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IPPC Guide to Pest Risk Communication

A guide for national plant protection organizations on
communicating with stakeholders about pest risks



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Abstract

This guide was created under the auspices of the IPPC Secretariat as a component of the IPPC National Phytosanitary Capacity Building Strategy, which was adopted by the fifth session of the Commission on Phytosanitary Measures (CPM) (2010) of the IPPC. The purpose of the guide is to support NPPOs in identifying and engaging with stakeholders, and in developing pest risk communication strategies to enhance phytosanitary decision making and plant health policy development. The guide first explains what is pest risk communication and why it is important, the key goals and concepts of pest risk communication, and the factors that may influence its success. It then describes the principles of good pest risk communication. The guide also provides a deeper understanding of the factors that should be considered when selecting the appropriate approaches to use and the practices to adopt when communicating about pest risks. In so doing it aims to overcome the challenges and maximize the impact of risk communication. It concludes by providing practical guidance on how to use plant health risk communication effectively.



Plant nursery, Italy

© A. MacLeod (Department for Environment Food and Rural Affairs, United Kingdom of Great Britain and Northern Ireland)

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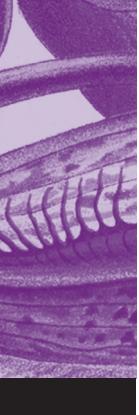
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The development of the guide was possible thanks to the financial contribution of the European Commission's project for supporting the implementation of the International Plant Protection Convention (IPPC) (GLO/GCP/725/EC).



Acronyms

CPM	Commission on Phytosanitary Measures (of the IPPC)
EFSA	European Food Safety Authority
EPPO	European and Mediterranean Plant Protection Organization
FAO	Food and Agriculture Organization of the United Nations
ICPM	Interim Commission on Phytosanitary Measures (of the IPPC)
IICA	Inter-American Institution for Cooperation on Agriculture
IPPC	International Plant Protection Convention
ISPM	International Standard for Phytosanitary Measures
NGO	Non-governmental organization
NRO	National reporting obligations
NPPO	National plant protection organization
PRA	Pest risk analysis
RPPO	Regional plant protection organization
WTO	World Trade Organization

Definitions

Commodity: A type of plant, plant product, or other article being moved for trade or other purpose [FAO, 1990; revised ICPM, 2001]

Containment: Application of phytosanitary measures in and around an infested area to prevent spread of a pest [FAO, 1995]

Control (of a pest): Suppression, containment or eradication of a pest population [FAO, 1995]

Entry (of a pest): Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled [ISPM 2, 1995]

Eradication: Application of phytosanitary measures to eliminate a pest from an area [FAO, 1990; revised FAO, 1995; formerly "eradicate"]

Establishment: Perpetuation, for the foreseeable future, of a pest within an area after entry [FAO, 1990; revised ISPM 2, 1995; IPPC, 1997; formerly "established"]

Import Permit: Official document authorizing importation of a commodity in accordance with specified phytosanitary import requirements [FAO, 1990; revised FAO, 1995; ICPM, 2005]

Incursion: An isolated population of a pest recently detected in an area, not known to be established, but expected to survive for the immediate future [ICPM, 2003]

Inspection: Official visual examination of plants, plant products or other regulated articles to determine if pests are present or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly "inspect"]

Inspector: Person authorized by a national plant protection organization to discharge its functions [FAO, 1990]

Interception (of a pest): The detection of a pest during inspection or testing of an imported consignment [FAO, 1990; revised CEPM, 1996]

International Plant Protection Convention: International Plant Protection Convention, as deposited with FAO in Rome in 1951 and as subsequently amended [FAO, 1990]

International Standard for Phytosanitary Measures: An international standard adopted by the Conference of FAO, the Interim Commission on Phytosanitary Measures or the Commission on phytosanitary measures, established under the IPPC [CEPM, 1996; revised CEPM, 1999]

International standards: International standards established in accordance with Article X paragraph 1 and 2 of the IPPC [IPPC, 1997]

Introduction (of a pest): The entry of a pest resulting in its establishment [FAO, 1990; revised ISPM 2, 1995; IPPC, 1997]

*** Legislation:** Any act, law, regulation, guideline or other administrative order promulgated by a government [ISPM 3, 1996]

Living modified organism: Any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology [Cartagena Protocol on Biosafety to the Convention on Biological Diversity (CBD, 2000)]

Monitoring: An official ongoing process to verify phytosanitary situations [CEPM, 1996]

National plant protection organization: Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990; formerly "plant protection organization (national)"]

Non-quarantine pest: Pest that is not a quarantine pest for an area [FAO, 1995]

* **Occurrence:** The presence in an area of a pest officially recognized to be indigenous or introduced and not officially reported to have been eradicated [FAO, 1990; revised FAO, 1995; ISPM 17; formerly "occur"]

* **Organism:** Any biotic entity capable of reproduction or replication in its naturally occurring state [ISPM 3, 1996; revised ISPM 3, 2005]

Outbreak: A recently detected pest population, including an incursion, or a sudden significant increase of an established pest population in an area [FAO, 1995; revised ICPM, 2003]

Pathogen: Micro-organism causing disease [ISPM 3, 1995]

Pathway: Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO, 1995]

Pest: Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised ISPM 2, 1995; IPPC, 1997; CPM, 2012]

Pest risk communication: An interactive process allowing purposeful exchange of information between an NPPO and stakeholders regarding risks and risk-related factors associated with plant health.

Plant products: Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests [FAO, 1990; revised IPPC, 1997; formerly "plant product"]

Plants for planting: Plants intended to remain planted, to be planted or replanted [FAO, 1990]

Quarantine: Official confinement of regulated articles, pests or beneficial organisms for inspection, testing, treatment, observation or research [FAO, 1990; revised FAO, 1995; CEPM, 1999; CPM, 2018]

Quarantine pest: A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC 1997]

Regional plant protection organization: An inter-governmental organization with the functions laid down by Article IX of the IPPC [FAO, 1990; revised FAO, 1995; CEPM, 1999; formerly "plant protection organization (regional)"]

Regulated non-quarantine pest: A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party [IPPC, 1997]

Regulated pest: A quarantine pest or a regulated non-quarantine pest [IPPC, 1997]

Spread (of a pest): Expansion of the geographical distribution of a pest within an area [ISPM 2, 1995]

* **Stakeholder:** A person, group or organization that has an interest in, or is affected by, the phytosanitary activities of an NPPO [adapted from Managing relationships with stakeholders (FAO, 2015)]

Standard: Document established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context [FAO, 1995; ISO/IEC GUIDE 2:1991 definition]

Surveillance: An official process which collects and records data on pest presence or absence by survey, monitoring or other procedures [CEPM, 1996; revised CPM, 2015]

Survey: An official procedure conducted over a defined period of time to determine the characteristics of a pest population or to determine which species are present in an area [FAO, 1990; revised CEPM, 1996; revised CPM, 2015]

Transparency: The principle of making available, at the international level, phytosanitary measures and their rationale [FAO, 1995; revised CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures]

Treatment: Official procedure for the killing, inactivation or removal of pests, or for rendering pests infertile or for devitalization [FAO, 1990, revised FAO, 1995; ISPM 15, 2002; ISPM 18, 2003; ICPM, 2005]

* **Uncertainty (within risk assessment):** Refers to all types of limitations in the knowledge available to assessors at the time an assessment is conducted and within the time and resources available for the assessment (EFSA, 2018b).

