African, Caribbean and Pacific Group of States

"Implementation of the Namibian Standards Institution strategic objectives"

"ACP-EU TBT PROGRAMME" (REG/FED/022-667)

Project code 31/2015/WP2

FINAL TECHNICAL REPORT

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Project implemented by

bkp DEVELOPMENT RESEARCH & CONSULTING

Table of contents

Abbreviations and acronyms

AMTA	**Agro-Marketing and Trade Agency**
ANOVA	**Analysis of variance**
CIF	**Construction Industries' Federation**
COOH-SPE	**Carboxylic acid - solid phase extraction**
CRM	**Certified reference material**
DSP	**Diarrhetic shellfish poisoning**
FAO	**The United Nations Food and Agriculture Organisation**
GRN	**The Government of the Republic of Namibia**
HACCP	**Hazard analysis at critical control points**
HPLC-FLD	**High performance liquid chromatography with fluorescent detection**
IEC	**The International Electrotechnical Commission**
ISO	**The International Organisation for Standardisation**
KE	**Key Expert**
KEBS	**Kenya Bureau of Standards**
LCMS/MS	**Liquid chromatography - mass spectrometry**
LCMS/MS-MS	**LCMS/MS with two mass analysers**
LIMS	**Laboratory information and management system**
LOD	**Limit of detection**
LOQ	**Limit of quantification**
(M)SME	**(Micro), small and medium enterprise**
MAWF	**Ministry of Agriculture, Water and Forestry**
MHSS	**Ministry of Health and Social Services**
MoU	**Memorandum of Understanding**
NAB	**Namibian Agronomic Board**
NCCI	**Namibian Chamber of Commerce and Industry**
NEP	**National Enquiry Point**
NMA	**Namibia Manufacturers' Association**
NQP	**National Quality Policy**
NRCS	**National Regulator for Compulsory Specifications (South Africa)**
NSC	**National Standards Council**
NSI	**Namibian Standards Institution**
NTF	**Namibia Trade Forum**
OIML	**International Organisation for Legal Metrology**
PSP	**Paralytic shellfish poisoning**
PTB	**Physikalisch-Technische Bundesanstalt, Braunschweig, Germany**
QA	**Quality assurance**
QMS	**Quality management system**
SADC	**The Southern African Development Community**
SADCMEL	**SADC Cooperation in Legal Metrology**
SANAS	**The South African National Accreditation System**
SPS	**Sanitary and Phytosanitary**
SQAM	**Standardisation, Quality Assurance, Accreditation and Metrology**
TBT	**Technical Barriers to Trade**
UNIDO	**United Nations Industrial Development Organisation**

Acknowledgements

- **Project team**

The expert team involved on this project comprised:

  - Key expert 1/ Team Leader: Graham Holloway;
  - Key expert 2/ Engagement of SMEs: Patrick McGrath;
  - Key expert 3/ Food Laboratory: Mike McNerney;
  - Non-Key Expert: Legal Metrology: Brian Beard;
  - Non-Key Expert: Trainer HACCP and ISO 22000: Anya Knoetze;
  - Non-Key Expert: Trainer ISO 9001, 17065, 17024: Iain Muir;
  - Non-Key Expert: Trainer ISO 17021: John Peart;
  - Non-Key Expert: Trainer Marine Phytoplankton: Vanessa Del Río

- **Key stakeholders involved**

  While the training carried out under the project was directed at NSI staff, some attachments of NSI staff were also undertaken, in particular to the Kenya Bureau of Standards (KEBS), the laboratories of Public Health England, and the laboratories of the South African National Regulator for compulsory specifications (NRCS). Grateful thanks are due to all these external organisations for their valuable assistance.

  With specific regard to the consultations carried out under Activity 2.1, a variety of Namibian organisations gave valuable input, which is hereby acknowledged with thanks. The organisations and individuals concerned are:

  - Mr. Fidelis N. Mwazi – Senior Manager, Standard and Trade, Agro-Marketing and Trade Agency (AMTA)
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  - Mr. Christof Brock – CEO, Namibian Agronomic Board (NAB),
  - Ms. Antoinette Venter – Maize & Wheat Manager, NAB
  - Mr. Danny Meyer – Director "SME Compete"
  - Ms. Kirstin Wiedow – Director, "FAB Lab"

- Mr. Roald Koch – Technical Advisor, Namibia Chamber of Commerce and Industry (NCCI)
- Mr. Giancarlo Monteforte, Head of Development Cooperation, Delegation of the European Union to Namibia
- Mr. Babagana Ahmadu, UN Food and Agriculture Organisation (FAO) Representative in Namibia
- Ms. Beata Negumbo, Programme Assistant, FAO

- The expert team also wishes to acknowledge the invaluable background information contained in the following PTB publication, in relation to the input provided under this project to the beneficiary and to the UNIDO project team tasked with developing the National Quality Policy for Namibia:

  "*Thoughts on a National Quality Policy*" (Physikalisch-Technische Bundesanstalt, Braunschweig, Germany, 2011).

EXECUTIVE SUMMARY

This is the Final Technical Report of the ACP EU TBT Programme project for the "Implementation of the Namibian Standards Institution Strategic Objectives". The project has run from September 2015 and has successfully concluded all of its planned activities before its extended closure deadline of 27 November 2016. The beneficiary, the Namibian Standards Institution (NSI) is a relatively young body which was established in late 2007 under the Standards Act, 2005 (No. 18 of 2005) and became operational in January 2008. Since that time it has grown, and continues to grow, to meet the challenges of providing standardisation, metrology and conformity assessment services to its Namibian stakeholders. The project has taken place against the backdrop of a separate project under another donor, for the development of a National Quality Policy for Namibia.

The NSI and the Namibian economy in general, are going through a period of rapid change. While the economy is struggling at present, there is still a determined move toward bringing the national quality infrastructure up to date and aligning it with international best practices. The NSI is consequently expanding and being stretched on all fronts – in standardisation, testing and inspection, certification, assistance to regulators - and thus all the varied interventions under this project have come at an appropriate time. The overall objective of the project has been to enhance trade competitiveness and support the NSI in fulfilling its mandate though implementation of strategic objectives, while the specific purpose of the project has been to strengthen the existing capacities of the NSI in terms of standardisation, inspection, management systems and technical assistance to SMEs in line with the upgraded National Quality Policy (NQP), which is being developed separately.

