FAO BIOSECURITY TOOLKIT

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ABBREVIATIONS

ADI	Acceptable Daily Intake
ALARA	As Low as Reasonably Achievable
ALOP	Appropriate Levels of Protection
APFSWG	Animal Production Food Safety Working Group, OIE
BCH	Biosafety Clearing-House
BSE	Bovine Spongioform Encephalopathy
CAC	Codex Alimentarius Commission
CBD	Convention on Biological Diversity
CPM	Commission on Phytosanitary Measures
DALY	Disability Adjusted Life Years
EU	European Union
EVIRA	Finnish Food Safety Authority
FAO	Food and Agriculture Organization of the United Nations
FSO	Food Safety Objective
FMD	Foot and Mouth Disease
GAINS	Global Avian Influenza Network for Surveillance
GAP	Good Agricultural Practice
GEF	Global Environment Facility
GHP	Good Hygienic Practice
GLEWS	Global Early Warning and Response System for Animal Diseases
GM	Genetically Modified
GMO	Genetically Modified Organism
GOARN	Global Outreach Alert and Response Network
HACCP	Hazard Analysis and Critical Control Point
IICA	Inter-American Institute for Cooperation on Agriculture
IHR	International Health Regulations
INFOSAN	International Food Safety Authorities Network
INGO	International Non-Governmental Organization
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IPFSAPH	International Portal on Food Safety, Animal and Plant Health
ISNAR	International Service for National Agricultural Research
ISPM	International Standard for Phytosanitary Measures
JECFA	Joint FAO/WHO Expert Committee on Food additives
JEMRA	Joint Expert Meeting on Microbiological Risk Assessment
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
LMO	Living Modified Organism
MDG	Millennium Development Goals
MRL	Maximum Residue Limit
NGO	Non-Governmental Organization
NPPO	National Plant Protection Organization
NOAEL	No Observed Adverse Effect Level
NOEL	No Observed Effects Level
OECD	Organization for Economic Cooperation and Development
OIE	World Organisation for Animal Health
PO	Performance Objective
PRA	Pest Risk Analysis
PCE	Phytosanitary Capacity Evaluation Tool
QA	Quality Assurance
RIA	Regulatory Impact Analysis
RMF	Risk Management Framework
RPPO	Regional Plant Protection Organization
SPS	Sanitary and Phytosanitary Measures
SARS	Severe Acute Respiratory Syndrome
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice to the Convention on Biological Diversity
STDF	Standards and Trade Development Facility
SWOT	Strengths, weaknesses, opportunities and threats
TBT	Technical Barriers to Trade
UNDP	United Nations Development Programme
UNEP	United National Environment Programme
WHO	World Health Organization
WTO	World Trade Organization

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FOREWORD

Biosecurity is a strategic and integrated approach to analysing and managing relevant risks to human, animal and plant life[1] and health and associated risks to the environment. Interest in biosecurity has risen considerably over the last decade in parallel with increasing trade in food, plant and animal products, more international travel, new outbreaks of transboundary disease affecting animals, plants and people, heightened awareness of biological diversity and greater attention to the environment and the impact of agriculture on environmental sustainability. Growing membership of the World Trade Organization (WTO) and the need to comply with global agreements governing the trade in agricultural and food products – particularly the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and, to some extent, the Agreement on Technical Barriers to Trade (TBT Agreement) – have heightened the focus on biosecurity. At the same time, changes in the way food, plants and animals are produced, processed and distributed, and the use of new technologies, have introduced new concerns about the health of plants and animals, as well as food safety and agricultural and environmental sustainability. Improved coordination is being sought among national bodies responsible for setting and enforcing sanitary[2] and phytosanitary measures to better protect human, animal and plant life and health without creating unnecessary technical barriers to trade.

During the past decade, some governments have moved towards an integrated approach to biosecurity that harmonizes and rationalizes policy, legislation and core roles and responsibilities as a means to better manage relevant risks in food and agriculture. However, most countries continue to manage biosecurity along traditional, sector-oriented lines, resulting in a lack of strategic focus, inefficient use of scarce resources and less than optimal results.

The Technical Consultation on Biological Risk Management in Food and Agriculture, organized by FAO in Bangkok, Thailand in January 2003, acknowledged the advantages of a more integrated approach to biosecurity to take advantage of synergies across sectors at the national and international levels, and recognized the efforts under way in some countries to adopt such an approach. It noted that several countries, including developing and transition countries, were revising their biosecurity arrangements and stressed the importance of external support in this context. It noted, in particular, the need for FAO to provide the necessary guidance and tools to assist developing countries in their efforts to move towards a more coherent and holistic approach to biosecurity.

This toolkit, which comprises three parts, has been developed by FAO in this context with support from the Government of Norway. The first document in the set, *Biosecurity Principles and Components*, is an introductory text providing a contemporary context for the development and implementation of a harmonized and integrated biosecurity approach across all sectors. The second part is a *Guide to Assess Biosecurity Capacity*, which offers a process for assessing dimensions of biosecurity capacity across all sectors and sector organizations. The third part of the toolkit, *An Overview and Framework Manual for Biosecurity Risk Analysis*, presents a generic framework to structure and guide the application of risk analysis principles in biosecurity.

1 For the purpose of this toolkit, "life" is used as a generic term to cover impacts of biosecurity activities that are not easily categorized as health impacts.

