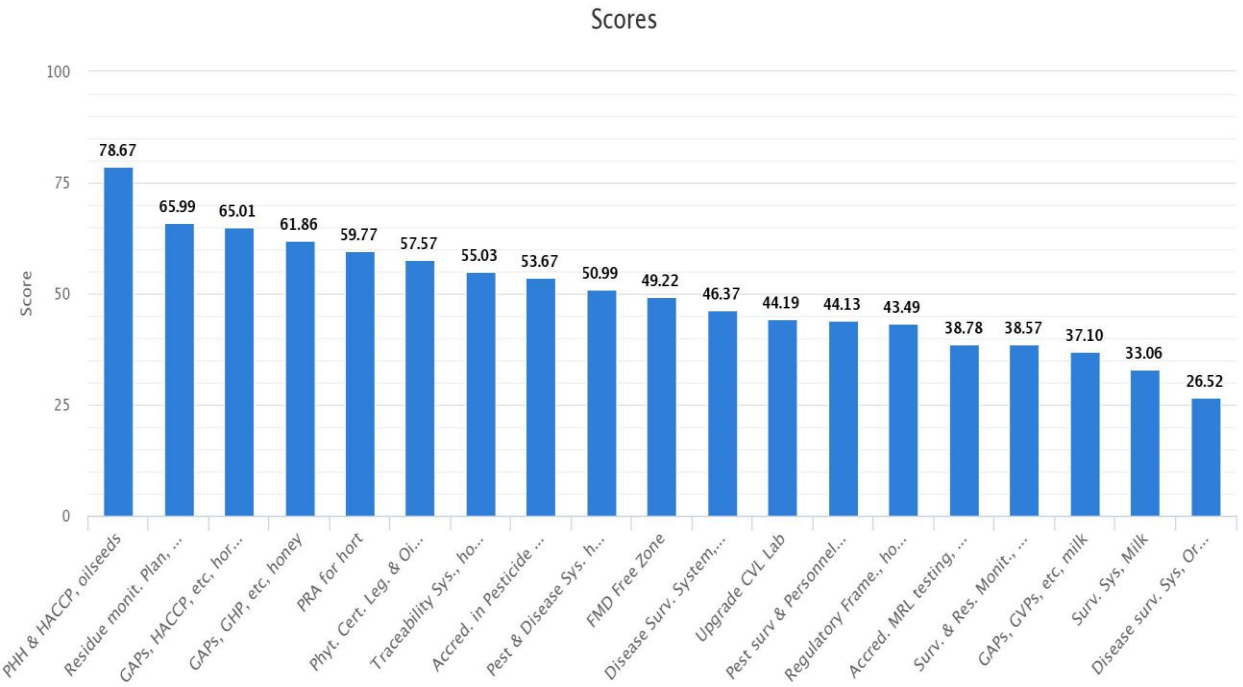
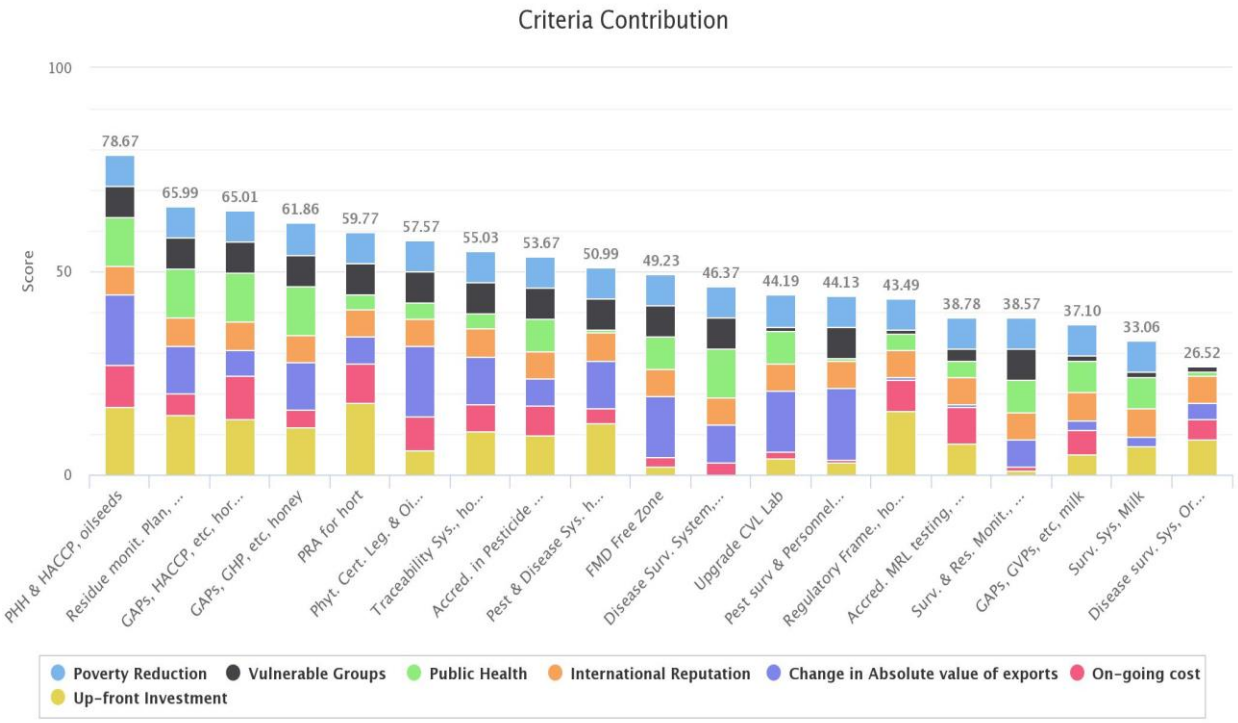


Figure 7 explains the contribution of each decision criteria towards the overall performance of a capacity building investment option. In effect, it is noticeable that the top ranked options have greater contribution from almost all decision criteria than lower ranked options. For instance, you would notice that the lowest ranked option, i.e. Develop a disease surveillance system for ornamental fish, had no contribution from poverty reduction, very minimal contribution from impact on the vulnerable groups and public health, because the value chain involves less poor players and the product is mostly destined for the export market. On the other hand, the top ranked option on oilseeds/legumes had good contributions from all the decision criteria.

Figure 7: Criteria Contribution for Baseline Model



Ranking of the SPS Investments Options Using Equal Weights Model

To test the robustness of the above result, a sensitive analysis was performed by setting the weights equal. The results are shown in Figure 7 below. In the equal weights scenario, the top eight ranked best options in the main results (Baseline Model) remained among the top eight options except that there are some shifts in positions. Similarly, the five lowest ranked options remained in the bottom five. There is however, observable movement between the 12th and 14th positions, where the Upgrading of CVL capacity for surveillance system for trade sensitive diseases, and the Development of a regulatory framework for honey, which ranked 12th and 14th positions, respectively have switched places. Thus, the former which was in 12th place has now moved to the 14th place whereas the later which was in 14th position in the Baseline Model has now moved to the 12th position in the equal weights Model. Again, Figure 8 shows the criteria contribution of the equal weights model. Despite the few shifts in positions, it is safe to say that the result is fairly robust.