The key result areas of the project were defined as follows:

- **Result 1** – The existing capacities of the NSI in terms of standardisation and management systems are strengthened in line with the revised National Quality Policy (NQP).
- **Result 2** – The institutional capacity of the NSI for delivering technical assistance to SMEs is enhanced, and the private sector is more actively engaged in the NSI activities.
- **Result 3** – Selected staff of the NSI are trained and duly coached following mentoring and auditing attachment programmes.
- **Result 4** – Capacity building of the NSI Food Laboratory through conducting the gap analyses and trainings.
- **Result 5** – A Final National Workshop on Project Findings and the WTO TBT and SPS Agreements, International Standards Setting Organisations, Standards Development Process with engagement of the private sector is organised.

A number of activities were concluded under the project, including

- A needs assessment of NSI, which refined the project's activities;

- The investigation and provision of detailed comments to NSI on the items to be included in the NQP, on suggested minor changes to the Standards Act, on major changes to the Legal Metrology Bill, as well as the drafting of key Regulations to the eventual Act; and

- The development, following significant stakeholder consultation, of draft documents to enable NSI to better engage with stakeholders and to establish two pilot support

programmes for the SME sector, with particular reference to informal food vendors and small contractors in the construction sector.

In addition, a variety of capacity building interventions were organised, to strengthen the WTO-TBT Enquiry and Notification Point, to provide training on the implementation and auditing of HACCP and specific ISO standards (ISO 9001 and ISO 22000), and to train metrology staff on product sampling techniques, packaging and labelling requirements of relevant SADCMEL documents. Further training courses were organised to ensure that NSI staff gained an in-depth understanding of various International Standards in conformity assessment and certification (ISO/IEC 17021, 17024 and 17065), and the training was supplemented by attachments to foreign organisations for auditing against ISO 9001 and 17021. Attachments also took place in the area of fresh and canned fish inspection. A comprehensive gap analysis and in depth training in a number of techniques was carried out for the NSI Laboratory in Walvis Bay, and this was supplemented by ad hoc interventions to assist with accreditation in certain analytical techniques required for the certification of seafood exports. An international attachment was also organised for the laboratory's QA Officer to gain familiarity with the operation of a Laboratory Information and Management System.

All of these activities were aimed at enabling NSI to improve its position and its offerings across the range of its activities. The project has successfully completed all of its tasks within the time allowed, and as a result of the project's interventions, NSI is now in a much better position to certify certain exports, to take on the challenge of interacting with and growing its support base among a range of stakeholders at all levels, including SMEs, for whom an increasing level of support will be needed, and to increase its range of testing and certification offerings to new stakeholders and customers in support of the broader economy.

However, the technical assistance successfully rendered under the project is not the beginning of the end of NSI's needs, but perhaps, "the end of the beginning", and going forward a new range of technical assistance interventions will be needed, across the board, to assist NSI to meet the challenges of the future. NSI needs now to build on and implement the stakeholder engagement and SME support mechanisms proposed as a result of the project, to grow its support base and to engender in the Namibian public a demand for quality and a level of recognition of the benefits of NSI's services.

The forthcoming National Quality Policy will also place demands on NSI as well as on Government, with whom the relationship must be managed for the good of consumer protection, enhanced exports and import substitution. But the NQP will not solve all of the challenges NSI or the broader Namibian economy faces. There is a clear need to supplement the new NQP with a carefully thought out National Standards Strategy, in which the sometimes contradictory demands of all aspects of the marketplace need to be weighed. There is a need in Namibia also for a proper, modern Technical Regulations Framework, which can only come about if and when Government Ministries and other Regulators understand and accept the need for comprehensive risk-based and proportionate levels of protection, based on international best practices, both for the consumer and the environment, but also for Namibia's export quality and in terms of import control.

In this regard, there is a large opportunity for NSI to put in place, along with Government partners, an appropriate level of import inspection regime accompanied by a workable market surveillance system.

As NSI, and the demands placed upon it, continues to grow in all directions, there remain clear opportunities and needs for further assistance. Key recommendations of this report therefore include

- In the area of SME support, once the initial Pilot Support Programmes have become established and lessons learned, there will be opportunities for small donor projects to extend these programmes into other areas of the fishing, agriculture, tourism support, small manufacturing, construction and transportation sectors. Suitable target sectors where value can be added should to be identified and the necessary support interventions characterised;
- Difficulties in certifying Namibian products for export are likely to arise from time to time. As with the intervention in Activity 4.3 of the current Project, these should be investigated and solved with external technical assistance on an ad hoc basis;
- With regard to possible larger, more formal intervention projects, the growing pains of NSI are clear, and there is an opportunity to make a difference by the provision of technical assistance across the range of NSI's services. For example:

    - Assistance with the ramping up of standards production to meet the demands of Namibian stakeholders for Namibian rather than South African standards, and with the development of a National Standards Strategy based on demand in key sectors;
    - Assistance with the establishment of a best practice Technical Regulation Framework;
    - Assistance with the development of an Import Inspection and Market Surveillance scheme for consumer protection;
    - Assistance to expand the range of Industrial and Legal Metrology services (calibrations, verifications, inspections, market surveillance);
    - Assistance to expand the range of laboratory testing techniques and to gain accreditation in more key areas, aimed at enhancing exports;
    - Assistance to expand the range of product and system certification schemes.

1 BACKGROUND

1.1 The Project Management Unit of the ACP EU TBT Programme (TBT Programme) awarded the contract for the implementation of the project "Implementation of the Namibian Standards Institution Strategic Objectives" ("The Project") to BKP Development Research & Development GmbH (BKP Development). The project started on 28 September 2015 (date of contract signature) and further to a contract extension signed on 10 March 2016 (Addendum N°1) is due to end on 27 November 2016 after duration of fourteen months.

1.2 The NSI is the national entity responsible for standardization and conformity assessment as well as for providing certification services for management systems, products and persons. The NSI also participates in the SADC Standardisation, Quality Assurance, Accreditation, and Metrology (SQAM) Programme. In accordance with the Standards Act, 2005, the Namibian Standards Council (NSC) oversees the governance of the NSI and provides strategic leadership. The NSC was inaugurated in February 2011 and currently consists of eight members and the CEO as an ex officio member.

1.3 Following its creation, the NSI has put in place internationally-aligned procedures for setting and adopting Standards, Technical Committees have been established to prepare, adopt, and publish standards and the NSI has notified the ISO/IEC Information Centre that it has accepted the Code of Good Practice for the Preparation, Adoption and Application of Standards contained in Annex 3 of the TBT Agreement with effect from 29 February 2008. The NSI has also established a National WTO TBT Enquiry and Notification Point which was notified to the WTO TBT Committee in March 2012 but at the time of this project's inception still needed to be strengthened.