***Note:** Other than the definitions of pest risk communication, stakeholder and uncertainty, the definitions are sourced from the IPPC Glossary of phytosanitary terms (ISPM 5). This list includes only the Glossary terms that are used in this guide. The Glossary is updated annually based on decisions taken by the IPPC Commission on Phytosanitary Measures. The complete and updated glossary is maintained at: <http://www.ippc.int/publications/glossary-phytosanitary-terms>. The definitions are accurate as of January 2019, with the exception of the definitions of legislation, occurrence and organism, which are no longer in the Glossary but were in earlier versions of it.

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Introduction and purpose

BACKGROUND

The International Plant Protection Convention (IPPC) aims to secure coordinated, effective action to prevent and to control the introduction and spread of pests of plants and plant products. This is achieved through the development and implementation of phytosanitary policies and activities. At a country scale, such activities are the responsibility of the national plant protection organization (NPPO), which is the official service established by a government to discharge the functions specified by the IPPC. While an NPPO has responsibility for phytosanitary actions, it cannot operate in isolation and relies on engagement with other government bodies, the private sector and civil society to protect plant health.

For the purposes of this guide, an organization, group or person that has an interest in, or is affected by, the phytosanitary procedures of an NPPO is regarded as a stakeholder. Through exchange of information, stakeholders can contribute significantly to NPPO decision making and the development of regulations. The process of pest risk analysis (PRA) is fundamental in the preparation of many phytosanitary regulations by NPPOs and so engagement with stakeholders during the process of PRA is essential. The IPPC recognizes that pest risk communication is an interactive process allowing exchange of information between the NPPO and stakeholders to inform each other about a pest risk.

While the IPPC does not address engagement and the interactions between NPPOs and stakeholders specifically, a Capacity Development Technical Resource Manual providing advice on the establishment and maintenance of successful stakeholder relations (FAO, 2015) complements this guide.

PURPOSE

The purpose of this guide is to support NPPOs in identifying and engaging with stakeholders, and in developing pest risk communication strategies to enhance phytosanitary decision making and plant health policy development. Risk communication can benefit stakeholders by providing opportunities for

engagement and the sharing of information about risks, allowing both stakeholders and NPPOs to take informed decisions regarding how to act and deal with risks.

It is recognized that every country and NPPO has different legal and institutional requirements regarding regulatory communications. NPPOs can draw on this guide using what they find appropriate and relevant for their needs regarding stakeholders' engagement and pest risk communication. Communication efforts can therefore be tailored to each country's situation.

GUIDE STRUCTURE

The guide first explains why it is important, for the benefit of plant health, to communicate with stakeholders about the risk of plant pests. It then identifies the principles that underlie good pest risk communication approaches. The key factors to consider before communicating about pest risks are considered next, before ending with advice and examples of how to engage stakeholders and apply pest risk communication in practice.

Each chapter of this guide begins with a series of bullet points summarizing the main content and key features within that chapter. Boxes are used to emphasize key messages and highlight examples from around the world. Definitions of terms as per the International Standard for Phytosanitary Measures (ISPM) Glossary of phytosanitary terms (ISPM 5) are also provided at the beginning of this guide.

This guide has no legal status under the IPPC; neither is its intention to harmonize NPPO practices. Its main objective is to provide guidance on the communication of information about pest risk to support phytosanitary decision making for the benefit of plant health.

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Aproceros leucopoda larva feeding on Ulmus

Chapter 1.

What is pest risk communication, and why is it important?

CHAPTER SUMMARY

- ◆ Pest risk communication is an interactive process allowing the exchange of information and opinions between an NPPO and stakeholders about the risks and risk-related factors associated with plant health.
- ◆ Pest risk communication is an important component of the IPPC objective to protect the world's plant resources from pests.
- ◆ The goals of pest risk communication are to (1) facilitate dialogue and understanding between and among stakeholders, which could include the general public, (2) enable stakeholders to protect plant resources from pest risks by providing information that can inform risk management decisions, and (3) enhance the overall effectiveness of the PRA process.

Pest risk communication

An interactive process allowing purposeful exchange of information between an NPPO and stakeholders regarding threats to plant health. It is not simply the act of an NPPO disseminating information in one direction so that stakeholders understand the risk situation. Pest risk communication seeks to reconcile the views of all interested parties in order to achieve a common understanding of the pest risks, develop credible pest risk management options and consistent regulations, and promote awareness of phytosanitary issues.

- ◆ Pest risk communication may involve communication of information about both risks and benefits.
- ◆ It is important to understand and address stakeholder perceptions of risk in order to develop effective risk communication messages. How stakeholders perceive risks serves as the basis of their attitudes, intentions and behaviours.
- ◆ The urgency and speed of pest risk communica-

tion can vary according to circumstances. For example, a pest incursion may require rapid communication, while ongoing plant health problems, such as weed seeds found repeatedly in cargo shipments, require communication with stakeholders over a longer period.

PURPOSE OF THIS CHAPTER

The main purpose of this chapter is to introduce the key goals and concepts of pest risk communication, and the factors that may influence its success. Guidance is provided on the application of risk communication in plant health, stakeholder dialogue and engagement, and the importance of considering risk perception for effective risk communication. The main challenges of effective risk communication are identified, as well as the advantages and benefits of developing effective and inclusive risk communication strategies. This chapter also sets the stage for subsequent chapters, in which many of the concepts and factors are described in more detail.

Stakeholder (for plant health purposes)

A person, group or organization that has an interest in, or is affected by, the phytosanitary activities of an NPPO.

1.1 WHAT IS PEST RISK COMMUNICATION?

Pest risk communication is generally recognized as an interactive process allowing exchange of information between an NPPO and stakeholders. It is not a one-way transfer of information or about making stakeholders understand the risk situation. Instead the goal of pest risk communication is to take account of the potentially different views of stakeholders such as plant producers, trading partners, scientists, plant

health officials and politicians to achieve a mutual understanding of the implications of a PRA in order to:

- ◆ achieve a common understanding of the pest risks
- ◆ develop credible pest risk management options
- ◆ develop credible and consistent phytosanitary measures (legislation, regulations or procedures) to deal with pest risks
- ◆ promote awareness of the plant health issues under consideration.