Figure 8: Ranking of the SPS Investments Options Using Equal Weights Model

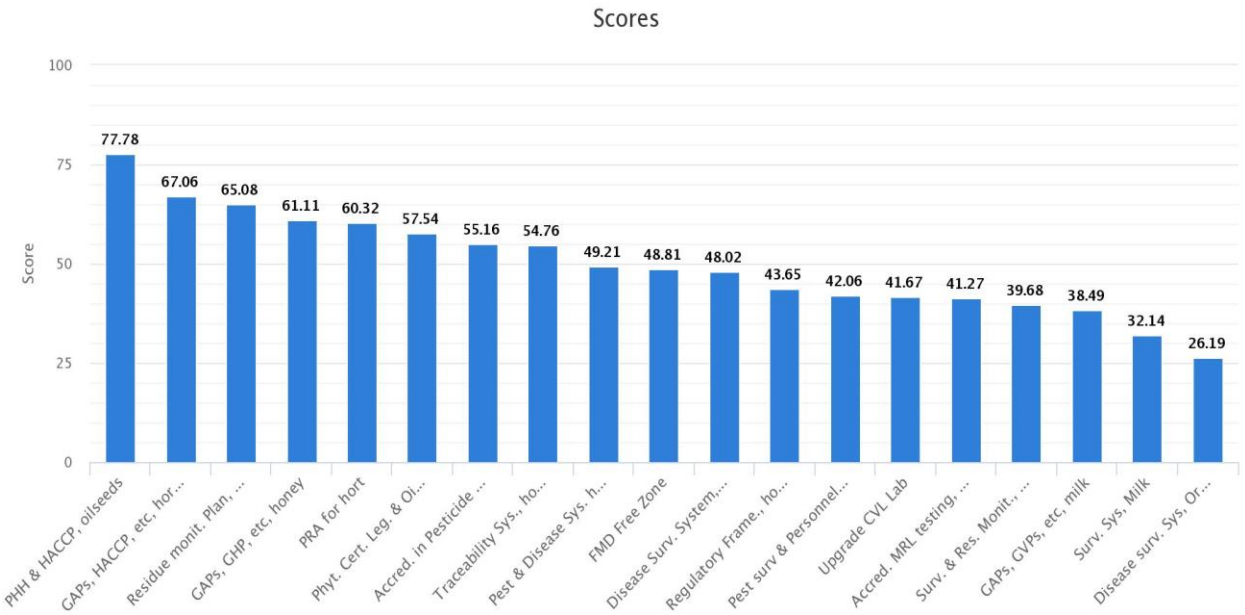
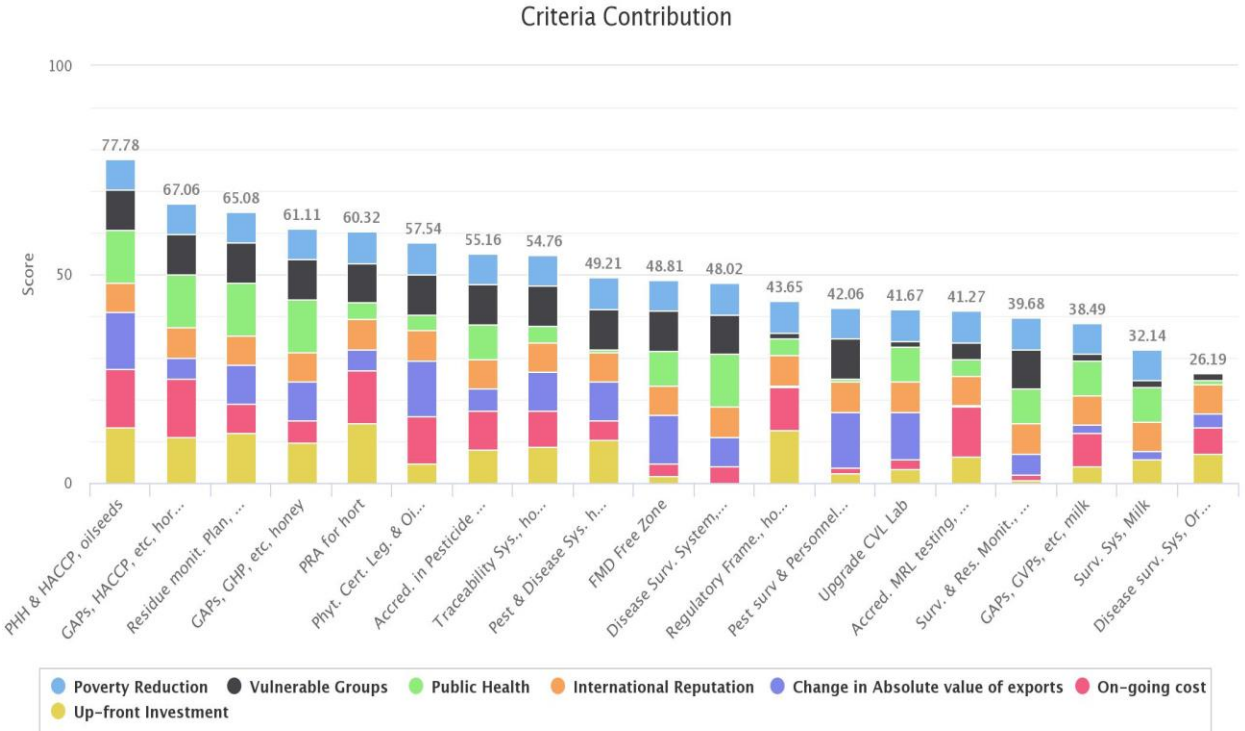


Figure 9: Criteria Contribution for Equal Weights Model



6.0 Conclusion

This report presents the outcomes of 19 SPS capacity building options that were ranked based on a structured process of identifying the SPS capacity building options that are relevant for market access, prior agreed objectives (called decision criteria), and agreed weights assigned to the decision criteria. The actual priority setting was carried out using Multi-Criteria Decision Analysis (MCDA) and powered by the D-Sight software package. In all, a total of approximately USD 15 million is required to implement all the 19 SPS Investment Options whose estimated trade impact could be USD85.8 million annually. The following are, however, the first eight (8) options that consistently ranked above the others and therefore are desirable as first best choices:

- Capacity building in GAPS, pre & PHH and HACCP for legumes and oilseeds
- Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey
- Capacity building of value chain players on GAPs & PHH and HACCP for horticulture products
- Design and implementation of GAPs, GHP and HACCP for honey products
- Pest Risk Analysis (PRA) for horticulture products
- Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds
- Develop a traceability plan and establish a digital traceability system for honey
- Accreditation in pesticides, heavy metals, foreign objects and microbial testing for horticultural products

While the following consistently ranked low. However, they should still be considered for implementation once resources are available:

- Develop a disease surveillance system for ornamental fish
- Develop a surveillance system for milk and milk products
- Capacity building in GAPs, Good Veterinary Practice (GVP), HACCP for milk and milk products
- Surveillance and Residue Monitoring Plan in horticulture products
- Accreditation of MRL testing method for legumes and oilseed
- Develop a regulatory framework for honey

Again, it must be noted that the ranking of certain capacity building investment options as low does not presuppose that they are not important. Rather, it simply means that, based on agreed objectives and limited resources, they do not come as first priorities. With time and availability of resources, all these capacity building investment needs must be resolved. It is also important to remember that this document is a 'living document', thus, it must be revised regularly, particularly, once new data and/or a better data becomes available, and/or new SPS issues emerged or some of these have been implemented and are no more relevant.

At the outset, the results from this framework are based on the availability and quality of data. As such, the results must be revised in an on-going basis once better data becomes available. In this regard, as part of the COMESA P-IMA project, some officers were trained as P-IMA National Experts to assist in subsequent revision/re-application of the framework in Malawi.

References

International Trade Centre (2018). Exploring Malawi's export potential. ITC, Geneva.

EU Rapid Alert System for Food and Feed (RASFF)

ITC Export Potential Map: https://exportpotential.intracen.org/

ITC Trade Map: https://trademap.org/

U.S. Import Refusal Report: https://www.accessdata.fda.gov/scripts/ImportRefusals/index.cfm

European Union Notification System for Plant Health Interceptions – EUROPHYT: https://ec.europa.eu/food/plant/plant_health_biosecurity/europhyt/interceptions_en

Annexes

Annex 1: 2012 Versus 2022 Capacity Building Options (CBOs)

2012 SPS CBOs for Malawi	2022 CBOs included in the analysis
1. Post-harvest treatment for mangoes 2. Aflatoxin controls for groundnuts 3. Aflatoxin controls for maize 4. Mycotoxin testing capacity 5. Compliance with SPS requirements for honey exports 6. Pesticide controls for tobacco 7. Pesticide controls for pulses 8. Pesticide controls for maize 9. Pesticide controls for tea 10. Pesticide residue testing capacity 11. Animal health controls for (live ornamental) fish exports 12. Compliance with hygiene requirements for milk and dairy product exports 13. Virus indexing capacity for planting materials 14. Compliance with SPS requirements for chilli sauce exports 15. Seed inspection and certification capacity 16. Animal health controls for day old chick exports 17. Capacity for Hazard Analysis and Critical Control Point (HACCP) certification in a variety of sectors 18. SPS controls for cotton	1. Accreditation in pesticides, heavy metal, foreign objects, and microbial testing for horticulture product 2. Capacity building of value chain players on GAPS, pre & PHH and HACCP for horticulture products 3. Pest risk analysis for horticulture products 4. Surveillance and residue monitoring in horticulture products 5. Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey 6. Develop a pest and disease surveillance system in honey (Varroa, AFB, EFB, Nosema etc) 7. Design and implementation of GAPs, GHP and HACCP for honey products 8. Develop a traceability plan and establish a digital traceability system for honey 9. Develop a regulatory framework for honey 10. Develop a disease surveillance system for livestock (day old chicks, beef, goats, hides and skins) 11. Develop a disease surveillance system for ornamental fish 12. Develop a surveillance system for milk and milk products 13. Upgrade lab (CVL) capacity for surveillance system for trade sensitive diseases 14. Creating an FMD free zone 15. Capacity building in GAPs, GVPs, HACCP for milk and milk products. 16. Pest surveillance and diagnostic testing and personnel certification capacity for legumes and oilseed 17. Accreditation of MRL testing method for legumes and oilseed 18. Capacity Building in pre & PHH and HACCP 19. Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds

Annex 2: Capacity Building Options (CBOs) Information Cards

Annex 3.1 Horticulture

3.1.1 Accreditation in pesticides, heavy metal, foreign objects, and microbial testing for horticulture products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	231,500	Development of the accrediting system (US$ 9,500), Training of staff and farmers (growers) (US$ 12,500), Reference materials, SOPs, manuals and standards (US$ 120,000), Auditing of the system and ICT equipment (US$ 150,000), Procurement of equipment (US$ 60,000)	High
On-going cost	US$	79,610	Various consumable stores (US$, 12,400), Reagents and chemicals (US$, 24,008.00), PPEs (US$, 18,000.), Vehicle maintenance (US$, 6,002.08), Staff per diems (US$14,400.06), Communication (Telephone and internet) (US$, 4,800)	High
TRADE IMPACTS				
Change in absolute value of exports	US$	5,825,500	According to ITC export potential estimates, Malawi holds untapped export potential of $713,600 in fruits (mangoes & Guavas) and hot pepper ($451,500). This is a proxy for the potential change in exports by 5 years.	
International Reputation	Yes/No	Yes	Malawi is considered high risk country in term of food safety and security; this CBO will increase confidence in the country. Accreditation give competence and confidence in the degree of testing	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	Lots of mangoes are consumed but less herbs and spices therefore, less impact	
Poverty impact	Scaling number (-3 to +3)	3	5000 out-growers for Malawi Mangoes Ltd, 800 farmers for Thanthwe and 46 for East African Brothers	
Impact on vulnerable groups	Yes/No	Yes	Most of the value chain players and consumers are in this group and are involved in the production therefore will impact on their livelihoods	

3.1.2 Capacity building of value chain players on GAPS, pre & PHH and HACCP for horticulture products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US $	92,900.	Training of trainers ($14,400), Training manual development ($7,200.06), Training manual validation ($9,600.04), Training for staff, farmers, SMEs in GAP, pre and PHH and HACCP ($14,400.06), HACCP certification (US $ 47,300.53)	High
On-going cost	US $	12,020	Conference hall hiring ($3,120.01), Printing costs and stationery ($ 2,100.01), Communication (1,000), Transport expenses ($1,000), Servicing and repair of equipment (US $ 5,800.02)	High
TRADE IMPACTS				
Change in absolute value of exports	US $	5,825,500	According to ITC export potential estimates, Malawi holds untapped export potential of $713,600 in fruits (mangoes & Guavas) and hot pepper ($451,500). This is a proxy for the potential change in exports by 5 years	
International Reputation	Yes/No	Yes	Safe and High-quality product supplied on the market	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	3	Health of the plants, plants able to resist infection and infestation, less contamination, prevention is better than cure	
Poverty impact	Scaling number (-3 to +3)	3	Increase income,	
Impact on vulnerable groups	Yes/No	Yes	Increase income	

3.1.3 Pest Risk Analysis and Integrated pest management for horticulture products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US $	115,100	PRA - $55,100 IPM - $60,000	High
On-going cost	US $	12,250	Hire of training venue, Travel (hall hiring, fuel and staff per diems) (US $ 7,650), Communication (Telephone and internet connectivity) (US $ 4,600)	High
TRADE IMPACTS				
Change in absolute value of exports	US $	5,825,500	According to ITC export potential estimates, Malawi holds untapped export potential of $713,600 in fruits (mangoes & Guavas) and hot pepper ($451,500). This is a proxy for the potential change in exports by 5 years	
International Reputation	Yes/No	Yes	Surety of evidence that the products will be free from pests, exported product are from pest free area	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	1	An indirect impact will occur as PRA allows elimination of pest	
Poverty impact	Scaling number (-3 to +3)	3	Increase export as importing country will demand pest risk analysis, Reduction in losses	
Impact on vulnerable groups	Yes/No	Yes	Increase in output	

3.1.4 . Surveillance and residue monitoring in horticulture products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US $	1,630,100	Cost of pest surveillance ($1,006,000), Staff training in pest diagnostics, PRA and surveillance ($62,600), Purchase of laboratory equipment ($320,000), Purchase of 2 motor vehicles ($47,000), ICT facilities ($15,000), Quarantine facility ($10,000), Equipment for residue monitoring (US$1 50,000.00)	High
On-going cost	US $	706,600	Reagents, culture media and cleaning materials ($67,750), PPEs ($1,200), Plant (product) sample collection ($600,000), vehicle maintenance and repair ($7,650), Communication ($30,000)	High
TRADE IMPACTS				
Change in absolute value of exports	US $	5,825,500	According to ITC export potential estimates, Malawi holds untapped export potential of $713,600 in fruits (mangoes & Guavas) and hot pepper ($451,500). This is a proxy for the potential change in exports by 5 years	
International Reputation	Yes/No	Yes	Malawi is considered a high-risk country in terms of food safety. This CBO will increase confidence in the Country	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	The majority of the value chain players consume mangoes but less chillies and pepper, through consumption of clean products this will have a medium impact on the consumers	
Poverty impact	Scaling number (-3 to +3)	3	The horticulture products will be accepted on the market as they will be deemed free from residue contamination and products that are clean. The products will be easily traded without problems	
Impact on vulnerable groups	Yes/No	Yes	Much of the VC players and consumers are in this group therefore high income	

Annex: 3.2 Honey

3.2.1 Develop a residue (Pesticide and Veterinary products) monitoring plan in Honey

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		$71,000	Development of Terms of Reference (15000); procurement of a consultant (45000); validation workshop (11000)	High
On-going cost		$142,000	Sampling (80000), testing of product (30000), vehicle maintenance (20000), communication (12000)	High
TRADE IMPACTS				
Change in absolute value of exports		$23 million	The honey industry reported $4.6 million export lost into the EU, Japan, UK, China and the RSA markets for honey and wax due to failure to meet SPS compliance requirements Projected over five years, this would be US$23 million	High
International Reputation	Yes/No	Yes	Existence of a residue monitoring plan would increase confidence of customers from the international market	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	+3	Will allow monitoring of pesticide and veterinary drug residues, that will ensure that domestically consumed honey are also safe as for the exported honey	High
Poverty impact	Scaling number (-3 to +3)	+3	Having a residue-monitoring plan will enable accessibility of Malawi honey to the international market, hence alleviating poverty of beekeepers and processors. A total of USD 4.4 has been lost due to trade rejection owing to lack of disease surveillance and residue monitoring plans	High
Impact on vulnerable groups	Yes/No	Yes	Modern honey farming technologies are friendly to vulnerable groups, especially women and youth. Vulnerable groups are therefore involved in honey production and returns from honey sales would therefore have a positive impact on vulnerable groups. Furthermore, other key players in the honey value chain, such as Kwithu Kitchen, are women centered and supports women involvement in honey. African Honey and Bee Products also does social responsibility programmes such as supporting sports targeting the youth, hence positive social impact on the youth.	High