1.4 The development of Namibian national standards undergoes a number of stages. These stages, which are in alignment with best practice as outlined in annex 3 to the WTO/TBT Agreement, are as follows:

Stage	Description
1	Proposal/Request stage
2	Preparatory stage
3	Committee stage
4	Public Enquiry stage
5	Ratification stage
6	Publication stage

Preference is always given to the adoption of International Standards (ISO, IEC, Codex Alimentarius etc., provided these are deemed to be effective, and thus far 93 national standards have been published. The standards in use in key economic sectors, for example fisheries, are internationally and regionally aligned wherever possible.

1.5 The NSI has now also officially assumed responsibility as the technical inspection body for fish and fisheries' products, as well as canned fish and meat products, and is responsible for inspecting and certifying such products. A specific Fishery Inspection Centre was officially opened in June 2012. In this context, further training of NSI inspectors and certification personnel on implementing and auditing HACCP and specific ISO standards has been required. In recent years, the NSI has also

undertaken efforts to prepare for the accreditation of its conformity assessment services to the relevant international standards. The NSI Food Testing Laboratory and Fisheries Inspection at the Testing and Inspection Centre in Walvis Bay were accredited in May 2011 to the ISO/IEC 17025:2005 standard by the South African National Accreditation System (SANAS). Furthermore, the Mass Metrology Calibration Laboratory operated by NSI was accredited in 2013 to the ISO/IEC 17025:2005 standard by the SADC Accreditation Service (SADCAS). The technical capacities of NSI laboratory staff however still required to be strengthened, in particular through training on the understanding and implementation of ISO/IEC 17025.

1.6 The **key result areas** of the project are defined as follows:

- **Result 1** – The existing capacities of the NSI in terms of standardisation and management systems are strengthened in line with the revised National Quality Policy (NQP).
- **Result 2** – The institutional capacity of the NSI for delivering technical assistance to SMEs is enhanced, and the private sector is more actively engaged in the NSI activities.
- **Result 3** – Selected staff of the NSI are trained and duly coached following mentoring and auditing attachment programmes.
- **Result 4** – Capacity building of the NSI Food Laboratory through conducting the gap analyses and trainings.
- **Result 5** – A Final National Workshop on Project Findings and the WTO TBT and SPS Agreements, International Standards Setting Organisations, Standards Development Process with engagement of the private sector is organised.

1.7 According to the Terms of Reference for the Project, its **overall objective** is to enhance trade competitiveness and support the NSI in fulfilling its mandate though implementation of strategic objectives. The **purpose of the project** is to strengthen the existing capacities of the NSI in terms of standardisation, inspection, management systems and technical assistance to SMEs in line with the upgraded National Quality Policy (NQP), which is being developed separately under UNIDO support.
The NSI has defined a number of "strategic pillars" for its development, as follows:

- Pillar 1: To ensure prudent financial management
- Pillar 2: To secure and extend avenues of funding
- Pillar 3: To increase consumer awareness
- Pillar 4: To strengthen stakeholder relationships
- Pillar 5: To ensure sound corporate governance and risk management
- Pillar 6: To improve operational efficiencies
- Pillar 7: To build a performance culture.

The interventions under the current project have therefore been designed to assist NSI to meet its objectives in Pillars 3, 4 and 6 in particular.

1.8 The project has taken place against the backdrop of another donor activity, under UNIDO funding, for the development of a revised National Quality Policy (NQP). The activities under the project were therefore carried out in such a way as to complement the other activity.

2 ACTIVITIES CARRIED OUT

The following activities have been carried out under the project:

Activity 1.1: Conducting a needs assessment for the NSI
A needs assessment was carried out of the Namibian Standards Institution between 16th and 20th November 2015, to critically examine the planned project structure and feasibility, and to enable a refinement and re-evaluation of the planned activities to take place in the light of developments since the original Terms of Reference for the project were drafted and to ensure that they met the current needs of the beneficiary.

The needs assessment was carried out by the Team Leader, Graham Holloway, and was supplemented during the following week (23rd to 27th November 2015) by the involvement of KE2, Patrick McGrath, who researched the needs of NSI and its stakeholders in terms of component 2 of the project.

The needs assessment (see Annex 1) confirmed much of the planned project methodology as per the original ToR, but highlighted a number of necessary changes to the project methodology, which were captured in the Inception Report, which was duly accepted. Further to the changes outlined in the Inception Report, a number of minor delays were experienced, which led to the granting of an extension of the project duration until 27th November 2016. The project has now completed its activities within the revised timeframe.

The key changes requested in the Inception Report, and accepted by the PMU, were as follows:

- Activity 1.2 was refocused from revising the National Quality Policy to instead encompass research into legislative options for the eventual implementation of the NQP and the roles of key players, the submission of technical comments to the beneficiary on the content of the NQP, and the creation of promotional ideas for its eventual implementation. The work on the revision of the NQP itself was now, as organised by the beneficiary, to be conducted by UNIDO.
- The original Activity 1.3 (Modelling and mapping the operations of NSI) was found to be unfeasible and was deleted. This resulted in a renumbering of the remaining project activities, and the numbers of activities referred to in the remainder this report are therefore those revised activity numbers that were approved in the Inception Report.
- A change in emphasis was required in the new (renumbered) Activity 1.3 “Strengthening the WTO TBT Enquiry and Notification Point”, to allow for some additional on-site training by the Team Leader on the correct operation of the Enquiry and Notification Point and on the WTO-TBT Agreement and its impact on the Technical Regulations Infrastructure in Namibia.
- Activity 1.4 (Trade Metrology Bill) was renamed to better reflect the scope of the work required.
- Activity 4.2 (Selected NSI Laboratory Staff trained on ISO/IEC 17025 requirements) was altered slightly to focus more on the in-depth understanding and implementation of ISO/IEC 17025 requirements, with the emphasis on making the existing QMS work optimally and capacitating internal auditors. This was due to the fact that some of the techniques in use in the laboratory are already accredited.
- A new Activity 4.3 was introduced to focus on

- Resolution of method development and validation problems for the LCMS/MS method for lipophilic toxins;
- Resolution of method development and validation problems for the HPLC method for Paralytic Shellfish Poisoning (PSP); and
- Training for histamine on fish samples by LCMS/MS

- A new Activity 4.4 was also introduced, to allow for the attachment for 5WD of the QA Officer from the NSI Food Laboratory to a fully operating food laboratory to enable her to be exposed to the workings of a comprehensive LIMS system.
- Finally, a number of minor alterations had to be made to the time allowed for individual activities to accommodate the above changes. Further details were given in the Inception Report. Overall, however, there was no change in project resource allocations.

