



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

ON PEST RISK ANALYSIS (INCLUDING LMO RISK ANALYSIS) - DEFINITIONS, USAGE & MANAGEMENT APPROACHES FOR CAMEROON

This Training Manual has been produced with the support of UNEP/ GEF and the Government of Cameroon via the Ministry of Environment, Protection of Nature and Sustainable Development

Under the Supervision of:

Project Component Three Taskforce (MINESUP)

&

The Biosecurity Project Coordination Unit (MINEPDED)



January 2018

TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
LIST OF FIGURES.....	iii
LIST OF TABLES.....	iv
ACRONYMS AND ABBREVIATIONS	v
PREFERRED WAY TO CITE THIS PUBLICATION.....	vi
CONTACT OF THOSE WHO PARTICIPATED.....	vii
ACKNOWLEDGEMENTS	ix
DISCLAIMER	x
EXECUTIVE SUMMARY.....	xi
INTRODUCTION	1
RATIONALE FOR THE MANUAL.....	1
OBJECTIVES OF THE TRAINING MANUAL	2
EXPECTED LEARNING OUTCOMES:	2
COURSE STRUCTURE	2
MODE OF DELIVERY	3
RESOURCE REQUIREMENTS.....	4
PRE-TRAINING EVALUATION	4
POST TRAINING ASSESSMENT	5
THE LAYOUT OF THE TRAINING MANUAL	5
OBJECTIVES AND CONTEXT OF THE MANUAL.....	5
KEY DEFINITIONS.....	6
MODULE 1: INTRODUCTION TO PRA, LMO AND IAS AND NATIONAL AND INTERNATIONAL....	11
1.1. REQUIREMENTS.....	12
1.2. PRINCIPLES OF PRA.....	12
1.2.1. Pest Risk Analysis	12
1.3. LEGAL CONTEXT	13
1.4. BIOSECURITY:	15
1.5. INVASIVE ALIEN SPECIES	15
1.6. THE GLOBAL BIODIVERSITY STRATEGY AND ACTION PLAN.....	16
1.7. NATIONAL MECHANISM FOR REGULATION OF BIOLOGICAL ORGANISMS.....	17
1.8. RECOMMENDED READING:.....	1
MODULE 2: OVERVIEW OF THE PRA.....	3
2.1. RISK ANALYSIS.....	4

2.2.	PRA AND ITS RATIONALE.....	5
2.3.	STEPS IN PRA.....	6
2.3.1.	PRA Initiation.....	6
2.3.2.	Pest Risk Assessment.....	7
2.3.3.	Pest Risk Management.....	7
2.4.	TEMPORAL, INSTITUTIONAL AND GEOGRAPHIC SCOPE OF PRA.....	8
2.5.	RESPONSIBILITY FOR PEST RISK ANALYSIS.....	8
2.6.	RECOMMENDED READING.....	10
MODULE 3:	INITIATION.....	11
3.1.	PREMISES FOR INITIATING A PRA.....	12
3.1.1.	Pest Initiated PRA.....	12
3.1.2.	Pathway Initiated PRA.....	13
3.1.3.	Policy Initiated PRA.....	13
3.2.	RECOMMENDED READING.....	15
MODULE 4:	PEST RISK ASSESSMENT.....	17
4.1.	4A PEST CATEGORISATION.....	18
4.2.	4B: RISK AND PROBABILITY OF ENTRY.....	22
4.3.	4C: RISK AND PROBABILITY OF ESTABLISHMENT AND SPREAD.....	26
4.3.1.	Probability of spread after establishment.....	29
4.4.	4D: POTENTIAL ECONOMIC CONSEQUENCES.....	35
4.5.	4E: OVERALL ASSESSMENT OF RISK AND UNCERTAINTY.....	42
4.6.	RECOMMENDED READING.....	45
MODULE 5:	PEST RISK MANAGEMENT.....	47
5.1.	MONITORING AND REVIEW OF PHYTOSANITARY MEASURES.....	52
5.2.	RECOMMENDED READING.....	54
MODULE 6:	PEST RISK COMMUNICATION.....	56
6.1.	DOCUMENTATION.....	58
6.2.	RECOMMENDED READING.....	60
ANNEXES.....		61
	Annex 1: Phytosanitary Control Posts in Cameroon by Region.....	61
	Annex 2: Pre-Training Evaluation (a template).....	64
	Annex 3: Draft Programme for Training of Trainers Workshop.....	66
	Annex 4: Post Training Assessment.....	69