3.2.2 Develop a pest and disease surveillance system in honey (Varroa, AFB, EFB, Nosema etc)

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		$190,000	Development of a disease surveillance plan and actions (45000) , training field and lab staff (40000), procurement of laboratory and sampling equipment(30000), and motor vehicles (75000)	Medium
On-going cost		$227,000	Procurement of laboratory reagents (45000), PPE(40000), sample collection (107000), vehicle running expenses(15000), communication (20000)	Medium
TRADE IMPACTS				
Change in absolute value of exports		$23 million	The honey industry reported $4.6 million export lost into the EU, Japan, UK, China and the RSA markets for honey and wax due to failure to meet SPS compliance requirements Projected over five years, this would be US$23 million	High
International Reputation	Yes/No	Yes	Having a pest and disease surveillance system in place is a demonstration of the ability to monitor and control pests and bee diseases, and would increase confidence in the target markets, hence increasing international reputation, since pest and disease surveillance system is a requirement in some honey markets	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	0	No impact on domestic public health because the pests and diseases of bees are not zoonotic (cannot be transmitted to humans)	High
Poverty impact	Scaling number (-3 to +3)	+3	Pests and disease monitoring (and control) will enable increased production as well as increased exports due to confidence in the Malawi honey, which will result in increased incomes leading to poverty reduction in players in the honey value chain	High
Impact on vulnerable groups	Yes/No	Yes	Vulnerable groups are involved in honey production hence increased production and exports will have a positive impact on them	

3.2.3 Design and implementation of GAPs, GHP and HACCP for honey products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		$214,000	The plan is to review existing GAPs guidelines for adequacy, and where required, review the guidelines, or develop new ones where none exist. Will also develop HACCP guideline for the honey value chain. The guidelines developed will be used to develop training manuals (for GAPs, GHP and HACCP) for use to conduct training of trainers in the three regions of the country. The estimations are based on the costs to be incurred to conduct these activities	High
On-going cost		$197,000	On-going costs include costs to conduct refresher training the trainers and training of new players in the honey value chain	High
TRADE IMPACTS				
Change in absolute value of exports		$23 million	The honey industry reported $4.6 million export lost into the EU, Japan, UK, China and the RSA markets for honey and wax due to failure to meet SPS compliance requirements Projected over five years, this would be US$23 million	
International Reputation	Yes/No	Yes	GAP and GHP are practices that will ensure that the production, processing and handling of honey minimize risks of food safety hazards. On the other hand, HACCP is a requirement to get into some international markets. Embracing these practices by players in the honey value chain would therefore facilitate the production of safe and acceptable products that would improve the international reputation of Malawi honey.	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	+3	Embracing these practices by players in the honey value chain would facilitate the production of safe products that would have a positive impact on domestic public health.	High
Poverty impact	Scaling number (-3 to +3)	+3	GAP, GHP and HACCP will result in the acceptability of the honey on the export market. This will therefore result in increased incomes for the players in the honey value chain.	
Impact on vulnerable groups	Yes/No	Yes	Vulnerable groups are involved in honey production hence increased exports will have a positive impact on them due to increased incomes	

3.2.4 Develop a traceability plan and establish a digital traceability system for honey

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	215,000	Drafting of ToRs for consultancy to development of traceability plan and digital system, procurement of consultant and conducting a validation workshop	Medium
On-going cost	US$	90,500	Training of beekeepers, enterprises, regulators on the how to implement a traceability system	Medium
TRADE IMPACTS				
Change in absolute value of exports	US$	23 million	The honey industry reported $4.6 million export lost into the EU, Japan, UK, China and the RSA markets for honey and wax due to failure to meet SPS compliance requirements Projected over five years, this would be US$23 million	High
International Reputation	Yes/No	Yes	If players in the honey value chain have a well-established traceability system, this will gives confidence to international market, hence increasing the reputation.	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	+1	This capacity building option has some direct link to domestic public health because it would also be helpful on issues relating to product recall of non-complying products on the local market, hence preventing consumption unsafe honey	High
Poverty impact	Scaling number (-3 to +3)	+3	Will increase confidence and acceptability in destination markets hence increasing exports and incomes	High
Impact on vulnerable groups	Yes/No	Yes	Will increase confidence and acceptability in destination markets, and considering that vulnerable groups are involved in production, this will have a positive impact on them	High

3.2.5 Develop a regulatory framework for honey

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	66,000	Development of ToRs for engaging a consultant to develop a regulatory framework, procurement of a consultant, and stakeholder consultation of the draft regulation	Medium
On-going cost	US$	34,200	Submission of draft regulation for approval and gazetting, and conducting awareness of the new regulation to honey value chain stakeholders	
TRADE IMPACTS				
Change in absolute value of exports	US$	0	No impact	Medium
International Reputation	Yes/No	Yes	Will contribute towards keeping the honey production system in order and well regulated, which in a long way will improve acceptability of the product on the market	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	+1	Upon implementation of the developed regulatory framework, it will help in bringing sanity to the honey industry, hence contributing to management of food safety risks that would positively impact on domestic public health	high
Poverty impact	Scaling number (-3 to +3)	+1	Upon implementation of the developed regulatory framework, it will help in the production of honey that would comply with requirements of target markets, hence contributing positively to poverty reduction due to increased income	
Impact on vulnerable groups	Yes/No	Yes	Upon implementation of the developed regulatory framework, it will help in the production of honey that would comply with requirements of target markets. Since vulnerable groups are involved in the honey value chain, it will have a positive impact	

Annex 3.3: Livestock and Livestock Products

3.3.1 Develop a disease surveillance system for livestock (day old chicks, beef, goats, hides and skins)

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	2140400	Training (250400), lab equipment (200000), motor vehicle (150000), lab renovation (650000), ICT(90000), sample collection (800000),	
On-going cost	US$	249,000	Reagents (240000), PPE (20000), awareness (55000), vehicle maintenance (24000), communication (35000)	
TRADE IMPACTS				
Change in absolute value of exports	US$	5,849,500	According to ITC export potential map, Malawi holds an untapped export potential of live chickens $809,000 and hides and skins $360,900. Malawi export virtually no live or meat of goat and sheep and very minor exports of bovine animals. Malawi has also exports some amount of chicken meat but not substantial. Therefore this is representative of the export potential of the sector, totalling $5,849,500 by 5 years.	
International Reputation	Yes/No	yes	Provides evidence and increases confidence in the system on disease identification and reporting	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	3	Early detection and control of disease hence safe and quality products	high
Poverty impact	Scaling number (-3 to +3)	3	Increases income from livestock	
Impact on vulnerable groups	Yes/No	yes	Sector is dominated by women and children	

3.3.2 Develop a disease surveillance system for ornamental fish

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		232,820	Staff training (43820) ; lab equip(105000), motor vehicle (75000), ICT (9000)	
On-going cost		170,200	Reagents (70750), PPE(7500), sample collection (52450), vehicle maintenance (7500), communication (32000)	
TRADE IMPACTS				
Change in absolute value of exports	US$	1,304,000	According to ITC export potential map, Malawi holds an untapped export potential of $260,800 per annum totalling $1,304,000 over 5 years	Medium
International Reputation	Yes/No	yes	Increases confidence	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	0	No direct impact	high
Poverty impact	Scaling number (-3 to +3)	1	Poor people involved in capturing and farms	
Impact on vulnerable groups	Yes/No	No	No impact	

3.3.3 Develop a surveillance system for milk and milk products

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	305,160	Training of staff (100160), Lab equipment (150000), vehicle procurement (75000), ICT facilities (15000)	
On-going cost	US$	965,500	Lab reagents (60500), PPE (5000), sample collection (900000)	
TRADE IMPACTS				
Change in absolute value of exports	US$	410,000	Malawi exported on average $82,000 worth of milk & milk products over the last 5 years. Considering that there has been reversed growth over the period, we can assume at minimum that this CBO will save the total lost of the current exports.	
International Reputation	Yes/No	yes	Confidence increased	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	Lots of milk consumed and ensures safe and quality products	high
Poverty impact	Scaling number (-3 to +3)	1	Reduced rejection of milk and improved productivity and	
Impact on vulnerable groups	Yes/No	yes	About 95% of producers fall in this category	

3.3.4 Upgrade lab (CVL) capacity for surveillance system for trade sensitive diseases (FMD, RVF, PPR, HPAI, Anthrax, Brucellosis, bovine Tuberculosis, AFB, EFB, Nosema, Varroa)

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		1,095,588	Staff training (140000); Lab equipment (200000); Lab renovation (605588); Data bank system (20000); Develop a Quality management system and accredit (130000)	High
On-going cost		343,000	Lab reagents (120000); PPE (15000); sample collection (160000); vehicle maintenance (12000); communication (25000) Internal audit and annual accreditation (11000)	
TRADE IMPACTS				
Change in absolute value of exports		$25.2 million	Malawi exports beef and goat meat to UAE and the Middle East and the market has potential in growing. In 2021, UAE sent a questionnaire for government to complete assessing capacity on SPS issues. There are new markets for beef in the region especially in Mozambique which is ready to start buying from Malawi. Malawi exports hides and skins to Tanzania and Kenya in the region and Italy, China, Portugal and India. The market potential some of which is untapped is $5,040,500 if the issues are resolved.	High
International Reputation	Yes/No	Yes	Confidence and reputation	High
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	Gives confidence to the public of the results coming out of CVL	high
Poverty impact	Scaling number (-3 to +3)	1	Controlled diseases, improved production and productivity or reduced loss on production and increase in income	
Impact on vulnerable groups	Yes/No	yes	The category forms the majority who are involved in production therefore lack trade drives them into poverty	