Activity 1.2: Preparation for the implementation of the NQP and research into areas affecting the introduction of a fully-fledged National Quality Infrastructure (NQI)

A number of ideas were discussed with NSI management and staff for the promotion of the NQP when it emerges, and these were developed into a series of posters or brochure material that NSI can take further when the time comes (please refer to Annex 2 for further details).

After a number of meetings, discussions and desk research, a report was prepared for NSI giving comments on the "zero draft" provided by them, highlighting a number of other contentious issues, not referred to in the zero draft, that need to be addressed by UNIDO in the revision of the NQP, and proposing a suggested structure for the eventual document.

The report (refer to Annex 3A) recommended that an Implementation Action Plan be drawn up for the introduction of the NQP, highlighted a number of conflicts of responsibility that need to be addressed in the NQP, and identified that, in fostering and promoting the NQP, the differing needs of industry, SMEs, government and the end consumer will have to be addressed and a balance obtained, in rolling out and encouraging the further growth of the National Quality Infrastructure. (The original 1999 National Quality Policy document, on which the "zero draft" was based, is given in Annex 3B.)

Perusal of the 2005 Standards Act also raised a number of comments related to exactly what NSI should be empowered to do, and a brief comment document, also given in Annex 3A, was sent to NSI for possible onward transmission to their line Ministry. The 2005 Act itself is given in Annex 3C.

Activity 1.3: Strengthening the WTO TBT Enquiry and Notification Point

A familiarisation visit and discussions with key staff were undertaken to identify the current status, capabilities and needs of the NEP. Currently the beneficiary, NSI, is also responsible for the activities of the Notification Point, as the Trade Ministry has devolved this responsibility. This visit was followed by research into possible means of addressing the needs.

A summary of proposed future actions to address the needs of the NEP is made available separately as a PowerPoint presentation. The contents of a proposed Action Plan were made available to the beneficiary to

- Increase its effectiveness;
- Improve its communication with stakeholders; and
- Identify a range of suggested promotional activities to raise the profile of the NEP.

During the mission it became apparent that more training than originally anticipated was required by NSI staff concerned with the operation of the NEP. Accordingly, two half day training presentations (also refer to Annex 2) were given, on the following subjects:

- The operation of a National TBT Enquiry and Notification Point; and
- The WTO-TBT Agreement and its relation to the Technical Regulations framework

Activity 1.4: Review and make recommendations for improving the Trade Metrology Bill, and identify and where appropriate Draft necessary Technical Regulations for its implementation

An expert mission took place to provide technical input to the draft Metrology Bill, and to identify current technical regulations that require updating to reflect international and regional best practice requirements for implementing the new Act (once published) as well as new regulations that will be required. Numerous amendments, additions and deletions were decided upon and the Bill has now been formatted and edited in Namibia to ensure correct numbering and referencing, and has been submitted for further discussion in Parliament.

A large number of Trade Metrology Regulations were then discussed in detail, with a view to rationalising them, aligning with SADCMEL documents where appropriate, and formulating a plan under which the NSI Metrology Department will be able to continue and finalise the work to support the eventual Metrology Act.

In terms of the Trade Metrology Regulations: Part 1, many of the requirements were able to be deleted in favour of referring to the applicable harmonised SADCMEL documents. Current requirements not covered in the SADCMEL documents were also amended as necessary to reflect latest best practice. In a few cases the regulations will need to be discussed with stakeholders or an investigation done into current practices (e.g. requirements for the sale of bread and the weighing of meat carcasses at abattoirs) before the regulation can be finalised. The amended regulations will now also need to be edited. This work can now be finalised by NSI.

In terms of the Trade Metrology Regulations: Part 2, the text of the regulations was generally aligned with terminology used in the Bill and regulations considered obsolete were deleted. Regulations on beam scales and mechanical counter scales were replaced with SADCMEL harmonised requirements and requirements for non-automatic weighing instruments were replaced by OIML R 76-1 requirements which have been adopted in a Namibian national standard. New requirements were also included for:

a) verification, protective and rejection marks;
b) Namibian type approval mark and continued use of the current mark on instruments verified before the new regulations come into force;
c) re-verification intervals for instruments, and
d) obligation of users to register regulated measuring instruments with NSI

A number of matters remained outstanding, which will, and can, now be finalised by NSI without further expert input. In particular, Parts lll to Vl of the current regulations still need to be addressed and updated, and several documents were provided by the consultant to assist in the review and amendment process.

Regulations, not covered under the various parts of the existing Regulations, that will be required at implementation of the new Act include:

a) Tariff of fees to be charged (additional charges made possible in new Act).

b) Appointment of the Standards Council as the governance body for Metrology and specify its duties under the Metrology Act.
c) Publish by notice in the Gazette the names of persons appointed to the Metrology Advisory Committee.
d) Regulations concerning the National Units of Measurement.
e) Regulation designating the National Measurement Standards and conditions under which they are recognised; and
f) Publish a notice in the Gazette setting out requirements for registration of importers, sellers and repairers of measuring instruments.

To complete the review of the current regulations and to draft all required regulations will probably take several months as stakeholders will need to be consulted by NSI in several cases.

Overall, the mission achieved somewhat more than had initially been expected, and NSI now has the direction and the capacity to complete the process of identifying the remaining Regulations needed for the eventual implementation of the Metrology Act. Please also refer to Annex 4 for more details, including the amendments to the Trade Metrology Bill and the recommended implementing regulations referred to above.

Activity 2.1: The NSI Integrated Stakeholder Engagement Plan and SME Support Programme are drafted

The KE2 conducted in depth fact finding and research into the needs of NSI for a Stakeholder Engagement Plan and an SME Support Programme (for a detailed account of KE2's findings and the draft plans, refer to Annex 5A). Results and proposals may be summarised as follows:

Stakeholder Engagement Plan:

Based on feedback from a combination of the desk and field research completed, NSI is currently experiencing a resource and capacity deficit, with serious issues to be addressed in terms of unpredictability of the GRN grant; critical turnover of skilled staff; inadequate understanding of stakeholder needs; as well as the absence of robust marketing/promotion of NSI services.