There are three components to pest risk communication:

- ◆ Pest risk. This is the level of risk as expressed in a PRA. It is focused on the likelihood and consequences of pest introduction and is based on scientific and economic evidence. It includes a consideration of uncertainty. In emergency situations, an abbreviated form of risk analysis may be necessary to inform communication efforts until a more comprehensive analysis can be conducted.
- ◆ Perception. This is what stakeholders think or feel about the pest risk. The level to which stakeholders are concerned by a risk is not always related to the level of pest risk assessed in a PRA. The degree to which stakeholders are concerned is based on risk perception factors such as the degree to which the risks and benefits are fairly distributed and the degree of apprehension which the pest invokes.
- ◆ Action. This is both the actions that the NPPO is taking to manage the risks and the actions the stakeholders can take to manage the risk themselves. It includes ensuring the reasons behind the decisions are well understood and focuses risk communication on the information which is most likely to make a difference to the decisions and actions.

Risk communication is about reconciling different views surrounding the level of risk and appropriate risk management. NPPO staff members, scientists, politicians, local industries, importers and exporters may all hold different views on the risk situation and how to manage it. If these views are not harmonized, different stakeholders are likely to act according to their own views about the risk. This can lead to a range of problems such as nonconformity with standards or rules, a lack of cooperation in eradication

programmes and delays in developing new trade. For example, if a visitor to a country does not recognize that bringing fruit is a risk, they may not declare the fruit for inspection or disposal.

Communication features throughout each stage of PRA, for both quarantine pests and regulated non-quarantine pests, as outlined in ISPM 2 (Framework for pest risk analysis). The risk communication process facilitates both development of the PRA and understanding of its results, allowing for greater acceptance by stakeholders of risk management decisions.

Contracting parties to the IPPC use the PRA framework because of its requirements as the technical justification for phytosanitary measures under the World Trade Organization Sanitary and Phytosanitary Agreement (SPS Agreement). Pest risk analysis provides the foundation upon which much phytosanitary decision making is built. It is a structured process combining pest risk assessment, pest risk management and pest risk communication.

Pest risk analysis (PRA)

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 strength of any phytosanitary measures to be taken against it.

Pest risk communication supports the exchange of information and opinions on pest risks and related factors among stakeholders. Stakeholders can include governments, industry such as plant producers and plant importers, non-governmental organizations (NGOs), academia, media and others interested in the phytosanitary activities of an NPPO. All such groups and individuals may have reasons to be involved in phytosanitary activities and decision making, but not necessarily equally and not at the same time.

Risk communication can involve different numbers of individuals, from only a few, such as communication taking place between risk assessors or between a risk assessor and a risk manager, to many, such as a communication campaign aimed at a very large stakeholder group or involving very many stakeholder groups. It can be formal or informal and can be written, verbal or visual. It can include a variety of media and timeframes.

Effective risk communication allows for effective pest risk assessment and pest risk management and can significantly affect the success of the risk management activities.

1.2 WHY IS PEST RISK COMMUNICATION IMPORTANT?

Pest risk communication provides an opportunity for NPPOs to obtain new information that helps them to better understand the nature, severity or acceptability of risks to those affected or involved. Pest risk communication may help stakeholders make decisions about whether to import specific plant species or products, understand how to reduce the spread and socio-economic impact of pests, or understand why regulatory actions are being taken.

The benefits of effective pest risk communication include:

- ◆ ensuring that the issues and uncertainties in the PRA are understood by all stakeholders
- ◆ ensuring all relevant information is considered in the PRA
- ◆ giving all stakeholders an opportunity to inform the decision-making process
- ◆ promoting transparency
- ◆ increasing stakeholders' confidence in regulatory systems for plant health
- ◆ improving regulatory decisions.

1.3 THE OBJECTIVES OF PEST RISK COMMUNICATION

The overall objective of pest risk communication is to protect plant health through provision of information that enables risk management decision making to be better informed and the implementation of such decisions to be more effective. The broad objective can be achieved through five specific objectives (Box 1).

Box 1: Five specific objectives of risk communication

- ◆ Reaching mutual understanding
- ◆ Building trust
- ◆ Raising awareness
- ◆ Learning and education
- ◆ Motivating action

1.3.1 Reaching mutual understanding

Pest risk communication is used to enable mutual understanding and dialogue among all stakeholders about plant health issues. It should involve interaction between all those concerned with the phytosanitary process. It is important to engage in a dialogue with those exposed and vulnerable to the risk, those who may influence and control the risk, and other affected or interested stakeholders.

1.3.2 Building trust

To enable stakeholders to make informed plant health decisions, it is important that pest risk information is readily understood and perceived to be accurate and trustworthy, takes into account the needs and concerns of the stakeholder target audience, and helps them to decide how to proceed. Addressing stakeholders' concerns about the risk will help to build trust, as does the extent to which the PRA processes are believed to be transparent and open to scrutiny.

1.3.3 Raising awareness

Enabling stakeholders to make informed plant health decisions can, in some cases, involve raising awareness about both the risks and benefits associated with particular choices. For example, a communication campaign might include information on a pest plant and its impacts on the environment and plant health and provide a list of alternatives that can be planted instead. In order to enable stakeholders to make well-informed decisions about plant health, it is particularly important to target information about risks at those groups in the population who are most susceptible or vulnerable to them (e.g. plant growers, farmers, consumers), and to ensure that information about both risks and benefits is available to all stakeholders.

In certain situations, stakeholders must follow science-based plant health practices (e.g. obtain an import permit for the import of certain plant species) to protect plant health, and the decision to engage in these practices is not theirs to make (e.g. imported plants for planting must comply with plant health regulations). In these cases, communication about pest risks is part of raising general awareness and is often aimed at increasing stakeholders' understanding and acceptance of why they need to engage in these practices.

1.3.4 Learning and education

Dialogue with stakeholders offers the chance to learn and to obtain relevant information to better inform risk analysis decisions. For the development and delivery of effective pest risk communication, it is essential to understand the information needs of target audiences. This enables risk communication messages to be tailored to stakeholder target audiences, thereby maximizing their effectiveness and dissemination. Dialogue with stakeholders may also provide decision-makers with vital or additional relevant information for risk assessments or management, and increase the likelihood that decisions are fit for purpose and hence implemented appropriately. For example, stakeholders may provide information on the probable effectiveness of various management options in controlling or preventing pest risks. Stakeholders may also contribute to the identification of unintended consequences of risk management decisions. This mutual learning and understanding increases the chances of a successful communication campaign, resulting in suitable actions and improved plant health outcomes.