3.3.5 Creating an FMD free zone

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment		1,506,240	Training (150240), farmer sensitization (45000), lab equipment (125000), 2 vehicles (150000), ICT facilities (30000), sample collection (1,006,000),	
On-going cost		343,000	Reagents (82000), PPE (15000), vehicle maintenance (20000), FMD vaccine (175000), communication (34000)	
TRADE IMPACTS				
Change in absolute value of exports	US$	25.2 million	According to ITC export potential map, Malawi holds an untapped export potential of live chickens $809,000 and hides and skins $360,900. Malawi export virtually no live or meat of goat and sheep and very minor exports of bovine animals. Malawi has also exports some amount of chicken meat but not substantial. Therefore this is representative of the export potential of the sector, totalling $5,849,500 by 5 years.	
International Reputation	Yes/No	yes	Evidence of control measures hence confidence	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	Lots of beef consumed	high
Poverty impact	Scaling number (-3 to +3)	3	Greatly reduces poverty levels and livestock are a ‘ moving bank’ hence part of insurance.	
Impact on vulnerable groups (women, youth, disable)	Yes/No	yes	Greatly reduces poverty levels and livestock are a ‘ moving bank’ hence part of insurance.	

3.3.6 Capacity building in GAPs, good veterinary practice, HACCP for milk and milk products.

Decision Criteria	Measurement (Y/N, scaling, number, value, %)	Estimated Value	Explanation, Source of Data and Method of Estimation	Level of Confidence (high, medium, low)
COST				
Up-front investment	US$	459,160	Training (100160), awareness (45000), 2 vehicles (150000), ICT (9000), lab equipment (40000)	
On-going cost	US$	95,150	Lb reagents (60000), PPE (7500), sample collection (115000), vehicle maintenance (7650), communication (20000),	
TRADE IMPACTS				
Change in absolute value of exports	US$	410,000	Malawi exported on average $82,000 worth of milk & milk products over the last 5 years. Considering that there has been reversed growth over the period, we can assume at minimum that this CBO will save the total lost of the current exports.	
International Reputation	Yes/No	yes	Confidence increased	
DOMESTIC & SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	2	Lots of milk consumed and ensures safe and quality products	high
Poverty impact	Scaling number (-3 to +3)	1	Reduced rejection of milk and improved productivity and	
Impact on vulnerable groups	Yes/No	yes	About 95% of producers fall in this category	

Annex 3.4 Legumes & Oilseeds

3.4.1 Pest surveillance and diagnostic testing and personnel certification capacity for legumes and oilseed

Decision criteria	Measurement (Yes/No, scaling, number, value %)	Estimated value	Explanation, source of data and method of estimation	Level of confidence (high, medium, low)
COST				
Up-front investment	US $	1,480,100	Cost of pest surveillance ($1,006,000), Staff training in pest diagnostics, PRA and surveillance ($62,600), Purchase of laboratory equipment ($320,000), Purchase of 2 motor vehicles ($47,000), ICT facilities ($15,000), Quarantine facility ($10,000)	High
On-going cost	US $	706,600	Reagents, culture media and cleaning materials ($67,750), PPEs ($1,200), Plant (product) sample collection ($600,000), vehicle maintenance and repair ($7,650), Communication ($30,000)	High
TRADE IMPACTS				
Change in absolute value of exports	US $	367,200,000	From ITC export potential estimates, selected legumes and oilseeds have a combined untapped export potential of $367,200,000 million over 5 years.	Medium
International reputation	Yes/No	Yes	Confidence in pest free products as competence of the inspectors	
DOMESTIC AND SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	0	No impact on public health	
Poverty impact	Scaling number (-3 to +3)	3	Increases productivity, eliminates pest	
Impact on vulnerable groups	Yes/No	Yes	The majority of the vulnerable groups are involved value chain	

3.4.2 Accreditation of MRL testing method for legumes and oilseed

Decision criteria	Measurement (Yes/No, scaling, number, value %)	Estimated value	Explanation, source of data an method of estimation	Level of confidence (high, medium, low)
COST				
Up-front investment	US $	284,300	System development ($14,400.06), training of staff ($50,000) Standards and reference materials ($50,000), Management review (3,600), Auditing ($3,600), Application for accreditation ($7,200), Equipment for MRL testing ($155,000)	High
On-going cost	US $	12,771	Reagents ($1,207), Cleaning materials ($420), PPEs ($144), Communication ($4,800), Vehicle maintenance and repair ($1,200), Equipment maintenance ($5,000)	High
TRADE IMPACT				
Change in absolute value of exports	US $	0	No impact	
International reputation	Yes/No	Yes	It brings confidence in test results which brings confidence in markets access, cost time, removes doubt in competence	
DOMESTIC AND SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	1	When the products are certified free will have a minimal impact on public health	
Poverty impact	Scaling number (-3 to +3)	2	It will have a medium impact as a result of Reduced cost of testing, reduce time, Increased income	
Impact on vulnerable groups	Yes/No	Yes	Reduced time, Accessibility and income, faster processes, more access to markets	

3.4.3 Capacity Building in pre & PHH and HACCP

Decision criteria	Measurement (Yes/No, scaling, number, value %)	Estimated value	Explanation, source of data an method of estimation	Level of confidence (high, medium, low)
COST				
Up-front investment	US $	45,600	Training of trainers ($14,400), Training manual development ($7,200.06), Training manual validation ($9,600.04), Training for staff, farmers, SMEs in GAP, pre and PHH and HACCP ($14,400.06),	High
On-going cost	US $	12,020	Conference hall hiring ($3,120.01), Printing costs and stationery ($ 2,100.01), Communication (1,000), Transport expenses ($1,000), Servicing and repair of equipment	High
TRADE IMPACTS				
Change in absolute value of exports	US $	367,200,000	From ITC export potential estimates, selected legumes and oilseeds have a combined untapped export potential of $367,200,000 million over 5 years.	Medium
International reputation	Yes/No	YES		
DOMESTIC AND SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	3	A lot of consumers, increase in high quality products	
Poverty impact	Scaling number (-3 to +3)	3	Reduction in wastage, increased production per unit area, access to market	
Impact on vulnerable groups	Yes/No	Yes	Many youth women, disables are involved in the value chain and consume this value chain, income	

3.4.4 Phytosanitary certification of legume and oil seed crops for the facilitation of export of legume and oilseed seeds

Decision criteria	Measurement (Yes/No, scaling, number, value %)	Estimated value	Explanation, source of data and method of estimation	Level of confidence (high, medium, low)
COST				
Up-front investment	US$	334,801	Variety development ($300,001.20), variety registration ($7,200.03), phytosanitary field inspection ($9,600.04), variety promotion ($14,400.06), Legume variety seed production ($6,600.01)	High
On-going cost	US$	15,120	Phytosanitary certificate issuance ($9,600.04), Transport ($720), licensing ($4,800.02)	High
TRADE IMPACTS				
Change in absolute value of exports	US$	367,200,000	From ITC export potential estimates, selected legumes and oilseeds have a combined untapped export potential of $367.2 million over 5 years.	Medium
International reputation	Yes/No	YES	At the moment Malawi does not have resistant varieties, once resistant varieties are identified Malawi will be able to export seed	
DOMESTIC AND SOCIAL IMPACTS				
Domestic public health	Scaling number (-3 to +3)	1	No direct health impact to humans, reduces the use of pesticides (fungicides)	
Poverty impact	Scaling number (-3 to +3)	3	Increased output, more will be produced per unit area, many households are involved in this value chain, income will be increased	
Impact on vulnerable groups	Yes/No	Yes	Many youth women, disables are involved in the value chain and consume this value chain, income	

