CAMEROON BIOSECURITY PROJECT

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

Decision-making Process to address Established Biological invasions in Cameroon

This report 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:

The Biosecurity Project Coordination Unit (MINEPDED)

&

The Project Component Two Taskforce (MINADER)

December 2014

TABLE OF CONTENTS

Acronyms and Abbreviations

Acronym or Abbreviation	Name in full
ASFV	African Swine Fever Virus
CDC	Cameroon Development Corporation
CBP	Cameroon Biosecurity Project
FAO	Food and Agriculture Organisation
GISP	Global Invasive Species Programme
GOERT	Garry Oak Ecosystems Recovery Team
IAS	Invasive Alien Species
IRAD	Institute de Recherché Agricole pour le Développement (acronym in French)
IUCN	International Union for the Conservation of Nature
IPPC	International Plant Protection Council
ISPM	International Standard for Phytosanitary Measure
LMO	Living Modified Organism
MINADER	Ministry of Agriculture and Rural Development
MINEPAT	Ministry of Economy, Planning and Territorial Management
MINEPIA	Ministry of Livestock, Fisheries and Animal Industries
MINFOF	Ministry of Forests and Wildlife
MINEPDED	Ministry of Environment, Protection of Nature and Sustainable Development
MINRESI	Ministry of Scientific Research and Innovation
MINSANTE	Ministry of Public Health
MyFF	Myrianthus Fosi Foundation for Biodiversity Conservation and Environmental Protection
NPC	National Project Coordinator
PCU	Project Coordination Unit
SDO	Senior Divisional Officer
TNC	The Nature Conservancy
ToT	Training of Trainers
UNEP/GEF	United Nations Environment Programme / Global Environmental Facility
WTG	Watershed Task Group

List of figures

List of tables

List of photos

List of Annexes

Prefered way to cite this publication

MINEPDED (2014). Decision-making Process to address Established Biological Invasions in Cameroon. Report 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 details of those who participated

Authors

Dr John Mauremootoo
Supporting Project & Programme Planning, Monitoring and Evaluation
Phone/Fax: +44 (0)1934 876565
Email: John@InspiralPathways.com
Skype: johnmaure
Website: www.inspiralpathways.com

Mrs Mary Fosi
President, Myrianthus Fosi Foundation for Biodiversity Protection and Environmental Protection (MyFF)
Cameroon
Phone +237 678791580
Email: Mary_fosi@yahoo.com

Members of the Project Coordination Unit

Mr Wouamane Mbele
Cameroon Biosecurity Project Coordinator
Ministry of Environment, Protection of Nature and Sustainable Development
Acropole, Yaoundé, Cameroon
Tel: +237 699 51 31 17
Email: wouamane@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: wouamane@yahoo.fr

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 Adviser

Dr David Mbah
Cameroon Biosecurity Project Technical Advisor
Cameroon Academy of Science
Yaoundé, Cameroon
Tel: +237 77 83 91 41
Email: dambah@yahoo.co.uk

Members of the Component 2 Taskforce

Mrs Christine Pedhom
Head Component 2 – Implement Sustainable Biosecurity Strategies – of the UNEP/GEF Cameroon Biosecurity Project and Chair of Task Team
Sub Director in charge of Seeds and Seedlings
MINADER
Tel: +237 699 88 79 95 / 222 22 16 35
Email: madiesse223@yahoo.fr

Mr Barthelemy Ndongo
Component 2 Task Team Member
MINEPDED
Tel: +237 677 56 40 96
Email: bandongo@yahoo.fr

Dr Vitalis R.M. Chepnda
Component 2 Task Team Member
National Coordinator Animal Genetic Resource Management Program
MINEPIA
Yaoundé, Cameroon
Tel:+237 699003722/ Cell:+237 679688500
Email: drchepnda@yahoo.co.uk

Dr Roger Noël Iroume
Head Component 2 – Information & Awareness – of the GEF/Government of Cameroon Biosecurity Project and Chair of Inspector General
MINRESI
Yaoundé, Cameroon
Tel: +237 677335433
Email: iroumerog@hotmail.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. This report has been prepared for MINEPDED.