Due to limited capacity, the rationale in the development of the Integrated Stakeholder Engagement Plan is that NSI senior management should adopt a focused and targeted approach in the immediate-short term, maximising the impact of NSI interventions in defined priority sectors.

In implementing this focused and targeted approach, it is proposed that the focus of engagement be centred on **two priority sectors/areas**:

- **Retail Charter/Supplier Development Programme ("Growth at Home" initiative)**
- **Agro Marketing and Trade Agency (AMTA) - Fresh/Chilled Produce**

Especially considering the important need for Namibia to substitute imported fresh produce on the domestic market with local fresh produce of equal or higher standard, adherence to international quality and food safety standards is essential. In parallel, the processing and marketing of value-addition fresh/chilled produce can lead to new employment creation as well as the development of new exports by high potential start-up MSMEs in the fresh/chilled produce sector.

Therefore, for NIS to 'carve-out' a new and pro-active role in standards development with the fresh produce sector in Namibia, there will be a need for affirmative action by NSI senior management in

the immediate term, inclusive of the drawing-up of a strategic partnership between NSI and AMTA (MOU agreement).

This MOU is intended to act as the first step in the development of a Stakeholder Engagement Plan between NSI and AMTA, and as the catalyst for new initiatives to be implemented with both targeted MSMEs and smallholder farmers in the fresh produce sector, in terms of standards development, certification, and value-added conformity assessment services.

It is recommended that NSI senior management pursue in the immediate term, the opportunities that exist for enhanced collaboration between NSI and AGRIBUSDEV and NAB respectively, inclusive of drawing-up MOU agreements with each organisation.

It is also recommended that NSI senior management put together a dedicated team within the Standards Development and Coordination Department in the immediate term, so as to facilitate, coordinate, and manage the delivery of the outputs indicated under Proposals 1 & 2 above.

(M)SME Support Programme:
In parallel with the development of the Stakeholder Engagement Plan, it is proposed that NSI develop two pilot MSME Support Programmes in the short term, to be centred on the implementation of new initiatives in HEALTH and SAFETY with two sectors:

- **INFORMAL FOOD VENDORS** (With a focus on Food Safety)
- **SMALL CONTRACTORS/SUB-CONTRACTORS in the CONSTRUCTION SECTOR** (With a focus on Occupational Health and Safety)

Full details are given in Annex 5A. During the interviews with stakeholders to refine these plans, the contents of the Namibian Government's "Vision 2030" document and the Harambee Prosperity Plan for Namibia were taken into account to provide direction. These documents are reproduced in Annexes 5B and 5C respectively.

Activity 3.1: Training on Implementation and Auditing of HACCP and specific ISO standards (training for certification personnel and inspectors)
Under this activity, three separate training courses have been presented as planned for NSI staff:

- HACCP and ISO 22000 "Food Safety Systems" (5 days on-site) – This course provided an overview of both standards with particular emphasis on HACCP auditing techniques;
- ISO 9001 -– Requirements for Quality Management Systems (5 days on-site). Emphasis was placed on the latest revised version of ISO 9001 which was issued by ISO in 2015; and
- Product sampling techniques, and packaging and labelling requirements for Inspectors (5 days on-site), with specific reference to SADCMEL Documents 1 and 4.

Details of the course material presented, and of the evaluation processes conducted, where relevant, are given in Annexes 6, 7 and 8.

Activity 3.2: Training on in-depth understanding of ISO requirements in relation to conformity assessment and certification
A further three courses were successfully presented as planned to NSI Certification staff, based on the following International Standards:

- ISO/IEC 17021 - Conformity Assessment – Requirements for bodies providing audit and

certification of management systems,

- ISO/IEC 17065 - Conformity Assessment - Requirements for bodies certifying products, processes and services,

- ISO/IEC 17024 - Conformity Assessment - General Requirements for bodies operating certification of persons.

Again, further details of the course material presented, and of the evaluation processes conducted, where relevant, are given in Annexes 9, 10 and 11.

Activity 3.3: Auditing Attachment for certification personnel of the NSI

The auditing attachments were carried out for four of the Certification staff of NSI, over five working (5) days at Kenya Bureau of Standards (KEBS) in Nairobi, Kenya with the aim of equipping the staff with the knowledge and skill of conducting audits, and subject them to a competence evaluation process to determine their ability to apply required knowledge and skills during audits in line with Clause 7.1.3 and 7.2.4 of the ISO/IEC 17021:2015.

The purpose of the audits was to establish conformity to the ISO 9001:2008 requirements and continual improvement of the University of Nairobi (UoN); to evaluate the ability to meet the applicable statutory, regulatory and contractual requirements for the purpose of continued certification, and evaluate continual improvement of the system and evaluate the effectiveness for the correction and correction actions from previous audits. Audits carried out by an experienced auditor were initially observed from the viewpoint of trainee auditors, and one of the attached staff was then subjected to a Competence Evaluation for possible registration as a Quality Management System Auditor.

Two written examinations were given on both the ISO 9001:2008 and ISO 9001:2015 standards, which is very critical for the Certification Personnel in demonstrating competency in that they have necessary knowledge and skills on the requirements of the QMS and meeting the requirements of Clause 7 – Resource Requirements of ISO/IEC 17021.

During the audit attachment, the trainee auditors had the opportunity to observe audits at various colleges and their departments within the university. The trainee auditors were also encouraged to ask questions and interact during these audits, in order to familiarize themselves with the auditing process and to gain confidence in carrying out audits. The trainee auditors also became familiar with ways of drawing up an audit checklist (aspects of the system to be checked). See Annex 12A for further information.

Activity 3.4: Attachment Programme for 2 NSI inspectors to conduct inspection on crustaceans, lobsters, crabs

A number of scheduling difficulties prevented NSI from sending staff on attachment for activities 3.4 and 3.5 during the early stages of the project. Eventually a tentative agreement was reached to send staff to the National Regulator for Compulsory Specifications (NRCS) in South Africa for the two attachments as detailed in the Inception Report. However, additional snags surfaced when the NRCS expressed discomfort at taking what it saw as staff from a foreign competitor organisation to witness the relevant inspections at South African export factories. The management of NSI visited

NRCS in an attempt to smooth the way for these two attachments to take place, and ultimately a compromise was reached, in that, for activities 3.4 and 3.5, three inspectors from NSI would be sent on attachment to the Pretoria laboratories of NRCS for a week, to be exposed to the methodologies of inspecting and testing seafood and other food products by NRCS. While this arrangement is less helpful than that originally requested, it has been useful to expose the NSI inspectors to the testing and inspection regimes in use at NRCS. Their joint report on activities 3.4 and 3.5 can be found in Annex 12B.