1.3.5 Motivating action

Risk communication can provide risk managers with insights into who has the ability to minimize the risk effectively and what motivations or incentives are needed for engagement in the successful implementation of risk management.

1.4 THE IMPORTANCE OF STAKEHOLDER ENGAGEMENT

Stakeholders are central to pest risk communication for the reasons given above (section 1.3), and for each of the specific objectives it is essential that all stakeholders are identified. When possible, all interested stakeholders should be involved in the pest risk communication process.

There are many potential benefits to including stakeholders in pest risk communication efforts. Dialogue with stakeholders helps communicators to:

- ◆ identify gaps in knowledge about the pest risks that are under consideration
- ◆ understand stakeholders' risk perceptions and concerns
- ◆ identify potential communication barriers and the preferred and most appropriate information sources and channels of communication
- ◆ identify and address any unintended consequences of the communication.

In addition, a collaborative process with stakeholders will, for example:

- ◆ generate more ideas
- ◆ identify concerns not otherwise recognized
- ◆ include different perspectives
- ◆ potentially create buy-in and build broad support for the communication effort
- ◆ facilitate the coordination of communication efforts among various government departments (e.g. health, agriculture, trade) and other stakeholders sharing responsibility for plant health at the national or other levels.

Box 2: Using risk communication to inform a pest risk analysis

Pest risk analysis (PRA) can sometimes be a complex process that requires many kinds of information from many sources; seeking expert opinion and engaging with stakeholders provide an opportunity to gather information from a wider variety of sources than is usually found in an NPPO. When seeking opinions from stakeholders to inform pest risk assessment or pest risk management, there will be a variety of points of view, depending on the values held by individual stakeholders and NPPOs. Values can vary between and within stakeholders. An NPPO should try to balance the multiple views and different values among stakeholders, especially those of cultural, economic, environmental and social importance. It is up to the NPPO to conduct its PRAs and formulate its decisions in accordance with the principles of the IPPC set in the national context. When explaining a pest risk to a stakeholder, it may be necessary to first explain the process of PRA. Without understanding the reason for engagement, stakeholders will be unable to help to their fullest ability.

When stakeholders understand what information is being sought, they need to be given an opportunity to contribute. An NPPO should listen to their advice, consider their information carefully and let them know that they have been listened to and that their information is of value; this seems a small point, but it is important. Wherever possible, the information collected from stakeholders should be included in the PRA and acknowledged appropriately. There may be occasions when stakeholders' views are sought and received but other views more strongly influence risk conclusions and decision making. In these cases, it is important not only to acknowledge all stakeholder input but to provide feedback and offer opportunities to contribute to other pest risk analyses in the future.

For all of these reasons, identifying stakeholders and engaging them in a dialogue to inform risk communication decisions increases the opportunity for successful pest risk communication and enhanced pest risk management.

1.5 WHY IS RISK PERCEPTION IMPORTANT?

Effective pest risk communication must take into account both risk perception and the risks identified in the risk assessment. Risk perception refers to stakeholder's evaluation or judgement about risks; it involves the influence of human values on risk and is subjective by nature. It is a complex and challenging aspect of risk communication. There are many influences on how people perceive and respond to risks, and effective risk communication depends on understanding more than risks and benefits.

A key issue to recognize regarding risk perception is that how people perceive risks serves as the basis of their attitudes, intentions and behaviours, regardless of any technical pest risk assessment. Risk perception is the core of how people make risk decisions. For example, disparity often exists between expert opinion and how risk is perceived by the general public. Experts may see risks in terms of likelihood and consequence, whereas the general public is often biased towards their subjective beliefs and values, and more apt to focus on emotional factors as well as the personal benefits or detriments related to accepting a risk; evidence and logical reasoning are disregarded indicating cognitive bias. As a result, it is critically important to identify and address people's perceptions as part of the risk communication process.

Pest risk communication should not only focus on the findings of technical pest risk assessments, but also address the factors that influence risk perception and acceptability. Voluntary, natural, familiar, and controllable risks are generally more accepted than those that are imposed, attributed to human-made causes, unfamiliar, or not within an individual's control. However, many pest risk communicators focus primarily on the biological and economic information related to the risk. To understand and gain insights into what various individual stakeholders, cultures or societies consider to be an acceptable risk, or an acceptable trade-off between risks and benefits, social science researchers may need to be consulted.

In addition, technical risk messages are sometimes associated with value judgements made by those developing them; for example, qualitative risk rankings made by experts may be used to prioritize risk management activities. The degree to which the communicators' values influence the message needs to be made transparent.

1.6 PEST RISK COMMUNICATION APPROACHES

The type of communication appropriate for each circumstance is determined by a combination of the level of concern, the urgency and the assessed pest risk.

Risk communication may be applied to all pest risks. However, different types of pest risk require different communication strategies and methods. The important implication is that risk communicators need to adapt their communication strategy to address the specifics of each pest risk. The case studies included throughout this manual provide useful insight and guidance. Chapter 3 expands on the risk communication approaches according to the assessed pest risk, the degree to which stakeholders are concerned and the urgency. Not all pest risk communication efforts are urgent or targeted at specific pests. For example, some communication might be long-term and ongoing and focus on stakeholders' roles in facilitating the introduction or spread of any pests, such as with travellers unintentionally introducing pests from one area to another. In these cases, messages can often be developed, refined and distributed over time or at specific high-risk periods (e.g. during peak planting or travel seasons).

Ongoing plant health issues that generate societal interest or concern also require sustained communication. For example, communication may address the potential risks and benefits of plant biotechnology or living modified organisms. When the level of risk is unknown and whether action needs to be taken is also unknown, the communicator may have the responsibility to engage with stakeholders to identify societal concerns and identify priorities for action, including the development of contingency plans, until more is known about the risk. Communication will need to be updated as new knowledge about the risk becomes available.

Box 3: Risk communication to international travellers (raising public awareness)

In 2013, the European and Mediterranean Plant Protection Organization (EPPO) published a poster entitled "Don't risk it!" together with an accompanying leaflet. The objective of these documents is to raise public awareness about the risks of moving plants and their associated pests during international travel and to encourage responsible behaviour. The poster has been translated by NPPOs into more than 20 languages, and is displayed in airports, seaports, border inspection points, railway stations, and travel agencies.

This poster was endorsed officially by the EPPO Executive Committee in April 2013 and circulated to all EPPO member countries in May 2013. NPPOs are strongly encouraged to continue contacting airport authorities or any other relevant bodies so that the poster can be displayed as widely as possible.

Luggage tags and key chains have also been prepared for use while travelling. A video (in Arabic, English and Italian) retaining some of the graphical elements of the poster was developed by the Plant Protection Service of the Lombardy region of Italy for Expo Milan in 2015.