We also acknowledge 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 authors are grateful for the considerable assistance given in the undertaking of this assignment by the following: Dr David Mbah (Project Technical Adviser), Awa Richard (Irad) , Dambo Simon Patrick (Minepded), Ehabe Eugene Ejolle (Irad Ekona Regional Research Centre), Fahag Berthe (Secretariat), Fantong Zealous (Dpmh), Fotsing Justin (Fao Yaounde), Ghogue Jean-Paul (National Herbarium), Mamia Patrick Guiebouri (Minepded), Manga, Gabriel Ambroise (IRAD Ekona, Njombe Multipurpose Station), Mekembom Yves Nathan (Limbe Botanic Garden), Moundjoa Christian (MINEPIA), Nanyonge Sabina (Mapania Women’s Farming Group), Ndikontar Alice (MINADER), Ngeke Ngando Peter (Wonya Lioto Farmers Association), Nkwescheu Armand (MINSANTE), Nwaga Dieudonné (University Yaoundé 1), Onana Jean Michel (National Herbarium), Sakwe George Mbotake (University of Buea), Zanga Ekodo Martine (Component Secretariat), Kengue Joseph (IRAD), Ardo IIbrahim, Carole Tchinda, Chief Ayakwurai Mose, David Epee, Dr Mohamadou, Elessa Armand Essoke Martin Fontar Stanislas B, Fuchi Thomas, Gah Dasi Walter, Koagne Hippolyque, Lukong Ivoline Wayenla, Lukong Majoda Fonyu, Maimo Valentine Yuwen Mayibah Maurice Mbinkar Richard, Milla A Felix, Mr Essombe Reuben, Napoleon Chi, Nguefack Gaetan, Quanfes Kadzen, Shang Lawrence, Sidik Barre Sonia Kenfack Suleimano Biumauru, Tume Humfrey Vernyuy, and Wirba Francis Kwala.

Disclaimer

The opinions expressed in this publication do not necessarily reflect those of UNEP or MINEPDED. UNEP or MINEPDED 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 or MINEPDED 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

Purpose (context and justification)

The Project Objective of the UNEP/GEF funded Cameroon Biosecurity Project (*Development and Institution of a National Monitoring and Control System (Framework) for Living Modified Organisms (LMOs) and Invasive Alien Species (IAS)*) being executed by MINEPDED is to Increase capacity to prevent and control the introduction, establishment and spread of Invasive Alien Species (IAS) and management of LMOs in Cameroon through the implementation of a risk-based decision making process.

Within this context of a risk-based biosecurity approach the project advocates using the 'invasive management hierarchy' when planning invasive species management. This concept states that prevention is better than early detection and rapid response, which is better than eradication, which is better than control and mitigation. However, in many cases a biological invader is already established so prevention is not an option. In most such cases eradication is not feasible either.

Currently management strategies for established biological invasions in Cameroon are rarely based on a systematic risk-based decision-making process. The work documented in this report seeks to address this weakness by facilitating a generic risk-based decision-making processes that can be used to derive management options for established biological invasions in Cameroon. This objective is to be achieved by the production of a decision-making tool to address established biological invasions.

Objectives

When faced with an established biological invasion, those managing the invaded system (whether this system is a lake, field or a human or animal body) must decide upon which course of action to take. The objective of Project Activity 2.3.7. (*Decision-making Process to Address Established Biological invasions in Cameroon*) is to produce a simple aide memoire and accompanying manual to facilitate this decision-making process. The users of this 'Decision-making Tool for Established Invaders' are those responsible for the management of risks posed to human, animal and plant life and health and associated risks to the environment, across all ecosystems (land, freshwater and marine), and all sectors, from the harmful effects of biological invasions (from indigenous, introduced and new organisms) regardless of species (e.g. insects,

diseases, weeds, pathogens, and invasive animals) or whether they are LMOs or non-LMOs (though it must be stated that there is so far no known example of an LMO that has become an invasive species).

It is essential that the tool is compatible with international best practice, applicable to the situation in Cameroon, simple to use, brief and useable in the field. A single laminated A4 sheet is ideal. However, it is not possible to summarise all the information required in so little space. Therefore the tool needs to be accompanied by a user manual. The production of the manual was also part of this activity.

Methodology

In conformity with the objective of producing a tool applicable to Cameroon, inputs were obtained from national experts. In addition the draft tool was examined by stakeholders on the ground who are affected by established invaders in order to understand how applicable the tool is to real situations in Cameroon.

The initial step was a search for information from books, scientific publications and relevant websites which could provide international best practice inputs into the decision-making tool for Cameroon and to see was to see if any similar decision-making tools had been produced elsewhere.

The literature search provided background information for a stakeholder brainstorming session with national experts on biological invasions on the factors that need to be considered when managing established invaders.

The expert feedback was used to produce the two-sided aid memoire (‘the Decision-making Tool’) and the accompanying user manual. The draft tool and manual were circulated to stakeholders in two locations: a) in Tadu close to Kumbo in the North-West Region of Cameroon where bracken fern or fougère aigle (*Pteridium aquilinum*) is considered to be a major invader of rangeland systems; and b) in and around Douala where water hyacinth or jacinthe d'eau (*Eichhornia crassipes*) is considered to be a major invader of freshwater ecosystems.

The tool and manual were redrafted to incorporate stakeholder feedback. Additional updates were made following feedback received from the Component 2 Task Team during their examination of the first draft consultancy report.

Results

No “off the shelf” tools could be found that conformed to the consultancy objectives. However, the consultants did find a great deal of valuable information which informed the process by which the tool was produced.

