



## CAMEROON BIOSECURITY PROJECT

*Development and Institution of a National Monitoring and Control System (Framework) for Living Modified Organisms (LMOs) and Invasive Alien Species (IAS)*

## TRAINING MANUAL IN INSPECTION SYSTEMS AND METHODS INCLUDING TREATMENTS

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### Under the Supervision of:

Project Component Three Taskforce (MINESUP)

&

The Biosecurity Project Coordination Unit (MINEPDED)



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## LIST OF ACRONYMS AND ABBREVIATIONS

<b>ABBREVIATION/ ACRONYM</b>	<b>FULL NAME</b>
<b>AC</b>	Animals Committee
<b>AEWA</b>	Agreement on the Conservation of African-Eurasian Migratory Water Birds
<b>AIA</b>	Advance Informed Agreement
<b>ALPP</b>	Areas of Low Pest Prevalence
<b>ANOR</b>	Agency for Standards and Quality
<b>AP</b>	Adventitious Presence
<b>APHIS</b>	Animal and Plant Health Inspection Service
<b>BNF</b>	Biological Nitrogen Fixation
<b>BTS</b>	Border and Transportation Security
<b>BWM</b>	Ballast Water Management
<b>BWMS</b>	Ballast Water Management System
<b>CAC</b>	Codex Alimentarius Commission
<b>CBD</b>	Convention on Biological Diversity
<b>CBP</b>	Cameroon Biosecurity Project
<b>CITES</b>	The Convention on International Trade in Endangered Species (of Wild Flora and Fauna)
<b>CNDT</b>	National Committee for Technology Development
<b>COP</b>	Conference of the Parties
<b>CPB</b>	Cartagena Protocol on Biosafety
<b>CBPA</b>	Customs and Border Protection Agency
<b>CMS</b>	Convention on Migratory Species
<b>CPM</b>	Commission on Phytosanitary Measures
<b>CSOs</b>	Civil Society Organizations
<b>DNA</b>	Deoxyribonucleic Acid
<b>ELISA</b>	Enzyme-Linked Immunosorbent Assay
<b>EPPO</b>	European and Mediterranean Plant Protection Organization
<b>EFSA</b>	European Food Safety Authority
<b>ERA</b>	Environmental Risk Assessment
<b>ETO</b>	Ethylene dioxide
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization of the United Nations

<b>FMD</b>	Foot and Mouth Disease
<b>GATT</b>	General Agreement on Tariffs and Trade
<b>GEF</b>	Global Environment Facility
<b>GIASI</b>	Global Invasive Alien Species Information
<b>GISD</b>	Global Invasive Species Database
<b>GISP</b>	Global Invasive Species Programme
<b>GM</b>	Genetically Modified
<b>GMOs</b>	Genetically Modified Organisms
<b>GMP</b>	Good Manufacturing Practices
<b>HIV</b>	Human Immunodeficiency Virus
<b>HIV/AIDS</b>	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
<b>HPR-</b>	Highly Polymorphic Region-
<b>HPR0</b>	Non-deleted Polymorphic Region
<b>IAPSC</b>	Inter-African Phytosanitary Council
<b>IAS</b>	Invasive Alien Species
<b>ICAO</b>	International Civil Aviation Organization
<b>IHRs</b>	International Health Regulations
<b>IMO</b>	International Maritime Organization
<b>IMPM</b>	Institute of Medical Research and Medicinal Plant Studies
<b>IPPC</b>	International Plant Protection Convention
<b>IPFSAPH</b>	International Portal on Food Safety, Animal and Plant Health
<b>IRAD</b>	Institute of Agricultural Research for Development
<b>ISAV</b>	Infectious Salmon Anaemia Virus
<b>ISPM</b>	International Standards for Phytosanitary Measures
<b>ISSG</b>	Invasive Species Specialist Group
<b>ITTA</b>	International Tropical Timber Agreement
<b>ITISs</b>	Infrared Thermal Image Scanners
<b>IUCN</b>	International Union for Conservation of Nature
<b>LANAVET</b>	National Veterinary Laboratory
<b>LLP</b>	Low level presence
<b>LMOs</b>	Living Modified Organisms
<b>LMO-FFPs</b>	Living Modified Organisms intended for use as Food, Feed or Processing
<b>MEAs</b>	Multi-lateral Environmental Agreements
<b>MEPC</b>	Marine Environment Protection Committee
<b>MINADER</b>	Ministry of Agriculture and Rural Development