Milan airport, Italy, displaying a "Don't risk it!" poster in Italian near departure gates in a position highly visible to travellers



Italian phytosanitary inspector at the Naples airport distributing the EPPO leaflet to travellers

© M. Ciampitti, B. Cavagna (ERSAF, Italy)

Box 4: Plants as pests – Invasive alien plant risk communication strategies in Saxony-Anhalt, Germany (education)

In Germany, since 2010, the Independent Institute for Environmental Issues (UfU) has been committed to involving authorities, associations, citizens and students in the management of invasive alien plants which are plant pests. For this purpose, the UfU set up the Coordination Centre for Invasive Plants in Protected Areas of Saxony-Anhalt (KORINA). It has conducted several projects funded by the European Agricultural Fund for Rural Development. KORINA aims to support stakeholders in Saxony-Anhalt by providing the necessary information for effective management of invasive plants in a suitable form, by accelerating management processes and by intensifying cooperation.

KORINA has developed an action programme which includes steps to prevent invasions, to find and eradicate new infestations early on and to control more efficiently pest species that are already frequently recorded. Central to the action programme is the information system, which allows existing information to reach the stakeholders quickly. The information system includes a website with more than 200 pages (<https://www.korina.info>), an up-to-date online occurrences database, a smartphone app (KORINA-App) and other databases. The app and website provide information about the occurrences of invasive alien plants and give the opportunity to record new findings or additional information about occurrences provided by stakeholders, including the public.

The amount and variety of public outreach and educational work has steadily increased. At the start, the focus was on informing stakeholders. Since 2014, materials and methods for education have been developed and are used by educators and teachers to work with students. The educational materials and most of the public outreach materials are licensed under a CC-BY Creative Commons licence.

	2010	2011	2012	2013	2014	2015	2016	2017	2018					
Films for education									1					
Facebook														
E-learning materials														
Training course						8			5					
Exhibition						1	1	1	1					
Materials for school education														
Card game					1				1					
KORINA-App														
Twitter														
Workshops				4	1									
Poster				3	1									
TV and radio broadcasts			2	1	2	2	1	4						
Website	new		added pages		added pages and new design		added pages		added pages		added pages		new design	
Conference		1	1	1			1							
Flyer and leaflets	1	1	1	4	1	1		1	4					
Oral presentations	4	8	8	14	10	17	6	7	10					

Development of outreach methods in the work of KORINA

The aim of KORINA's public outreach and educational work is to make the effects of invasive alien plants better known in order to change the actions of individuals (e.g. gardening with native plants, no dumping of invasive species). Furthermore, it calls for action (e.g. reporting and removal of invasive alien plants), for the exchange of information, and for increased cooperation between stakeholders for the control of invasive plants.

1.7 CHALLENGES TO EFFECTIVE PEST RISK COMMUNICATION

There are many challenges to effective pest risk communication. By explaining how these can be identified and addressed, this guide seeks to support NPPOs so that they can overcome risk communication challenges.

Ten key challenges to effective risk communication and possible solutions are listed in Box 5.

Box 5: Ten challenges and solutions to effective pest risk communication

Challenge	Possible solutions (see Chapters 2, 3 and 4 for more information)
1 To identify all stakeholders	<ul style="list-style-type: none"> ♦ Be aware of the nature of the pest risk ♦ Review the list of types of stakeholders ♦ Consider creating an interest-influence matrix ♦ Consider past stakeholders whom your NPPO has dealt with
2 To identify the barriers to communicating effectively with each stakeholder group	<ul style="list-style-type: none"> ♦ Get training in communication skills ♦ Identify all stakeholders ♦ Be aware of possible differences in concerns between groups ♦ Consider language needs ♦ Ensure each stakeholder group can access the pest risk communication information ♦ Be sure to communicate a consistent message and use appropriate methods, adapted for each stakeholder group ♦ Use communication channels trusted by each group
3 To communicate clearly	<ul style="list-style-type: none"> ♦ Get training in communication skills ♦ Identify differences in the needs of stakeholders and communicate pest risk accordingly ♦ Avoid unnecessary technical language ♦ Use plain unambiguous language ♦ Ask others in the NPPO to check risk communication messages carefully (e.g. for accuracy (fact checking) and for clarity) before sharing
4 To identify where knowledge gaps exist between scientific experts and other stakeholders	<ul style="list-style-type: none"> ♦ Engage with stakeholders and explain the nature of the pest risk ♦ Explain the data sources used in the pest risk analysis (PRA) ♦ Enquire about stakeholder data that could contribute and close knowledge gaps
5 To manage stakeholder concerns when there are differences with the NPPO	<ul style="list-style-type: none"> ♦ Acknowledge differences in concern and provide feedback on why the NPPO can or cannot address the concerns ♦ Set the risk in context ♦ Communicate in a timely manner ♦ Target stakeholders with influence over others

6	To build and maintain trust in sources of pest risk information and the institutions with responsibility for assessing and managing pest risks	<ul style="list-style-type: none"> ♦ Engage with stakeholders and explain data sources used in the PRA ♦ Be transparent about data sources and interpretation of data and associated uncertainty ♦ Make data available ♦ Be open to challenge, acknowledge differences and explain NPPO aims ♦ Host meetings with stakeholders ♦ Be responsive to stakeholders' questions ♦ Be respectful when replying to stakeholders ♦ Answer the specific concerns of stakeholders ♦ Invite key stakeholders to visit institutions with responsibility for assessing and managing pest risks
7	To communicate uncertainties and what is being done to reduce them	<ul style="list-style-type: none"> ♦ Acknowledge that uncertainties exist ♦ Indicate what has been done to take account of the uncertainties ♦ Engage with stakeholders and seek further information to address uncertainties ♦ Update the PRA in response to new information
8	To communicate in a timely fashion	<ul style="list-style-type: none"> ♦ Make a plan for pest risk communication, including time to respond to stakeholders' questions ♦ Provide information updates when there are significant changes
9	To coordinate risk communication messages among multiple individuals or institutions who are conveying information about the same pest risk	<ul style="list-style-type: none"> ♦ Identify a lead with overall responsibility for risk communication ♦ Take time to clearly identify those stakeholders with particular risk communication needs ♦ Arrange planning meetings involving all individuals or institutions contributing to the risk communication ♦ Agree the aims of the pest risk communication ♦ Agree key messages ♦ Maintain contact between individuals or institutions
10	To ensure that risk communication is adapted to changing circumstances so that it reflects the current state of risk	<ul style="list-style-type: none"> ♦ Maintain an ongoing awareness of the pest risk ♦ Update the PRA in response to significant changes in circumstances ♦ Review past risk communication messages and revise in the light of new information

Countries may also face institutional challenges that make effective risk communication difficult. For example, countries may lack resources and expertise for monitoring and surveying plant pests and assessing their risks and management options. Lack of reliable data on plant pests and risks impedes the understanding of plant health issues and how to manage and communicate them.