Activity 3.5: Attachment Programme for 2 NSI inspectors to conduct inspections of canned fish and canned meat products at a factory

See comment in 3.4 above.

Activity 4.1: Gap analysis and technical capacity building for chemistry and microbiology staff of the NSI Food Laboratory

This activity was initially intended to be a gap analysis of the NSI Testing Centre; assessment of readiness for accreditation against the requirements of ISO/IEC 17025; and technical capacity building to achieve accreditation. However, the NSI Testing Centre has already obtained accreditation of the Chemistry and Microbiology laboratories since the Terms of Reference were developed. The Team Leader therefore refined the output of Activity 4.1 in conjunction with the management of the NSI Testing Centre during the Inception phase so that the focus was to build upon and polish the existing Quality System rather than doing an assessment at a pre-accreditation level. In addition, the KE3 was requested to define criteria and priorities for the introduction of a Laboratory Management Information System (LIMS).

In terms of the Quality System, a number of findings were realised, of quality objectives that should be identified during management review and reviewed at the following management review:

- Stated turnaround time – where there is a certain amount of customer dissatisfaction;
- Resource Supply and Repair - where the Heavy Metal laboratory is not operating due to repair of a microwave digester and of the Hyda-C Direct Mercury Analyzer which have resulted in the laboratory contracting this work out to another accredited laboratory; and
- LC-MS-MS Commissioning – where the transition of the lipophilic algal toxin testing of Diarrhetic Shellfish Poisoning (DSP) by mouse assay to LC-MS-MS is proving difficult. The LC-MS-MS is available but the commissioning and validation of the methods for lipophilic toxins is proving to be a challenge. (Note that this specific problem was addressed by the addition of a new Activity 4.4.)

In addition, improvements were suggested in terms of the processes in use at the Laboratory for Corrective Action; Preventive Action, Complaints, and Improvement, as well as in the way internal audits and the Management Review processes are carried out.

A workflow evaluation of the microbiology laboratory revealed a lack of organisation that is resulting in a waste of human resources, and a number of recommendations were made in relation to future equipment procurement for the Heavy Metals Laboratory. Ad hoc vertical audits also revealed a number of technical findings in relation to specific analytical techniques.

With regard to the introduction of a LIMS system, while the above findings were symptomatic of issues that need to be addressed before this takes place, it was also recommended that a LIMS system needs to be phased in gradually. Please also refer to the individual report in Annex 13.

Activity 4.2: Selected NSI Laboratory Staff is trained on the in-depth understanding and implementation of ISO/IEC 17025 requirements

The focus of this activity was refined during the inception phase to cover:

a) A 5-day training course on Internal Auditing of the implementation of ISO/IEC 17025 requirements and
b) A 5-day training course on Validation of Test Methods and on Measurement Uncertainty of test results.

The auditing training course was conducted over a 5-day period from 9-13 May 2016. The first 2,5 days focused on a review of practical aspects of the requirements of ISO/IEC 17025 and the remainder of the week focused on Internal Audit techniques; recording of findings; and practical scenarios of conducting technical audits in the laboratory. Two evaluations of understanding were conducted during the course, the first consisting of an evaluation of competence in writing observations/findings that would be encountered during an internal audit and the second consisting of a written 2-hour examination on ISO/IEC 17025 understanding and on audit case studies. The results of these evaluations are discussed in the report in Annex 14.

The Validation and Measurement Uncertainty course was conducted over a 5-day period from 16-20 May 2016. The first 3 days focused on validation and verification of test methods and covered the following aspects:

- Central Tendency Statistics
- Population vs Sample
- Measures of dispersion
- Probability distributions
- Central Limit Theorem
- Standard Error of the Mean
- Sample distribution of the Sample Mean
- Z & t-statistics
- Confidence Intervals
- Hypothesis testing
- One & two tailed tests
- Outlier tests
- Student t-tests & their applications
- ANOVA
- Ruggedness testing
- Linear regression, Correlation & Linearity
- Selectivity/Sensitivity
- Working Range
- LOD, LOQ.

The remainder of the week focused on Measurement Uncertainty approaches (Types A and B). The emphasis throughout the course was on practical aspects and group and individual exercises formed a large part of the training. In addition, the group exercises included verification and measurement uncertainty calculations on the NSI test methods by using their existing verification data and CRM measurement uncertainty data. Further details are given in Annex 15.

Activity 4.3: Expert technical assistance on site to resolve method development and validation problems for the LCMS/MS method for lipophilic toxins and HPLC method for PSP.

This additional activity was conceived during the inception phase to assist the laboratory with difficulties being experienced with these assays, accreditation in which will be essential for the future certification of fish exports to the European Union. The activity broke down into the following more specific objectives:

a) **Laboratory expert attachment for lipophilic and PSP toxin analysis.**

- Expert assistance to resolve remaining problems on the LC-MS/MS method for extraction, hydrolysis step, quantification strategies, intra-lab validation, data processing, troubleshooting, quality control requirements and interpretation of toxin profiles found in samples from Namibia.
- Expert assistance to resolve remaining problems on the full-quantitative HPLC-FLD method, periodate and peroxide derivatization, COOH-SPE fractionation, interpretation of the chromatograms, full quantification of individual toxins, calculation of saxitoxin equivalents, automated operation and improvements on sample throughout, troubleshooting, quality control requirements and interpretation of toxin profiles found in samples from Namibia.

b) **Assistance with method validation.**

Evaluation of method validation protocol and report, optimization of use of certified reference material for routine based on method validation results and practical demonstration on calculation of method validation parameters.

The ten-day mission was successful in meeting all its objectives, and the NSI laboratory is well equipped now to obtain accreditation in due course. For more details, refer to Annex 16.