<b>MINEE</b>	Ministry of Water Resources & Energy
<b>MINEPIA</b>	Ministry of Livestock, Fisheries and Animal Industries
<b>MINEPDED</b>	Ministry of Environment, Protection of Nature and Sustainable Development
<b>MINESUP</b>	Ministry of Higher Education
<b>MINFOF</b>	Ministry of Forestry and Wildlife
<b>MINTRANSPORT</b>	Ministry of Transport
<b>MINPOSTEL</b>	Ministry of Post and Telecommunications
<b>MINRESI</b>	Ministry of Scientific Research and Innovation
<b>MINSANTE</b>	Ministry of Public Health
<b>NBSAPs</b>	National Biodiversity Strategies and Action Plans
<b>NGOs</b>	Non-Governmental Organizations
<b>NPPO</b>	National Plant Protection Organization
<b>OIE</b>	Organisation for Animal Health
<b>PoE</b>	Points of Entry
<b>PCR</b>	Polymerase Chain Reaction
<b>PFA</b> s	Pest Free Areas
<b>PRA</b>	Pest Risk Assessment
<b>PMRP</b>	Propagative Monitoring and Release Program
<b>PSC</b>	Port State Control
<b>rDNA</b>	Recombinant DNA
<b>RM</b>	Risk Management
<b>RNQP</b>	Regulated, non-quarantine pest
<b>RPPOs</b>	Regional Plant Protection Organizations
<b>RAPID</b>	Ruggedized Advanced Pathogen Identification Device
<b>SARS</b>	Severe Acute Respiratory Syndrome
<b>SBSTTA</b>	Subsidiary Body on Scientific Technical and Technological Advice
<b>SCBD</b>	Secretariat to the Convention on Biological Diversity
<b>SOPs</b>	Standard Operating Procedures
<b>SPB</b>	Strategic Plan for Biodiversity
<b>SPF</b>	Specific Pathogen Free
<b>SPS Agreement</b>	Agreement on the Application of Sanitary and Phytosanitary Measures
<b>SSC</b>	Species Survival Commission
<b>STDF</b>	Standards and Trade Development Facility
<b>STEEEP</b>	Social, Technical and Scientific, Economic, Environmental, Ethical, Policy & Political

<b>TBM</b>	Transboundary Movement
<b>TBT</b>	Technical Barriers to Trade
<b>ToT</b>	Training of Trainers
<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>UNEP</b>	United Nations Environment Programme
<b>UNDP</b>	United Nations Development Program
<b>USDA</b>	United States Department of Agriculture
<b>VFZ</b>	Vector Free Zones
<b>WHO</b>	World Health Organization
<b>WTO</b>	World Trade Organization
<b>WWF</b>	World Wide Fund for Nature

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## EXECUTIVE SUMMARY

### Project Purpose and Justification

The Cameroon Biosecurity Project (CBP) entitled “*Development and Institution of a National Monitoring and Control System (Framework) for Living Modified Organisms (LMOs) and Invasive Alien Species (IAS) is aimed at increasing the capacity of stakeholders to prevent and control the introduction, establishment and spread of IAS and management of LMOs in Cameroon through the implementation of a risk-based decision making process. The project addresses four barriers as follows:*

1. Ineffective policy, regulatory and institutional framework for the effective prevention and control of the introduction, establishment and spread of biological invaders,
2. Inadequate implementation of cost-effective risk-based biosecurity measures,
3. Insufficient capacity for a risk-based approach to biosecurity management and,
4. Lack of information to inform management and low levels of awareness among key stakeholder groups.

The project seeks to address these gaps through implementation of four interlinked components i.e.

- i. **Component 1 (Policy & Regulatory Framework):** Establishment of policy and regulatory framework for effective prevention and control of the introduction, establishment and spread of biological invaders.
- ii. **Component 2 (Implement sustainable biosecurity strategies):** Implement sustainable strategies for the risk-based management of priority pathways and species for IAS and LMOs.
- iii. **Component 3 (Capacity Building):** Build capacity to enable the control of the entry, establishment and spread of IAS and management of LMOs.
- iv. **Component 4 (Information and Awareness):** Raise awareness of key stakeholder groups on risks, impacts and management of IAS and LMOs.