Annex 3: Border Rejections/SPS Alerts Against Malawi by EU

product category	date	reference	product type	notification basis	notified by	countries concerned	subject	action taken
herbs and spices	09/08/2005	2005.633	Food	border control - consignment released	Italy	Italy (D), Malawi (O), South Africa (O), Switzerland (D), United Kingdom (D)	unauthorised colour Sudan 1 (159 µg/kg - ppb) in curry from Malawi via South Africa and via the United Kingdom	product recall or withdrawal
herbs and spices	29/08/2017	2017.1307	food	official control on the market	Switzerland	France (D), Germany (D), INFOSAN, Malawi (O), Netherlands (D), Norway (D), Switzerland (D), United Kingdom	aflatoxins (B1 = 66.4; Tot. = 82.3 / B1 = 96.2; Tot. = 116 µg/kg - ppb) in chilli from Malawi, via the United Kingdom	withdrawal from the market
nuts, nut products and seeds	03/10/2005	2005.APF	Food	border control - consignment detained	United Kingdom	Malawi (O), Spain, United Kingdom	aflatoxins (B1 = 6.4; Tot. = 21 / B1 = 1; Tot. = 3.6 / B1 = 14; Tot. = 45 / B1 = 7.3; Tot. = 23 µg/kg - ppb) in groundnut kernels from Malawi	destination of the product changed
nuts, nut products and seeds	31/03/2005	2005.AUG	Food	border control - consignment detained	United Kingdom	Malawi (O), Spain, United Kingdom	aflatoxins (B1 = 21; Tot. = 53 µg/kg - ppb) in groundnut kernels from Malawi	destination of the product changed
nuts, nut products and seeds	05/10/2005	2005.BFS	Food	border control - consignment detained	United Kingdom	Malawi (O), Spain, United Kingdom	aflatoxins (B1 = 27; Tot. = 83 / B1 = 5.4; Tot. = 16 / B1 = 9; Tot. = 40 µg/kg - ppb) in redskin groundnut kernels from Malawi	official detention
nuts, nut products and seeds	18/05/2005	2005.BIZ	Food	border control - consignment detained	United Kingdom	Malawi (O), Spain, United Kingdom	aflatoxins (B1 = 1.2; Tot. = 3.4 / B1 < 0.2; Tot. < 1 / B1 = 8.2; Tot. = 32 µg/kg - ppb) in groundnut kernels from Malawi	re-dispatch
nuts, nut products and seeds	31/07/2006	2006.BTD	food	border control - consignment detained	United Kingdom	Malawi (O), South Africa (O), Spain, United Kingdom	aflatoxins (B1 = 33; Tot. = 95 µg/kg - ppb) in groundnut kernels from Malawi via South Africa	re-dispatch
nuts, nut products and seeds	08/09/2006	2006.BVR	food	border control - consignment detained	Netherlands	Malawi (O), Netherlands, Spain	aflatoxins (B1 = 4.3; Tot. = 13.6 / B1 = 2.7; Tot. = 15.6 / B1 = 4; Tot. = 24 µg/kg - ppb) in groundnuts from Malawi	re-dispatch
nuts, nut products and seeds	11/09/2006	2006.CPG	food	border control - consignment detained	Netherlands	Malawi (O), Netherlands	aflatoxins (B1 = 4.4; Tot. = 21.6 µg/kg - ppb) in peanuts from Malawi	physical treatment - blanching
nuts, nut products and seeds	07/03/2007	2007.BQD	food	border control - consignment detained	Netherlands	Malawi (O), Netherlands, Spain, United Kingdom	aflatoxins (B1 = 5.6; Tot. = 21.3 / B1 = 7.7; Tot. = 22.4 / B1 = 10.5; Tot. = 30.3 µg/kg - ppb) in peanuts from Malawi	re-dispatch
nuts, nut products and seeds	13/07/2007	2007.BSC	food	border control - consignment detained	Netherlands	Malawi (O), Netherlands, Spain	aflatoxins (B1 = 5.2; Tot. = 25 µg/kg - ppb) in groundnuts from Malawi	physical treatment - sorting
nuts, nut products and seeds	14/02/2008	2008.AHE	food	border control - consignment detained	Netherlands	Malawi (O), Netherlands, Spain	aflatoxins (B1 = 9.2; Tot. = 33.9 / B1 = 2.6; Tot. = 9.9 / B1 = 12.3; Tot. = 15.1 / B1 = 31.2; Tot. = 44.6 / B1 = 22.9; Tot. = 56.9 / B1 = 3.4; Tot. = 16.9 µg/kg - ppb) in groundnuts from Malawi	physical/chemical treatment

Source: The Rapid Alert System for Food and Feed (RASFF)

Annex 4: Workshops Participants' List

LIST OF PARTICIPANTS FOR THE HIGH-LEVEL STAKEHOLDER DIALOGUE/INCEPTION MEETING ON MAINSTREAMING SPS PRIORITIES INTO NATIONAL POLICY AND INVESTMENT FRAMEWORKS TO ENHANCE TRADE CAPACITY – 9 MARCH 2020 AT UMOZI PARK HOTEL, LILONGWE – MALAWI

Chancellor Kaferapanjira, Chief Executive, Malawi Confederation of Chambers of Commerce and Industry (MCCI) P O Box 258, Blantyre, Tel: +265999788177, Email: ckaferapanjira@mccci.org

Dyborn Chibonga, Regional Head-Southern Africa, (AGRA) 2nd Floor Café Sol, RUA Beito da malata, Maputo, Mozambique, Tel: +258 848 825077, Email: DChibonga@agra.org

Martha Mmadi, Proprietor, Lakeshore Gold Honey, C/o Box 570 Lilongwe, Tel: 0996316549, Email: marthammadi@77@gmail.com

Lucy Stambili, Contracts Manager, Agricultural Commodity Exchange for Africa (ACE) P O Box 40139 Lilongwe, Tel: +265999316056, Email :lcstamili@gmail.com

Grace Timanyechi Munthali, Agricultural Economist, Department of Agricultural Research Services, P O Box 158, Tel: +265 997250517, Email:timagrace2@gmail.com

Ruth Negash, Chief Executive Officer, FEMCOM, Lilongwe, Tel: +26599961400, Email:rnegash@comesa.int Chikakula Miti, Programme Manager – FEMCOM P O Box 14991, Lilongwe, Tel: +265994080872, Email: cmiti@comesa.int

Feston Chimphamba, Economist, Ministry of Industry, Trade and Tourism, P O Box 30366, Tel: +265 883098336, Email: ndekhane@gmail.com

T. Chisi, Quality Control and Food Technologist, National Small holder Association of Malawi, P O Box 30716, Lilongwe 3. Tel: +265999688129/888545512, Email:tchisi2017@gmail.com

Eluphy Nyirenda, Policy and Partnerships Development Specialist, USAID, P O Box 30455, Lilongwe, Email: enyirenda@usaid.gov

Charlie David Edward Leaper, General Manager, MM(Operations)Limited, Malawi Mangoes, P O Box 499, Sallma, Tel+ 265997252151, Email: Charlie@malawimangoes.com

George Naphambo, Trade Law Consutants, Naphambo & Company, P O Box 30226, Lilongwe, Tel: +265 999560302, Email:gnaphambo@gmail.com

Imaan Mbango, Camera Operator, Malawi Broadcasting Corperation, P O Box 162 Lilongwe, Tel: +265 992000069, Email:imaansmicembango@gmail.com

Robert Kalindiza, News Repoter/Producer, Malawi Broadcasting Corporation, Box 106, Lilongwe, Tel:+265 997953455, Email:rkalindiza@gmail.com

Ngabaghila Chatata, Managing Director, Thanthwe Farms, P O Box 1215, Lilongwe, Tel: +265 (0)888892206, Email:ngaba@thanthiwemw.com

Limbikani Matumba, Association Professor, Lilongwe University of Agriculture, Natural Resources, P O Box 219, Tel: +265999682549, Email:Lmatumba@luaar.ac.mw

Kelphas Mvula, Trade Officer, (COMESA Desk Officer), Ministry of Industry, Trade and Tourism, P O Box 30364, Tel: +265 999277024, Email:kelphas.m@gmail.com

Emiliana F. Tembo, Independent Gender Consultant, P O Box 30085, Lilongwe 3, Tel: +265996243037, Email: emtembo2014@gmail.com

Mayeso Msokera, Principal Trade Officer, Ministry of Trade and Tourism, P O Box 30366, Lilongwe, Tel: +265999384886, Email:Maesomsokera@gmail.com