Activity 4.4: Attachment Programme for the NSI Food Laboratory QA Officer to visit a food laboratory with a fully-functioning LIMS system

When planning Activities 4.1 and 4.2 during the project inception phase, it became apparent that the discussion of the introduction of a Laboratory Information and Management System, or LIMS, would be better understood if the QA Officer from the NSI Food Laboratory could be exposed to a working LIMS in a fully operating food laboratory. Accordingly, an attachment was organised to the laboratories of Public Health England for three days in March 2016, with the objective of gaining familiarisation with:

An overview of LIMS system including the following:

- Validation of LIMS
- Training of users for LIMS to generate competency records for users
- Which components/requirements of the QMS are carried out using LIMS
- How to work towards getting accreditation of a LIMS system
- Backups for a LIMS system to ensure continuous operation; and

An overview of the QMS for an effective and suitable functioning system including:

- Organisation (Clause 4.1)
- Document Control (Clause 4.3)

- Review of Requests (Clause 4.4)
- Purchasing of Services and Supplies (Clause 4.6)
- Complaints (Clause 4.8)
- Improvement (Clause 4.10)
- Corrective Action (Clause 4.11)
- Preventive Action (Clause 4.12)
- Internal Audits (Clause 4.14)
- Management Reviews (Clause 4.15)
- Equipment (Clause 5.5)
- Measurement Traceability (Clause 5.6)
- Handling of Test Items (Clause 5.8)
- Test Reports (Clause 5.10)

The attachment was successful, and the large amount of information gained by the QA Officer will assist the NSI Food Laboratory in revising its QMS and in preparing for the eventual introduction of a LIMS. A mission report was prepared and is annexed as Annex 17.

Activity 5: Final National Workshop

A Final National Workshop was held over two days, to acquaint public and private sector stakeholders with the project's results and findings, and to conduct familiarisation briefings and training on the relevant WTO Agreements (TBT, SPS), the work of International Standards Setting Organisations, and the Namibian National Standards Development Process. In particular, the Workshop allowed the opportunity for the KE2 to present the draft Stakeholder Engagement Plan and the SME Support Programme, and to interact with stakeholders over their contents and modalities for their implementation. The workshop was fairly well attended, with over 40 participants on each day, and received an opening address on the second day from the EU Ambassador to Namibia, Ms Jana Hybaskova.

The standards- and TBT-related training sessions were well received, and a number of pertinent comments were made relating to the content of the Stakeholder Engagement Plan and the SME Support Programme. The closing presentation of the workshop drew together all the project's activities and reported on them against its initial objectives. All objectives had been met and all activities successfully concluded, with the exception of amended attachment missions under Activities 3.4 and 3.5, which had been rescheduled to take place after the Final Workshop. For further details of the workshop, including all presentation materials, please refer to Annex 18.

3 RESULTS ACHIEVED

3.1 Results in terms of Logframe objectives

The project has achieved all of its objectives from the Inception Report and the revised activity list, at the level of the activities completed, and has thus fully met expectations, with the possible exception of the rearranged attachments to NRCS under activities 3.4 and 3.5, where it turned out that the planned attachments were never going to be permitted to take place in the manner intended.

In terms of the objectively verifiable indicators stated in the Logframe, the overall objective of the project is expected to result in enhanced trade and an increased number of standards adopted and implemented going forward. These indicators can only be verified over time, however all indications are that NSI, through a growing number of technical committees, will indeed pick up its rate of standards adoption, and the stakeholder engagement activities of NSI, including those initiated under this project, should ensure that the implementation side of this happens. A number of international studies have suggested that a working standards and quality infrastructure can add up to 3 % to GDP, and it thus seems likely that, if NSI continues along its path under the forthcoming NQP, trade figures will indeed improve. The Namibian economy is currently going through a difficult period though, and such improvements might only show themselves over a five to ten year period.

Other Logframe indicators relating to the individual activities are easier to assess. The existence of a revised Quality Policy (coming via UNIDO), strengthened WTO TBT Enquiry and Notification Points, and the existence of Technical Regulations for the new Trade Metrology Act are all either in place or imminent. The NSI Integrated Stakeholders' Engagement Plan and SME Support Programme have been drafted; and the planned training on HACCP and specific ISO standards (training for certification personnel and inspectors), and conformity assessment and certification have successfully been implemented. The attachment programmes were successfully implemented, with the exception of the difficult situation regarding attachments 3.4 and 3.5, and an initially unplanned attachment of the laboratory QA Officer to Public Health England will pay big benefits when the laboratory installs and implements a LIMS system. Finally, the training on ISO 17025 was completed, and thus the objectives and requirements in the Logframe can be said to have been well met.

3.2 Results in terms of changes for the beneficiary

The NSI and the Namibian economy in general, are going through a period of rapid change. While the economy is struggling at present, there is still a determined move toward bringing the national quality infrastructure up to date and aligning it with international best practices. The NSI is expanding on all fronts – in standardisation, testing and inspection, certification, assistance to regulators - and thus all the interventions under this project have come at an appropriate time.

The assistance rendered in relation to comments on the NQP and the standards and legal metrology legislation will enable NSI to move forward under a properly constructed quality infrastructure designed to meet the challenges of the 21st Century. The proposed stakeholder engagement and SME assistance outputs, together with the suggestions for promotional posters for NSI, will no doubt assist the institution to increase its relevance, and therefore its reach, in the coming years.

All training and attachments carried out under the project have therefore been aimed at assisting NSI to meet its current challenges by honing the skills of its staff. The trainees were appropriately

selected, generally performed well in evaluations, and a broad improvement in their application of the techniques taught can now reasonably be expected.

3.3 Implications and opportunities for future interaction between NSI and the SME sector

The interactions with stakeholders over the design of the Stakeholder Engagement Plan and the SME Support Programme were extremely positive, as were the experiences of stakeholder contact during the Final National Workshop, where a good mix of stakeholders was present. During the final workshop, a number of relevant points were made by stakeholders that will guide the NSI in its future direction. Stakeholders stressed the importance of getting good quality Namibian products onto retail shelves rather than imported products from South Africa, as import substitution would have a knock-on effect in creating employment. A number of opportunities in the food sector are clear for tourism operators to source locally, provided the necessary certifications and traceability can be shown, and this gives NSI a clear message about a key focus area for the future. In this sphere, NSI's future interactions with SMEs should also be guided by what the purchaser wants, in order to ensure that products and services placed on the market will align with real demand.

Informal food vendors, for example, need to understand good food hygiene practices, which implies a need for relevant service standards and follow up. In the construction sector, particularly with Health and safety in mind, NSI would be well advised to produce booklets to support adopted standards for protective wear in the workplace. There is also a clear opportunity for QMS standards to be applied in service industries generally in Namibia.