LIST OF FIGURES

Figure 1 Likelihood of adverse effect or risk	5
Figure 2 Illustration of how direct pests where the harm is inflicted on the plant causing damage or disease	5
Figure 3: Global spread of the banana weevil	20
Figure 4 WTO data http://people.hofstra.edu/geotrans/eng/ch5en/conc5en/worldexports.html	25
Figure 5 Internet media article on Bird flu outbreak in Cameroon.....	29
Figure 6: Costs associated with management of Thrips palmi in a Chrysanthemum glasshouse.....	41

LIST OF TABLES

Table 1: International Obligations and National Implementations for PRA in Cameroon	1
Table 2: Proposed layout for reporting on categorisation of pest warranting a PRA.....	21
Table 3: Pest categorisation data for two known pests.....	21
Table 4: Risk management options for import of tomatoes.....	54

ACRONYMS AND ABBREVIATIONS

CABI	Centre for Agriculture and Bioscience International
CBD	Convention on Biological Diversity
CBP	Cameroon Biosecurity Project
CPM	Commission on Phytosanitary Measures
GEF	Global Environment Facility
GMOs	Genetically Modified Organisms
IAS	Invasive Alien Species
IMPM	Institut de Recherches Médicales et d'Etudes des Plantes Médicinales
IPPC	International Plant Protection Convention
IRAD	Institute of Agricultural Research for Development
ISPM	International Standards for Phytosanitary Measures
LANAVET	Laboratoire National Vétérinaire (National Veterinary Laboratory)
LMOs	Living Modified Organisms
MINADER	Ministry of Agriculture and Rural Development
MINCOMMERCE	Ministry of Commerce
MINEPDED	Ministry of Environment, Protection of Nature and Sustainable Development
MINEPIA	Ministry of Livestock, Fisheries and Animal Industries
MINFOF	Ministry of Forests and Wildlife
MINRESI	Ministry of Scientific Research and Innovation
MINSANTE	Ministry of Public Health
MINESUP	Ministry of Higher Education
MINT	Ministry of Transport
NBSAP	National Biodiversity Strategy and Action Plan
PRA	Pest Risk Analysis
UNEP	United Nations Environment Programme
WTO	World Trade Organization

PREFERRED WAY TO CITE THIS PUBLICATION

MINEPDED (2017). Training Manual for Pest / LMO Risk Analysis. Training Manual submitted to MINEPDED under the UNEP/GEF Cameroon Biosecurity Project: Development and Institution of a National Monitoring and Control System (Framework) for Living Modified Organisms (LMOs) and Invasive Alien Species (IAS). Yaoundé, Cameroon.

CONTACT OF THOSE WHO PARTICIPATED

The individuals participated in the development of the Training Manual on Pest/ LMO Risk Analysis:

Consultants

Dr Flora Ismail Tibazarwa

University of Dar es Salaam

+255 754 572 567

Email: ismaifar8@gmail.com

Dr Jacob Ngeve

(237) 677 765 848

(237) 696 313 615

Email jmngeve2003@yahoo.com

Project Coordination Unit

Mr Rigobert Ntep

Cameroon Biosecurity Project Coordinator
Ministry of Environment, Protection of Nature
and Sustainable Development

Acropole, Yaoundé, Cameroon

Tel: +237 677 30 39 32

Email: rntep@yahoo.fr

Mr Declan Chongwa Ambe

Cameroon Biosecurity Project Assistant
Ministry of Environment, Protection of
Nature and Sustainable Development