Another challenge in some countries is that there is frequently a lack of clearly defined mandates and responsibilities for relevant government ministries and institutions. For example, it may not be clear

which individuals or institutions are responsible for risk assessment, management and communication, or for policy development versus implementation. Furthermore, there is often poor coordination and information sharing among the various plant health institutions. For the successful adoption and implementation of the risk analysis framework, it is important that responsibilities for risk assessment, management and communication are clearly defined, and that different institutions work together and exchange information. Use of the IPPC phytosanitary capacity evaluation tool can help (FAO, 2011), as can the IPPC

guide to NPPO establishment (FAO, 2015a) and the IPPC guide to NPPO operations (FAO, 2015c).

Lack of budget and personnel dedicated to risk communication is one of the biggest constraints to effective risk communication. Even though risk communication opens an NPPO to some challenges, such as dealing with different points of views or competing values, it is an important feature of the PRA process and helps reach the desired outcome – that is, effectively managed pest risk. It is worth investing time and effort into risk communication given the benefits that result, for example, from more complete information, greater scientific integrity, improved

understanding among the stakeholders of different points of view and greater conformity with standards and rules. Despite its challenges, the benefits to plant health and agricultural trade that result from effective risk communication make it an important part of the work on an NPPO.

The intention of this guide is to encourage NPPOs to engage and communicate with stakeholders about pest risks, for the benefit of plant health. Subsequent chapters provide readers with a better understanding of the challenges of pest risk communication and factors to take into account to overcome these challenges.



Stakeholder meeting, Canada

© A. Sissons (Canadian Food Inspection Agency)

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Chapter 2.

Principles of good pest risk communication

CHAPTER SUMMARY

- ◆ The principles of good risk communication are cooperation, transparency, responsiveness, respect and commitment.
- ◆ The principles can be used to build trust in information and regulatory systems.
- ◆ Communication is an interactive process.
- ◆ Openness, transparency and responsiveness build relationships and trust.
- ◆ A respectful tone matters.
- ◆ Trust in information and governing institutions is essential for effective pest risk communication. People who distrust pest risk messages are unlikely to believe or act upon the information and this can have severe implications for plant health, the environment, agriculture and agricultural trade, and economics.

The key principles are:

- ◆ cooperation
- ◆ transparency
- ◆ responsiveness
- ◆ respect
- ◆ commitment.

2.1.1 Cooperation

Although NPPOs quite often disseminate information in one direction, the key to good risk communication is to know when risk communication can and should be two-way and how to manage that. Good risk communication is not simply a one-way movement of information or about making stakeholders understand the pest risk from the NPPO's perspective.

Every individual involved in a discussion about risk, including scientists and risk assessors, will have a view influenced by many factors other than scientific evidence. These factors include risk perception and individual circumstances, such as how an individual is directly affected by the risk as outlined in Chapter 1 and elaborated in Chapter 3. It may not be possible to understand why each individual holds the views that they do, but open communication will reveal the differences and provide a basis for progress, to bring the different views closer.

Creating opportunities for an exchange of views will help everyone involved come to a mutual understanding of the risks. It will improve the chances that all relevant information has been considered and will improve cooperation and conformity. Box 6 presents an example of cooperation among stakeholders, in this case on reducing the risk associated with movement of pests via e-commerce.

PURPOSE OF THIS CHAPTER

The purpose of this chapter is to describe the principles of good pest risk communication.

2.1 PRINCIPLES

Effective risk communication is based on well-recognized and consistent principles. The level of pest risk and the degree to which stakeholders are likely to be concerned will determine the approach taken to risk communication. Depending on the situation, good risk communication may use many different methods and types of process.

One of the biggest influences on risk communication is whether or not those communicating about the risk are trusted or seen as trustworthy. In general, the principles of risk communication are based on communicating in a trustworthy manner.

Box 6: Cooperating over e-commerce pathways

With more Internet trade in goods and services worldwide, there is an increasing chance of pests moving with purchased items that may not be subject to plant health regulation. The area of e-commerce presents some of the most difficult pathways to manage with many challenges associated with them.

Acknowledging increased phytosanitary risk because of e-commerce pathways, the IPPC's governance body, the Commission on Phytosanitary Measures (CPM), adopted a recommendation ([R-05: Internet trade \(e-commerce\) in plants and other regulated articles](#)) in 2014. This recommends that contracting parties and regional plant protection organizations (RPPOs) raise awareness of e-commerce risks to plant health and develop mechanisms to identify e-commerce traders and products of concern.

Since then, a special topic session was conducted at the CPM in 2017 and e-traders and regulators discussed how phytosanitary considerations could be taken into account in their business practices. Several key stakeholders had already proactively taken steps to manage phytosanitary risk in trade of their products and others were keen to follow. The primary method for communicating about this risk is through notices on e-trader websites to ensure that consumers are aware of risks and the prohibition of products known to be of significant risk. This is an area that CPM and the IPPC Secretariat will continue to focus on and work on closely with key stakeholders, in particular the World Customs Organization.

2.1.2 Transparency

Being transparent means making evidence, such as scientific research, PRAs and the reasoning behind decisions, available to people. Transparency is about sharing what is known and also what is unknown. Transparency recognizes that where there is a lack of information, there can be some uncertainties. If uncertainties mean that there may be more than one expected outcome, taking account of the uncertainties helps to indicate their relative likelihood. Communicating uncertainties can require finesse and political astuteness and is likely to be determined by conventional practices, the intended audience and the situation.

Transparency can be demonstrated by, for example, publishing documents and making them available on the Internet. However, this kind of communication may not work for all stakeholders. Transparency also means communicating in a way which is accessible to the different stakeholders involved, such as meetings, phone calls and site visits as well as written communication.

Being transparent results in stakeholders having a better understanding of the basis for decision making; this can help an NPPO and stakeholders to focus discussions on the evidence and pest risk.

Decision making about plant health issues considers a wide range of scientific and economic evidence. However, the evidence doesn't always answer every question about a pest risk. Transparency, therefore,

also means being open about the uncertainty – what is not known or not clear.

Documents describing the scientific and economic evidence, such as PRAs, may contain many technical terms. However, even a reader who is familiar with all the scientific and economic evidence will find a document easier to read if it is well structured and plainly written and uses only essential technical language.

Box 7: Transparency and IPPC national reporting obligations

A fundamental aim of the IPPC is that contracting parties cooperate with each other to prevent pest risks, specifically the spread of plant pests. To assist countries in sharing information and to promote transparency, the Convention identifies specific [national reporting obligations](#) (NROs) that help achieve the protection of global plant resources from pests. NROs ensure official plant health information is available that can be used as the basis for facilitating safe trade, safeguarding food security and protecting the environment from plant pests.