4 KEY FINDINGS AND RECOMMENDATIONS

4.1 Key project findings and lessons learnt

The Project has completed its tasks, amended as per the recommendations of the Inception Report, and has achieved its main objectives as per the Logframe. The beneficiary, NSI, is in a growth phase owing to the increased range of demands placed on it by Government, which will be enshrined in the forthcoming revision of the NQP. It therefore required interventions to assist it in several technical areas, and all of these have been successful in meeting their objectives. However, as NSI continues to grow into its expanding role, it can be expected to take on new challenges and need additional resources, especially human resources, to address these. The need for ongoing capacity building will therefore not go away, and will be evident across the range of NSI's services.

As a result of the project's interventions, NSI is now in a much better position to certify certain exports, to take on the challenge of interacting with and growing its support base among a range of stakeholders at all levels, including SMEs, for whom an increasing level of support will be needed, and to increase its range of testing and certification offerings to new stakeholders and customers in support of the broader economy.

On 1st October, 2016, one day after the conclusion of the Final National Workshop, the Economic Partnership Agreement, or EPA, with the European Union came into force. In theory this will have an immediate benefit for Namibia in that produce such as table grapes, fish and meat, together with other primary commodities, can be exported at a minimum tariff, or tariff-free, to the EU, BUT this will succeed only if the necessary certifications are in place (for example phytosanitary certificates and traceability, etc., depending on the buyer). The demands on NSI, especially in the absence of other agencies that are equipped to carry out certain tasks, will therefore grow.

At the same time, there is growing demand at home for import substitution, as most retail chains are accustomed to importing from neighbouring South Africa. The benefits of this, together with the job creation it brings, can only be achieved if the necessary confidence in the quality of local products can be demonstrated, and NSI will inevitably have a big role to play in this.

At the level of stakeholder engagement, which is critical if NSI is to develop a culture of quality, to keep the public interested in its operations and grow its customer base and the level of stakeholder support and participation in Technical Committees, there remains much work to be done, both technical and of a promotional nature. Regardless of NSI's technical prowess, its impact needs to be seen and understood by the public at large, by commerce and industry, and by government regulators. Government needs to play its part in supporting NSI in meeting this challenge, both logistically and financially, as without this, the updating of the national quality infrastructure runs the risk of failure or, just as important, or being rendered irrelevant.

The technical assistance successfully rendered under the project is therefore not the beginning of the end of NSI's needs, but perhaps, "the end of the beginning", and going forward a new range of interventions will be called for, across the board.

4.2 Recommendations for possible future actions to be put in place by the beneficiary

NSI needs now to build on and implement the stakeholder engagement and SME support mechanisms proposed as a result of the project, to grow its support base and to engender in the Namibian public a demand for quality and a level of recognition of the benefits of NSI's services.

The forthcoming National Quality Policy will place demands on NSI as well as on Government, with whom the relationship must be managed for the good of consumer protection, enhanced exports and import substitution. But the NQP will not solve all of the challenges NSI or the broader Namibian economy faces. There is a clear need to supplement the new NQP with a carefully thought out National Standards Strategy, in which the sometimes contradictory demands of all aspects of the marketplace need to be weighed. There is a need in Namibia also for a proper, modern Technical Regulations Framework, which can only come about if and when Government Ministries and other Regulators understand and accept the need for comprehensive risk-based and proportionate levels of protection, based on international best practices, both for the consumer and the environment, but also for Namibia's export quality and in terms of import control.

In this regard, there is a large opportunity for NSI to put in place, along with Government partners, an appropriate level of import inspection regime accompanied by a workable market surveillance system.

All of these initiatives will pose challenges for NSI, which must ultimately be met.

4.3 Recommendations for possible additional donor support interventions

As NSI, and the demands placed upon it, continues to grow in all directions, there are clear opportunities and needs for further assistance:

- In the area of SME support, once the initial Pilot Support Programmes have become established and lessons learned, there will be opportunities for small donor projects to extend these programmes into other areas of the fishing, agriculture, tourism support, small manufacturing, construction and transportation sectors. Suitable target sectors where value can be added would need to be identified and the necessary support interventions

characterised;

- Difficulties in certifying Namibian products for export are likely to arise from time to time. As with the intervention in Activity 4.3 of the current Project, these can be investigated and solved with external technical assistance on an ad hoc basis;
- With regard to possible larger projects, the growing pains of NSI are clear, and there is an opportunity to make a difference by the provision of technical assistance across the range of NSI's services. For example:

    - Assistance with the ramping up of standards production to meet the demands of Namibian stakeholders for Namibian rather than South African standards, and with the development of a National Standards Strategy based on demand in key sectors;
    - Assistance with the establishment of a best practice Technical Regulation Framework;
    - Assistance with the development of an Import Inspection and Market Surveillance scheme for consumer protection;
    - Assistance to expand the range of Industrial and Legal Metrology services (calibrations, verifications, inspections, market surveillance);
    - Assistance to expand the range of laboratory testing techniques and to gain accreditation in more key areas, aimed at enhancing exports;
    - Assistance to expand the range of product and system certification schemes.

5 LIST OF ANNEXES

The annexes referred to below are made available separately on a CD-ROM.

Annex 1: Activity 1.1 Needs Assessment
Annex 2: Reports on Activities 1.2 and 1.3
Annex 3A: Comments on draft National Quality Policy (NQP)
Annex 3B: Previous (1999) version of NQP
Annex 3C: Namibia Standards Act: (Act 18 of 2005)
Annex 4: Outputs – Activity 1.4 – Inputs to Trade Metrology Bill and Regulations
Annex 5A: Outputs – Activity 2.1 – Integrated Stakeholder Engagement Plan and SME Support Programme
Annex 5B: Vision 2030 document
Annex 5C: Harambee Prosperity Plan
Annex 6: Activity 3.1 Training (HACCP and ISO 22000)
Annex 7: Activity 3.1 Training ISO 9001
Annex 8: Activity 3.1 Training SADCMEL Documents 1 and 4
Annex 9: Activity 3.2 Training ISO-IEC 17021
Annex 10: Activity 3.2 Training ISO-IEC 17065
Annex 11: Activity 3.2 Training ISO-IEC 17024
Annex 12A: Activity 3.3 Attachment to KEBS / Audits at University of Nairobi
Annex 12B: Activity 3.4 and 3.5 attachments to NRCS
Annex 13: Outputs Activity 4.1
Annex 14: Activity 4.2 Training ISO-IEC 17025
Annex 15: Training in Measurement Validation
Annex 16: Outputs Activity 4.3
Annex 17: Activity 4.4 - Attachment Public Health England
Annex 18: Activity 5.1 Report and presentation materials from Final National Workshop
Annex 19: One Page Summary of Project Results and Achievements for Website