Mufwa Munthali, Deputy Director, Ministry of Industry, Trade and Tourism, P O Box 30366, Lilongwe 3, Tel: +265 1- 770680, Email: mufwa98@hotmail.com

Mercy Kaunda, Trade Officer, Ministry of Industry, Trade and Tourism, P O Box 30366, Tel:+265884630727, Email: mercykaunda74@gmail.com

Taluwana Mswayo, Trade Officer, Ministry of Industry and Tourism, P O Box 30366, Tel: +260994395562, Email:mswaotuluwana96@gmail.com

Macdonald Chisale, Veterinary Investigation Officer, Ministry of Agriculture, P O Box 527, Lilongwe, Tel: +265 994607360, Email: mactriggaah86@gmail.com

Tiwonge Miracle Mwale, Trade Officer, Ministry of Industry, Trade and Tourism, P O Box 30336, Tel: +265 881072230, Email:tiwongemwale@gmail.com

Olivia Mchaju Liwewe, Small Holder Farmer, P O Box 3381, Lilongwe 3 Tel: +265994962379/880055344, Email:mchajuliwewe@gmail.com

Fred E. Sikwese, Director of Standards Development, Malawi Bureau of Standards, P O Box 946, Blantyre, Tel: +265888534221, Email:fsikwese@mbsmw.org

Dr. Joseph Nkhoma, Animal Health and Livestock Development Officer, Ministry of Agriculture, P O Box 527, Lilongwe, Tel: +265884562763, Email:joemnkhoma@gmail.com

Barbara Banda, Executive Director, National Assistant of Business Women, P O Box X157, Crossroads, Lilongwe, Tel: +265995752813, Email: bandabarbara@gmail.com

Mundrex Mkamanga, Economist (Trade and Markets), Ministry of Agriculture/Department of Planning, P O Box 30134, Lilongwe, Tel: +265 999023636, Email:mkamundy@gmail.com

Dr. Julius Chulu, Deputy Director, Ministry of Agriculture, P O Box 2096, Tel: +265 991277492, Email:juliuschulu09@gmail.com

Wanja Imedi Kaliu, Private Sector, P O Box 16, Lilongwe, Tel: +265888916085, Email:wanja.kaliu@gmail.com

Elisa D.L. Mazuma, Deputy Director of Agriculture Research Services, Ministry of Agriculture, Irrigation and Water Development, Chitedze Agriculture Station, P O Box 158, Lilongwe, Tel: +265 999978255, Email: elisamazuma@gmail.com

Ezron Chirambo, Trade Officer, Ministry of Industry, Trade and Tourism, P O Box 30366 Lilongwe 3, Tel: +265 999650315, Email:ezronn@yahoo.com

Godwin Nyirongo, Statistician, Ministry of Industry, Trade and Tourism, P O Box 30366, Tel:+265 995637463, Email:gnyirongo5@gmail.com

Betty Chinyamunyamu, CEO, NASFAM, P O Box, 30716, Lilongwe, Tel: +265 1772866, Email: bchinyamunyamu@nasfam.org

Roman Malumelo, Coordinator of Donors in Malawi, Donor Committee in Trade, P O Box 40159, Lilongwe 4, Tel: +265 888873578, Email:

Chrispine Kandani, Quality Assurance Manager, AFRINUT Ltd, P O Box 30748, Lilongwe, Tel: + 265 886699011, Email: chrispine@afrinut.com

Peter Soko, Acting Country Director, Self Help Africa, P/Bag B495 Lilongwe, Tel:+265998384623/0888543230, Email:peter.soko@selfhelpafrica.org

Matilda Mdyetseni, Research Scientist General Plant, Health Inspector, Ministry of Agriculture, Department of Research, P O Box 158, Lilongwe, Tel: +265888621334/0999006027, Email:nyengomdyetseni@hotmail.com

Nelson Mkandawire, Managing Partner, Ndiliyunji Farm, P/B A146, Lilogwe, Tel:+265995752988, Email:nmkandawire1@gmail.com

Picken Chigoma Labson, Animal Health Officer, Ministry of Agriculture, Lilongwe, P O Box 259, Tel: +265999266374, Email:pickenlabson@gmail.com

Elizabeth C. Kunje, Deputy Director of Standards, Malawi Bureau of Standards, P O Box 946, Blantyre, Tel: +265888894418, Email: elizabethkunje@mbsmw.org

Charles Singano, Chief Agriculture Research Scientist, Ministry of Agriculture, Box 158, Lilongwe, Tel: +265999307474, Email: chasinga2001@yahoo.co.uk

Lovemore Kambani, Director, C/O P O Box 30545, Lilongwe, Tel: +265999899538/0888899538, Email:lmk899538@gmail.com

Dr. Patrick Chikungwa, Director – Animal Health, Ministry of Agriculture, P O Box 20916, Lilongwe, Tel: +265888371509, Email: pchikungwa@yahoo.com

Dr. Alexander Bulirani, Controller of Agriculture Services, Ministry of Agriculture, P O Box 30134, Lilongwe, Tel: +265884225132

David Kamangira, Senior Deputy Director, Ministry of Agricultural, Department of Agricultural Research Services, P O Box 30779, Lilongwe 3, Tel: +265999122199, Email:davidkamangira1@gmail.com

Maness Nkhata, Managing Director, Lakeshore Agro Processors Ent. P O Box 30510, Lilongwe, Tel: +265999005333, Email:lape.factory2007@gmail.com

Steve Chilundu, Journalist, Nation Publications Ltd, P O Box 30804, Blantyre, Tel:+265999732195, Email:chilundus@yahoo.com

Steve Zimba, Jornalist, Zodiak Broadcasting Station, P Bag 312 Lilongwe, Tel: +265999776776, Email:stezimba@gmail.com

Taonga Sabola, Bureau Chief, Times Media Group, P/Bag 39,BT, Tel:+265999363515, Email:taongasabola@gmail.com

Edmond Phiri, Cameraman/Editor, ZBS, P/Bag 712, Lilongwe, Tel: +265992542533, Email:edmondblessings@gmail.com

EU DELEGATION

Vose Medina, Team Leader, EU delegation, Tel: +265 966196455
Bakkeren J, Attache European Union, P O Box 30102, Tel: +265 995291885, Email:joseph.bakkeren@eas.europa.eu
Matilda Sibweza Palamuleni, Prgramme Manager, Trade, Regional Integration, European Union Delegation to Malawi, P O Box 30102, Lilongwe, Tel: +265999870500/0888870500
Email:matilda.palamuleni@eeas.europa.eu
Therese Gondwe, Women Economic Empowerment specialist, UN Women, Lilongwe
Tel: +265 998515892, Email:therese.gondwe@unwomen.org

COMESA SECRETARIAT, BEN BELLA ROAD, P.O. BOX 30051, LUSAKA, ZAMBIA, TEL: + 260 211 229725/32, FAX: +260 211 225107

1. Mrs. Providence Mavubi, Director of Industry and Agriculture, Email: pmavubi@comesa.int
Mshuka Kamwela, Project Manager EDF , Email: mkamwela@comesa.int
Dr. Mukayi Musarurwa, Technical Barriers to Trade Expert, Email: mmusarurwa@comesa.int
Dingiswayo Shawa, Sanitory and Phytosanitory Expert , Email:dshawa@comesa.int
Talumba Banda, PIMA Project Officer, Email:tbanda@comesa.int
Roland Mhango, Finance Expert, Email: rmhango@comesa.int
Isaac B. Gokah, P-IMA Expert, COMESA Consultant, Email: isaacb.gokah@gmail.com