To be most useful, the communication of plant health information should be accurate, up to date, clearly presented, consistent with IPPC guidance and in a format that is easily accessible and understandable by other members.

2.1.3 Responsiveness

Responsiveness means being timely in making information available.

Some plant health issues require urgent action and therefore a rapid communication process. For example, when a pest has been detected in a country for the first time, decisions sometimes need to be made quickly so that opportunities for eradication or control are not lost. In this kind of situation, risk communication will be much easier if there is already a history of good communication with affected stakeholders and contingency plans showing predetermined contacts and lines of communication are available.

With longer term plant health activities, there is a need to keep people updated on progress. Regular, ongoing communication, rather than just when the NPPO needs to communicate on an urgent matter, is an important part of building trust. This may be as important within the NPPO as with stakeholders.

Responsiveness also applies when replying to feedback. Feedback should be timely and answer the specific concerns raised, not just convey general information. Consistent messaging is important, as is clear communication such as avoiding the use of jargon, unfamiliar acronyms and technical language in responses.

2.1.4 Respect

Respect is central to all effective risk communication. Respect is conveyed indirectly in the way documents are written, in the speed of responses to communication and in the willingness to listen to the concerns of others.

Making documents clear and easy to read respects the reader's time. Documents which are poorly structured and contain unnecessary technical language take longer to read and understand. Well-written documents using appropriate language can be read more quickly and are less likely to be misinterpreted. Sometimes different documents with different levels of technical language are required to reach different target audiences.

Effective pest risk communication recognizes that everyone has different values and beliefs. It is

important to acknowledge concerns and emotions. It is easy to misinterpret emotion in written documents, especially those like emails, which are often written quickly and are not reviewed. In general, emotive language should be avoided in formal documents discussing plant health issues. Emotive language includes dramatic language to describe pest impacts and value-laden terms. Being dismissive or over-reassuring is also unhelpful.

Respecting someone's native language and culture when communicating risk information also conveys respect.

2.1.5 Commitment

Motivating action so as to implement effective risk management is one of the objectives of risk communication. When committing to specific actions during risk communication, delivering on agreed actions is essential. Commit only to what can be reasonably delivered, and then do it. Any action promised must be realistic. If the promised actions are not done, trust will be rapidly damaged.

2.2 IMPLEMENTING THE PRINCIPLES

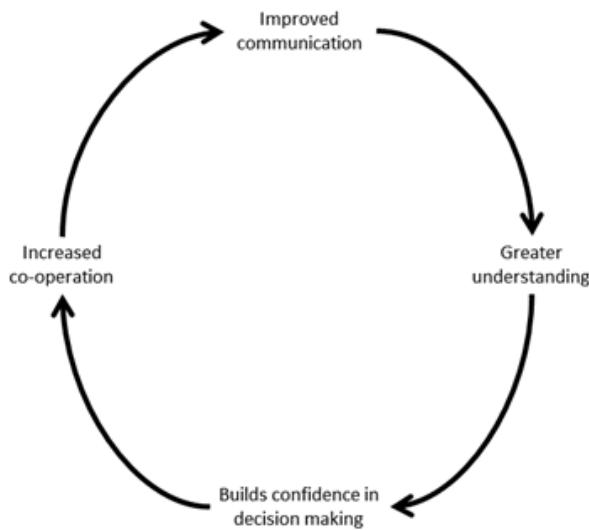
While it may initially take time and effort to adopt the principles for good risk communication it will make the process faster and more effective in the longer term. It may not be possible to reach complete agreement with every plant health issue, but using a fair process to work through the differences in view will reduce delays and disagreements.

Box 8 summarizes how implementing each of the five principles can be demonstrated.

While one aim of risk communication can be to help develop pest risk management options, good risk communication can do more than just address a single issue. Good risk communication contributes to a "virtuous circle" in which risk communication enables greater understanding, builds confidence and encourages greater cooperation as trust in a good regulatory system increases (Figure 1). On the other hand, poor risk communication will quickly destroy trust no matter how dedicated and competent the NPPO staff are in a good regulatory system.

Box 8: Principles of good risk communication and how to apply them

Principle	How to apply the principle:
Cooperation	<ul style="list-style-type: none"> ♦ Create opportunities for an exchange of views about the pest risk ♦ Work to understand the different views and the reasons behind them
Transparency	<ul style="list-style-type: none"> ♦ Make evidence available ♦ Make the decision-making process clear ♦ Be open about uncertainty ♦ Use well-structured documents with appropriate language for the target audience
Responsiveness	<ul style="list-style-type: none"> ♦ Make information available in a timely manner, depending on what is needed in the situation ♦ Answer the specific concerns raised by stakeholders
Respect	<ul style="list-style-type: none"> ♦ Consider the target audience when writing documents ♦ Acknowledge that different people have different values and beliefs ♦ Avoid emotive language in formal documents ♦ Communicate in the language spoken by stakeholders
Commitment	<ul style="list-style-type: none"> ♦ Ensure actions are reasonably deliverable ♦ Endeavour to deliver on agreed actions

Figure 1: A virtuous circle to enhance plant health through risk communication

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Source: MacLeod et al. (2016)

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During a media field trip for the CABI Pest Risk Information Service, Dr Johnson Nyasani, Senior Research Scientist Entomology, KALRO Embu, answers questions

Chapter 3.

Key factors to consider before communicating about pest risks

CHAPTER SUMMARY

- ◆ There are seven factors to consider before communicating about pest risks:
 - Recognize that planning is important.
 - Understand the nature of the pest risk, including uncertainties.
 - Identify the stakeholders.
 - Consider the needs of different stakeholders.
 - Be aware of the context in which the risk fits.
 - Understand the NPPO's responsibilities.
 - Manage differences in concern.
- ◆ Planning helps effective risk communication, especially regarding complex issues or large-scale communication campaigns.
- ◆ Understanding the pest, the risk it presents, the uncertainties and what can be done, is critical to determining appropriate communication methods.
- ◆ Identifying stakeholders involves determining which groups of people need to receive and understand the risk communication information and messages that are to be developed.
- ◆ Understanding the target audiences' needs is essential for success. Risk communicators should understand what the target audiences already know about the risk, any gaps in knowledge to be addressed, and the specific concerns and perceptions they have.
- ◆ Risk communicators must take into account the context in which the risk arises by considering the cultural and socio-economic background of the target audiences. It is necessary to understand which information sources are trusted, frequently used and accessible.
- ◆ NPPOs must decide how much effort to put into risk communication over each particular pest risk. This can be informed by the potential impact on plant health, the level of stakeholder concern and the urgency of action. It is important to consider both the level of crop or environmental impact and the level of public concern associated with a plant health issue and NPPOs should avoid potential unwarranted stigmatization of particular plants or plant products.
- ◆ It can be a challenge to manage differences in concern between an NPPO and stakeholders or between stakeholders. Clarifying the level of risk involved, sharing information and acknowledging differences in concern can help.