From the brainstorming exercise with national experts ten factors that need to be considered when managing established invaders were agreed upon.

The stakeholders consulted in Tadu and in and around Douala were very positive about the value of the decision-making tool for their planned management actions. There were no major recommended changes, so the tool and manual remained substantially the same as the draft version.

The consultants received valuable feedback from the Component 2 Task Team’s review of the draft tool and manual including:

- The need to make the tool more generic so that it is clear that it can be used for species in all taxa, for all sectors and for both LMOs and non-LMOs
- The need to clarify how the information obtained can be transcribed.
- The need to clarify how the information obtained can be translated into concrete action.

The feedback was incorporated into a finalised list of the following eleven factors to be considered when planning the management of an established invader:

1. Management objectives for the desired entity affected by an invasion – field, watershed, park, person or animal, etc.
2. Quality/health of the entity Independent of the Biological Invasion
3. Negative impacts of the biological invasion on management objectives
4. Identification of the biological invader to species level or below
5. Legal and institutional issues that need to be considered when managing the biological invasion
6. Stakeholders and stakes/interests;
7. Management techniques, capacity and resources
8. Threats and risks of management actions (non-target or side-effects)
9. Monitoring, evaluation, learning and planning.
10. Other issues not accounted for above that need to be addressed
11. Next Actions: further actions required to build upon the information gathered.

In the Tool each factor is followed by a series of questions as shown in the except below

1. Management Objectives for the desired entity affected by an invasion – field, watershed, park, person or animal, etc.

a. Do users/managers have clear management objectives?	yes		No		Don't know	

- If *yes* then list the management objectives for the site? e.g. crop yield, fish catch, biodiversity conservation, quality of life, etc.
- If *no* then management objectives need to be clarified

1.b. Changes in Management Objectives:

Could management objectives change in a way that may affect the negative impact of a biological invasion in the foreseeable future?	yes		No		Don't know	

- If *yes* then consider how these changes may affect biological invasions management activities
- If *no* then this issue can be ignored

Figure ES-1: Excerpt from the Decision-making Tool demonstrating its structure

Every factor listed does not have to be addressed for all biological invasions but thinking about the factors and the questions asked can help to ensure that a comprehensive range of issues are considered in the planning and decision-making process. Equally, there are likely to be a number of issues not considered in the tool that will need to be addressed in some instances, so the factors and questions outlined in the tool should not be taken to be exhaustive.

Many of the questions have three possible answers – 'yes', 'no', or 'don't know'. Follow-up questions/instructions are often given for the 'yes' or 'no' responses but not the 'don't knows'. The standard response to a 'don't know' answer is that more information is needed, *if the issue is considered to be important*.

The accompanying manual contains supporting information for managers to enable them to understand the rationale behind the factors considered, the questions asked, and the actions taken as a result of the responses given. In addition the manual contains sources of further information and a blank datasheet that can be used for transcription of information. This datasheet is a specimen only and should be adapted as needed for the biological invasion in question.

To clarify how the information obtained can be translated into concrete action, two preliminary case studies have been annexed to this report. Case Study 1: Bracken Fern in Tadu, and Case Study 2: Water hyacinth in the Douala area.

Recommendations/ Lessons learnt

Although the Decision-making Tool is designed to be simple it was not so easy for those in the field to focus on the details it contained during the meeting held to examine it although they were enthusiastic about its overall value. It is a practical tool and so its utility will be most

effectively assessed through its use in the field as part of the Action Learning Cycle of: action => reflection => learning => planning leading to further action.

It was also clear that a certain amount of training will be needed for managers to effectively use the tool. This training can be provided to pilot site managers under the CBP.

Next Steps in conformity with the CBP logframe

The following next steps will be taken to build on the outputs of this activity:

- Use of the Decision-making Tool in Activity 2.3.8. - *Pilot site, sectoral agencies and civil society management interventions using agreed decision making processes*. The tool can be used to help guide management actions in terms of the formulation, implementation and monitoring and evaluation of management plans.

- Incorporation of the Decision-making Tool and Manual into the *National Training Manual for invasive species control systems and procedures (systems approach utilising the most appropriate combination of methods e.g. manual, chemical, biological, cultural and other approaches to mitigation)* (Activity 3.1.11) and incorporate training in the use of the tool in appropriate national training activities[1].

- Adapt the Decision-making Tool and Manual into communications products under: *the development and implementation of the Biosecurity communications and awareness raising plan developed and implemented through existing agencies* (Activities 4.2.1. and 4.2.2.).

- Utilise the factors in the Decision-making Tool as a basis for the assessment of the efficiency and effectiveness of relevant project interventions (notably pilot site work) as part of the: *implementation of the Project Benefit Monitoring and Evaluation (PBME) System* (Activity 5.3.1.).

[1] At the time of writing national training in biological invasions under the CBP has already taken place and it was not clear if the training was going to be repeated under the project.