LIST OF PARTICIPANTS FOR P-IMA MALAWI TRAINING WORKSHOP ON THE P-IMA FRAMEWORK: 10-11 MARCH 2020, LILONGWE MALAWI

1. Tiwonge Chisi, Quality Control and Food Technologist, National Small holder Association of Malawi, P O Box 30716, Lilongwe 3. Tel: +265999688129/888545512, Email:tchisi2017@gmail.com
2. Kelphas Mvula, Trade Officer, (COMESA Desk Officer), Ministry of Industry, Trade and Tourism, P O Box 30364, Tel: +265 999277024, Email:kelphas.m@gmail.com
3. Fred E. Sikwese, Director of Standards Development, Malawi Bureau of Standards, P O Box 946, Blantyre, Tel: +265888534221, Email:fsikwese@mbsmw.org
4. Dr. Joseph Nkhoma, Animal Health and Livestock Development Officer, Ministry of Agriculture, P O Box 527, Lilongwe, Tel: +265884562763, Email:joemnkhoma@gmail.com
5. Elisa D.L. Mazuma, Deputy Director of Agriculture Research Services, Ministry of Agriculture, Irrigation and Water Development, Chitedze Agriculture Station, P O Box 158, Lilongwe, Tel: +265 999978255, Email: elisamazuma@gmail.com
6. David Kamangira, Senior Deputy Director, Ministry of Agricultural, Department of Agricultural Research Services, P O Box 30779, Lilongwe 3, Tel: +265999122199, Email:davidkamangira1@gmail.com
7. Mufwa Munthali, Deputy Director, Ministry of Industry, Trade and Tourism, P O Box 30366, Lilongwe 3, Tel: +265 1- 770680, Email: mufwa98@hotmail.com
8. Macdonald Chisale, Veterinary Investigation Officer, Ministry of Agriculture, P O Box 527, Lilongwe, Tel: +265 994607360, Email: mactriggaah86@gmail.com

9. Picken Chigoma Labson, Animal Health Officer, Ministry of Agriculture, Lilongwe, P O Box 259, Tel: +265999266374, Email:pickenlabson@gmail.com
10. Ngabaghila Chatata, Managing Director, Thanthwe Farms, P O Box 1215, Lilongwe, Tel: +265 (0)888892206, Email:ngaba@thanthiwemw.com
11. Martha Mmadi, Proprietor, Lakeshore Gold Honey, C/o Box 570 Lilongwe, Tel: 0996316549, Email:maAhammadi@77@gmail.com
12. Chrispine Kandani, Quality Assurance Manager, AFRINUT Ltd, P O Box 30748, Lilongwe, Tel: + 265 886699011, Email: chrispine@afrinut.com
13. Barbara Banda, Executive Director, National Assistant of Business Women, P O Box X157, Crossroads, Lilongwe, Tel: +265995752813, Email: bandabarbara@gmail.com
14. Charles Singano, Chief Agriculture Research Scientist, Ministry of Agriculture, Box 158, Lilongwe, Tel: +265999307474, Email: chasinga2001@yahoo.co.uk
15. Grace Timanyechi Munthali, Agricultural Economist, Department of Agricultural Research Services, P O Box 158, Tel: +265 997250517, Email:timagrace2@gmail.com
16. Godwin Nyirongo, Statistician, Ministry of Industry, Trade and Tourism, P O Box 30366, Tel:+265 995637463, Email:gnyirongo5@gmail.com
17. Lovemore Mtsitsi, 0999926641, lovemore@cisanetmalawi.net

LIST OF PARTICIPANTS FOR P-IMA MALAWI TRAINING OF NATIONAL EXPERTS ON D-SIGHT SOFTWARE: 12-13 MARCH 202O, LILONGWE MALAWI

18. Tiwonge Chisi, Quality Control and Food Technologist, National Small holder Association of Malawi, P O Box 30716, Lilongwe 3. Tel: +265999688129/888545512, Email:tchisi2017@gmail.com
19. Kelphas Mvula, Trade Officer, (COMESA Desk Officer), Ministry of Industry, Trade and Tourism, P O Box 30364, Tel: +265 999277024, Email:kelphas.m@gmail.com
20. Fred E. Sikwese, Director of Standards Development, Malawi Bureau of Standards, P O Box 946, Blantyre, Tel: +265888534221, Email:fsikwese@mbsmw.org
21. Dr. Joseph Nkhoma, Animal Health and Livestock Development Officer, Ministry of Agriculture, P O Box 527, Lilongwe, Tel: +265884562763, Email:joemnkhoma@gmail.com
22. Elisa D.L. Mazuma, Deputy Director of Agriculture Research Services, Ministry of Agriculture, Irrigation and Water Development, Chitedze Agriculture Station, P O Box 158, Lilongwe, Tel: +265 999978255, Email: elisamazuma@gmail.com
23. David Kamangira, Senior Deputy Director, Ministry of Agricultural, Department of Agricultural Research Services, P O Box 30779, Lilongwe 3, Tel: +265999122199, Email:davidkamangira1@gmail.com
24. Mufwa Munthali, Deputy Director, Ministry of Industry, Trade and Tourism, P O Box 30366, Lilongwe 3, Tel: +265 1- 770680, Email: mufwa98@hotmail.com

LIST OF PARTICIPANTS FOR MALAWI, P-IMA NATIONAL STAKEHOLDER WORKSHOPS, 20 – 24 SEPTEMBER 2021

Christina Zakeyo, Principal Secretary, Ministry of Trade, P O Box 30399, Tel:+265999872829, Email: chtimachristina@yahoo.com

Charity Musonzo, Director of Trade, P O Box 30988, Tel: +265888367533, Email:charity.musonzo@trade.gov.mw/ charitylonje@yahoo.com

Mufwa Munthali, Deputy Director (Foreign Trade) Ministry of Trade, P O Box 30366, Tel:265-993324933, Email:mufwa980@hotmail.com

Ronald Ngwira, Managing Director, PYXUS Agricultural Limited, P O Box 30522 Lilongwe 3, Tel: 0999830433, Email:rngwira@pyxus.com

Herbert Chagona, National Director, Malawi Milk Producers Association, Box 376, Tel: 265999930565, Email: Herbert.chagona@mwmilkproducers.org

Chrispine Kandani, Quality Assurance Manager, P O Box 30748, Lilongwe, Tel: +265 886699011, Email:chrispine@afrinut.com

Essau Mwendo Phiri, Programme Officer, AGRA, C/O GAT, Box 158 Lilongwe, Tel:+265 999 832156, Email:Emwendo@agra.org

Linnily Lindiwe Kalolo, Administrator, EST Brothers Limited, P O Box 2110, Lilingwe, Tel:0991861763, Email:est.brothersltd@gmail.com

Mcloud Kayira Chirwa, Programm Officer, Alliance for A Green Revolution in Africa, C/O CIAT, P O Box 158 Lilongwe, Tel: +265 999415524, Email:mkayira@agra.org

Kelphas Mvula, Trade Officer, (COMESA Desk Officer), Ministry of Industry, Trade and Tourism, P O Box 30364, Tel: +265 999277024, Email:kelphas.m@gmail.com

Matilda Mdyetseni Chingwalu, Research scientist Ven Plant Health Inspector, Head of Malawi plant Health Inspection services, Ministry of Agriculture, Department of Research Chitedze Research Station, P O Box 158, Tel: 0888621334/0999006027, Email: nyengomdytseni@hotmail.com
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Dr. Mac Donald Chisale, Veterinary Investigation Officer, Ministry of Agriculture, P O Box 2091, Lilongwe, Tel: +265994607360, Email:mactriggah86@gmail.com

Eric James Chuma, Technical Advisor, Poultry Industry Association, Tel: +265999321432/01759157, Email:piem.malawi@gmail.com

Fredrick Mattress, Managing Director, African Honey and Food Products, Tel:+265 888025309, Email:Fredrickmatress@gmail.com

Ngabaghila Chatata, Managing Director, Thanthwe Farms, P O Box 1215, Lilongwe, Tel: +265 (0)888892206, Email:ngaba@thanthiwemw.com

Picken Chigoma Labson, Animal Health Officer, Ministry of Agriculture, P O Box 259, Tel: 0999266374, Email:pickemabson@gmail.com

Lusungu Chisomo Mfinda, Production Manager, Kwithu Kitchen, P O Box 20066, Mzuzu, Tel:0999603381/0883699995, Email:mfindalurangu@gmail.com

Jonathan Christopher Banda, Trade Officer, Ministry of Trade, P O Box 30988, Tel: 0992770765, Email:jonathanbandaho@gmail.com

Lester Dambula, Trade Officer, Ministry of Trade, P O Box 30988113, Tel:2651770680, Email:lesterishmae193@gmail.com

Dr. Charles Singano, Chief Agricultural Research Scientist, Ministry of Agriculture, P O Box 158, Tel:2651999307474, chasinga2001@yahoo.co.uk

Dr. Julius L.C. Chulu, Deputy Director of Veterinary Research and Investigation, Department of Animal Health and Livestock Development, P O Box 2096, Tel:0991277492, Email:Juliuschulu09@gmail.com

Kenala Tembenizeni, Quaum Assurance Supervisor, MM Operations Limited, P O Box 499, Salima, Tel: 0995505758, Email:kenala@malawimangos.com