### Objectives of the Study

The objective of the activity was to develop a Training of Trainers Course in Inspection Systems and Methods including Treatments for Cameroon. The Project is aimed at raising awareness on inspection methods and best practice for treatment as part of an integrated risk-based approach to biosecurity amongst key stakeholder agencies in Cameroon including the country’s 28 phytosanitary inspection posts. This is in recognition of the important role of preventing the introduction of invasive species as the first line of defence as part of a risk-

based management system for biological invasions and the role that effective inspection systems play.

By the end of the training, trainees are expected to:

1. Understand inspection systems, inspection methods and treatment processes for movements of people and products into a country.
2. Have an overview of risk management analysis - selection of appropriate management options.
3. Understand inspection sampling methods and how they are used as a means of detection of a risk organism or its symptom.
4. Have an overview of the different treatment options available for different species / species types / commodities.

## **Methodology**

In developing the Manual, the Consultants conducted a desktop review of National documents including legal and policy documents, documents produced under the CBP, Journals as well as documents developed by international organizations. Examples here include leading international agencies such as under the Convention on Biological Diversity (CBD), the Global Invasive Species Programme (GISP), the International Maritime Organization (IMO), the International Plant Protection Convention (IPPC), the Organization for Animal Health (OIE), the Food and Agriculture Organization (FAO), the World Trade Organization (WTO), the International Union for Conservation of Nature (IUCN).

Relevant material was drawn from these sources and consolidated into the Training Manual. Direct interviews were also conducted with experts and key personnel at stakeholder institutions in order to develop the Case studies on systems, processes and approaches applied in handling the recent Ebola and Avian influenza in Cameroon. An initial draft of the Manual was presented to the Component 2 Task Team. A Training of Trainers (ToT) Workshop was then held under the related Activity C6 (Component 3). Thirty (30) participants were selected to participate in the ToT Workshop. Participants were drawn from lead institutions responsible for various biosecurity sectors including government ministries, Research Institutions, Universities, Non-Governmental Organizations and others. The training methodology used was participatory involving Power Point Presentations, Group Work and Discussion. Following the workshop, the Manual was developed further using inputs and recommendations of participants at the ToT.

The Manual was presented to the Task Team for Component 2 and further refined based on their inputs.

## **Results**

The synthesis of this process is presented in Five Modules as follows:

- Module 1: Review of Basic Concepts: This Module is a revision of basic concepts related to various biosecurity sectors.
- Module 2: The Institutional and Regulatory Framework for Management of Risk Pathways. This Module is aimed at enhancing the understanding of inspection systems, inspection methods and treatments processes for movements of people and products into a country.
- Module 3: Risk Analysis. This Module begins with a definition of Risk Analysis and its components i.e. Risk Assessment, Risk Management and Risk Communication.
- Module 4: Treatment Options. This Module considers treatment methods and various classes of pests and products they can be applied to.
- Module 5: Technical and Administrative Issues. This Module considers various technical and administrative issues involved in inspection.

## **Recommendations**

**A. Preparation of guidance documents and Standard Operating Procedures:** There currently exists gaps in terms of detailed guidance in a number of key areas. It is recommended that the following are developed with utmost urgency:

- Manuals for cleaning vehicles and equipment with particular emphasis on imports of used vehicles and agricultural equipment.
- Guidelines for inspection and monitoring of contained use facilities working with LMOs, checklists and record forms
- Guidelines for inspection and monitoring trials involving LMOs, checklists and record forms
- Guidelines for post-release monitoring and surveillance of LMOs. The Manual on Biosafety Risk Assessment and Risk Management for Cameroon can form the basis for these with additional information based on current best practice.
- Standard Operation Procedures (SOPs) to cover the range of inspection related functions across biosecurity sectors.

**B. Elaboration of thresholds:** Tolerance levels for Adventitious Presence and Low Level Presence for Cameroon need to be agreed on and elaborated through a legal instrument.

- C. **Clear elaboration of protection goals and acceptable levels of protection to enhance effectiveness of Risk Analysis:** Protection goals in all sectors and the desired levels of protection must be clearly elaborated to assist with Risk Analysis.
- D. **Integration and/or coordination of biosecurity and enhancing collaboration with the Customs Directorate:** This could be done through establishment of a single entity to coordinate biosecurity issues as suggested in (MINEPDED, 2015<sup>2</sup>) and a single, comprehensive Biosecurity Act. An example of this approach is New Zealand's Biosecurity System.