2 For the purpose of this toolkit, "sanitary" refers to humans and animals (zoosanitary).

Respectful of variations in conditions across countries, biosecurity sectors and sector organizations, the toolkit fully acknowledges that there is no universally acceptable or standard policy or infrastructure that should govern national biosecurity systems. It offers countries guidance to develop and implement national biosecurity systems in accordance with their international obligations and based on their particular needs. It seeks to increase knowledge on the broader development and implementation of biosecurity policies and frameworks at the national level. This includes enhancement of biosecurity capacity through the assessment of needs and the generic application of risk analysis principles as an essential element of biosecurity. Indeed, the toolkit develops the thesis that risk analysis provides a common foundation for biosecurity.

We welcome comments and feedback on this toolkit as part of our ongoing commitment to support member countries to better manage biosecurity as a means to protect public health, agricultural production and the environment, and promote economic development through enhanced compliance with international agreements focused on sanitary and phytosanitary measures.

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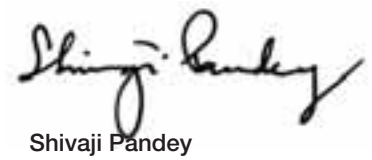

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INTRODUCTION

Biosecurity is emerging as one of the most pressing issues facing developed, developing and transition countries. Globalization, the increased movement of people, agricultural and food products across borders, greater attention to biodiversity and the environment, the emergence and spread of transboundary diseases, changes in the way food, plants and animals are produced, processed and distributed, uncertainties surrounding new technologies, as well as international legal obligations are some of the trends driving this growing interest, and highlighting the importance of adequate biosecurity capacity.

Biosecurity is a strategic and integrated approach to analysing and managing relevant risks to human, animal and plant life[3] and health, and associated risks to the environment. It is based on recognition of the critical linkages between sectors. Biosecurity hazards[4] of various types exist in each sector and have high potential to move between sectors. For that reason, inadequate controls in one sector can have far-reaching consequences for other sectors.

Harmonizing and integrating national biosecurity systems and controls whenever possible provides a means to take advantage of the synergies that exist across sectors. This will considerably enhance the capability of countries to protect human health, agricultural production systems, and the people and industries that depend on them. In addition, there are likely to be other benefits. A harmonized and integrated approach to biosecurity will help to safeguard the environment and protect against the uncertainties associated with new technologies. It will further enhance the capacity of countries to meet obligations under relevant international agreements and to take full advantage of opportunities associated with the global trade in food and other agricultural products.

PURPOSE AND SCOPE

This toolkit provides practical guidance and support to develop and implement national biosecurity frameworks at the country level. It presents the benefits of a harmonized and integrated approach to biosecurity and illustrates the experiences of countries, including Belize, Norway and New Zealand, which have adopted such an approach in recent times.

By providing a framework to identify cross-cutting biosecurity capacity needs based on an integrated approach, this toolkit addresses the gaps inherent in a purely sectoral approach to biosecurity. The purpose is to support governments to better manage biosecurity as a means to protect public health, agricultural production and the environment. At the same time, this will enhance the ability of countries to comply with international agreements, regulations and requirements focused on sanitary and phytosanitary measures, contributing to economic development and trade.

The toolkit comprises three separate but linked documents. All three documents are developed on the premise that biosecurity concerns different parts of

3 As indicated in footnote 1, above, “life” is used as a generic term to cover impacts of biosecurity activities that are not easily categorized as health impacts. These can be diverse and often remain unquantified. For instance, in servicing the Convention on Biological Diversity (CBD), the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA) has noted that current means to determine the “value” of biological diversity and its components are inadequate. In ecological risk assessment, stakeholder involvement is essential to identifying and prioritizing valued ecological attributes so that appropriate risk assessment can proceed.

4 The term “hazard” is used in this document in relation to all biosecurity sectors, however, the International Plant Protection Convention (IPPC) generally uses the term “pest” rather than the term “hazard”.

government, that biosecurity risks are interrelated, and that the best way to manage the risks faced is through coordinated action across the relevant sectors, contributing to improved outcomes and efficiencies.

Part 1: Biosecurity Principles and Components

The first part of the toolkit provides a broad introduction to biosecurity and outlines the contemporary context for development and implementation of a harmonized and integrated biosecurity approach across all sectors. It shows how such an approach can enhance the protection of human, animal and plant life and health and the environment by taking advantage of synergies across sectors, as well as generating a number of other tangible benefits.

Part 2: Guide to Assess Biosecurity Capacity

The second part of the toolkit provides guidance on how to assess dimensions of biosecurity capacity across all sectors and sector organizations in accordance with the requirements of an integrated biosecurity approach as presented in Part 1. Use of this guide will enable governments to increase awareness of the synergies and interdependencies that exist across biosecurity sectors. It will further help to generate an understanding of existing biosecurity capacity and performance, a medium-term vision for national biosecurity, and a strategy and action plan to enhance biosecurity capacity based on an identification of capacity needs.

Part 3: An Overview and Framework Manual for Biosecurity Risk Analysis

The third part of the toolkit presents a generic framework to structure and guide the application of risk analysis principles in biosecurity. Risk analysis is at the heart of modern approaches and is rapidly emerging as a unifying discipline across all biosecurity sectors. International standard-setting organizations and bodies have embraced risk assessment as an essential tool to achieve their goals and national competent authorities are obliged by international agreements to similarly utilize risk assessment wherever possible and practical. Part 3 of the toolkit explores the processes and methods common to cross-sectoral risk analysis and illustrates the role of this discipline in forging better linkages and promoting more efficient use of technical resources.

TARGET AUDIENCE

Government officials involved in biosecurity or a particular biosecurity sector are the main target audience. This group will include officials involved in food safety and public health, animal and plant life and health, and protection of the environment, at both the policy and/or operational level. In addition, development agencies, consultants and trainers supporting biosecurity activities and programmes will find the toolkit useful.