Acropole, Yaoundé, Cameroon

Tel: +237 677 02 22 85 / 696 86 66 19

Email: declanambe@yahoo.co.uk

Mr Clouvis Johnbang

Cameroon Biosecurity Project Financial
Assistant

Ministry of Environment, Protection of Nature
and Sustainable Development

Acropole, Cameroon

Tel: +237 675 95 92 97 / 698 09 94 77

Email: clouvisjohnbang@yahoo.com

Project Technical Advisers

Dr John Mauremootoo

Supporting Project & Programme Planning,
Monitoring and Evaluation

Phone/Fax: +44 (0)1934 876565

Email: John@InspirationalPathways.com

Skype: johnmaure

Website: www.inspiralpathways.com

Dr. David MBAH

Executive Secretary,
Cameroon Academy of Sciences
Yaounde,

Tel: 237 677 839 141

Email: dambah@yahoo.co.uk

 **Members of the Component 3 Taskforce**

Dr. Annie WAKATA

Head Component 3

MINESUP

Tel: +237 6 74 60 03 31

Email: annie_beya@yahoo.fr

Mr. Valentin Wagnoun

Component 3 Co-Lead

MINEPDED

Tel: +237 677 86 69 58

Email: valiwa1@yahoo.fr

Dr. Vitalis R.M. Chepnda

Component 2 Task Team Member

Permanent Secretary

National Programme for the Prevention and
Fight against Zoonoses

MINEPIA

Yaoundé, Cameroon

Tel: +237 699003722/ Cell: +237 679688500

Email: drchepnda@yahoo.co.uk

Dr. Roger Noël Iroume

Component 3 Task Team Member

Inspector General

MINRESI

Yaoundé, Cameroon

Tel: +237 677335433

Email: iroumerog@hotmail.fr

Mr. Alain Hervey Njike Tchoukwam

Component 3 Task Team Member

MINESUP

Tel: 237655258484

Email: ahnjike1@yahoo.fr

ACKNOWLEDGEMENTS

This activity was conducted as part of UNEP/GEF Project number: GFL/3651 titled “Development and Institution of a National Monitoring and Control System (Framework) For Living Modified Organisms (LMOs) and Invasive Alien Species (IAS)”, known as the Cameroon Biosecurity Project. The Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED) is the Project National Executing Agency, for which this Training of Trainers report has been prepared.

Also acknowledged, is the funding support of the Global Environment Facility (GEF), the technical and supervisory support of the Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED) and the United Nations Environment Programme UNEP.

The successful completion of this assignment was attained, thanks the overall supervision of the Minister of Environment, Protection of Nature and Sustainable Development- H.E. Mr Helle Pierre and the effective coordination of the activity by the Project Coordination Unit (Mr Rigobert Ntep-Coordinator, Mr Declan Chongwa Ambe- Project Technical Assistant & Mr Clouvis Johnbang- Project Financial Assistant); Project Technical Advisers (Dr John Mauremootoo and Dr David Mbah); Component 3 Task Force members (Prof. Barthelemy Nyasse, Mr Valentin Wagnoun, Dr Vitalis R.M. Chepnda, Dr Roger Noël Iroume, Mrs Annie Sylvie Wakata and Mr Alain Hervey Njike Tchoukwam)

The conduct of this assignment benefitted considerable assistance from a diverse group of stakeholders at a consultative workshop held in MINEPDED, Yaoundé, Cameroon in March 2017. The detailed list of the consulted stakeholders drawn from government ministerial departments and agencies, academic institutions and the private sector in Cameroon is appended to this manual. Each contribution of these stakeholders contributed significantly and this is highly appreciated and hereby, acknowledged.

DISCLAIMER

The information contained in this publication was, to the best of the authors' knowledge, correct at the time of publication. Images used have not been independently verified so there is the possibility of error. The opinions expressed in this publication do not necessarily reflect those of UNEP, MINEPDED or the organisations represented in the Component 3 Task Team. UNEP, MINEPDED or the organisations represented in the Component 3 Task Team are not responsible for the information provided in this document. These organisations do not make any warranty of any kind, expressed or implied, including, but not limited to, warranties of accuracy, reliability, completeness, or content of such information in this document.

Under no circumstances shall UNEP, MINEPDED or the organisations represented in the Component 3 Task Team be responsible for any loss, damage or liability or expense incurred or suffered which is claimed to have resulted from the use of or reliance upon the information contained in this document, including, but not limited to, any fault error, mistake, omission or defect. Under no circumstances shall these organisations be liable for any direct, indirect, incidental, special, punitive or consequential damages.

EXECUTIVE SUMMARY

The Government of Cameroon, Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED), is the executing agency for the Cameroon Biosecurity Project (CBP) entitled: '*Development and institution of a National Monitoring and Control System for Living Modified Organisms (LMOs) and Invasive Alien Species (IAS)*'. One of the activities under the CBP is to develop a training manual and conduct a training of trainers on Pest Risk Analysis.

The International Plant Protection Convention (IPPC) advocates pest risk analysis as the process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the phytosanitary measures to be taken against it.

Through trade pathways, introduced pests and diseases (mainly quarantine plant pests and animal diseases) can have major implications for farmers and countries that either produce for export or plan to export. Cameroon has an obligation to protect its local agriculture by ensuring total exclusion of importation of products from areas affected by pests and disease or by making importation conditional to a series of precautionary measures.

MINEPDED through the CBP is building capacity for Pest Risk Analysis that is to enhance delivery of those responsible at the operational level in Cameroon by developing a training material in the form of a manual to guide training in Pest Risk Analysis for Cameroon