PURPOSE OF THIS CHAPTER

This chapter builds on the principles and concepts introduced or briefly covered in Chapters 1 and 2. It aims to provide a deeper understanding of the factors that should be considered when selecting the appropriate approaches to use and the practices to adopt when communicating about pest risks. In so doing, it aims to overcome the challenges and maximize the impact of risk communication.

3.1 THE IMPORTANCE OF PLANNING

Good risk communication will need planning. Those communicating about pest risk need to understand the risk, identify stakeholder target audiences and be aware of the context in which the pest risk arises. This can take time, and good planning can improve the efficiency of the process.

Pest risk communication can have the features of a delivery-focused project; for example, initiation, planning, implementing, and controlling a team to deliver a product within a specified time frame. It can therefore be helpful to adopt good project-management practice to ensure that the risk communication is provided in appropriate ways and on time using the data, expertise and resources available.

Planning to allow the necessary time for risk communication at the start of a PRA will benefit the process, for example by anticipating that contrasting concerns are likely to come from stakeholders with different interests. In such circumstances, plans can be made to manage potential difficulties.

Plans for risk communication should identify:

- ◆ the goals
- ◆ the stakeholder target audiences
- ◆ the key agreed messages
- ◆ how the message regarding pest risk is to be communicated
- ◆ the materials needed and actions required to ensure effective communication.

The larger or more complex the issue, or the greater the number of people involved, the more important it is to plan. Ideally, some form of monitoring and evaluation of communication efforts should be included for every type of communication, large and small. It is particularly important during a sustained campaign so that communication strategies can be adapted if necessary.

3.2 UNDERSTANDING THE NATURE OF THE PEST RISK

Effective risk communication by an NPPO requires a clear understanding of the nature of the pest risk concerned and an understanding of how to adapt communication efforts accordingly. Without such an understanding, the messages developed and necessary interactions with stakeholders are likely to be unproductive. If messages and interactions are based on partial information or not responsive to stakeholders' needs, they may lead to misunderstanding, mistrust and damage to NPPO credibility. This may ultimately result in a failure to protect plant health, agricultural and horticultural trade and plant resources in the wider environment.

3.2.1 What is the nature of the pest risk?

It is important to have a good understanding of the particular risks that are associated with the specific plant pest. At its most basic level, this involves collecting essential information on the following questions:

- ◆ What host plants, plant products or habitats are likely to be affected?
- ◆ What are the pest impacts?
- ◆ Who will be affected by pest impacts on the plants, plant products or habitats at risk?
- ◆ To what extent?
- ◆ With what probability?
- ◆ In what time frame (i.e. immediate or delayed effects)?
- ◆ What are the uncertainties for the particular situation?

Understanding who or what is affected is important when determining target audiences. Of particular importance is identifying vulnerable populations and the likelihood that pest impacts will fall more heavily on them. For example, subsistence farmers often rely on a single crop and may have no alternatives if that crop is affected by the pest. Information will need to be targeted to these groups, who may have very specific communication needs.

When consequences are immediate and severe, communication needs to be delivered quickly. The communication channels used in such a situation are likely to be different from those used to address less urgent pest risks.

With some pests, such as with certain fruit flies, widespread establishment in a country previously recognized as free from the pest could have significant impact on plant production and exports of host plant products. If such pests are discovered, there may be an immediate emergency response that seeks to eradicate the pest. In these cases, rapid communication is needed.

Box 9: Belize area freedom from Mediterranean fruit fly

Belize, through the support of the United States Department of Agriculture (USDA), established a Mediterranean fruit fly (medfly, *Ceratitis capitata*) surveillance programme in 1977. In 1987, in response to the first medfly detection in Belize, a ban on the export of medfly host commodities was put in place by the United States of America and steps had to be taken to re-establish Belize as a pest free area. To reopen access, Belize, with technical assistance from FAO, undertook a technical cooperation programme (TCP) that established a comprehensive national surveillance programme for enhanced responsiveness and eradication actions when detections occur (Cobb, 2011). Developing a risk communication strategy helped lead to improved responsiveness.

By following ISPM 4 (*Requirements for the establishment of pest free areas*) and ISPM 26 (*Establishment of pest free areas for fruit flies (Tephritidae)*), working closely with FAO through the TCP and engaging USDA throughout the re-establishment and verification process, Belize was recognized by the United States of America as free from medfly in 2001, and in 2007 was declared to have regained its pest free area status.

For Belize and the surrounding region, the benefits obtained from the pest free area programme are economic, commercial and social. The direct economic benefit from establishing the pest free area programme has been calculated to be BZD 140 (Belize dollars) for every dollar spent. To demonstrate the success of the medfly programme, export value of papayas increased from BZD 12.7 million in 2000 to BZD 21.3 million in 2008. Additional downstream benefits from implementing the programme include generation of jobs, increased foreign exchange earnings, positive effects on associated businesses and host commodity industries, and availability of domestic produce with minimal chemical residue.

In a commitment to maintain the medfly pest free area programme, Belize continues to invest substantial resources, some of which aid risk communication and help raise pest risk awareness among stakeholders. Belize also continues to establish regional alliances and implement new technologies such as geographic information systems to enhance the programme and seek new opportunities for market access for new host commodities.

In reality, the urgency with which it is necessary to communicate typically falls along a continuum. Indeed, pest risk issues are often initially addressed as the result of unanticipated pest incidents that require urgent responses (e.g. pest outbreaks). Later, however, risk communication efforts regarding those same risks may become part of ongoing overall strategies designed to prevent future incidents of the same type (i.e. in the case of outbreaks, to prevent future outbreaks), or aimed at inhibiting pest spread in a region.

Understanding the probability and severity of the effects of a pest risk is important for determining risk communication strategies with different stakeholders. For example, when the probability of adverse effects is very low but the potential consequences are severe, providing risk information on the website of the NPPO may be adequate for communication with the general public when concern is not high. Increased risk communication efforts and different messages may be needed to communicate with stakeholders who can help monitor the pest and minimize the likelihood and magnitude of impacts (e.g. plant health inspectors, extension workers and industry workers handling the relevant plants or plant products at risk).

Understanding the nature of the risks involved with a particular plant health issue can be increased by gathering information from stakeholders (e.g. plant production area, intended use of plants or plant products, disposal of waste and distribution systems).

3.2.2 What is the nature of stakeholders' concerns?

Risk communicators must have a clear understanding of how stakeholders may respond to different pest risks. Importantly, stakeholders tend to be concerned about a plant pest when:

- ◆ the pest can severely impact a staple food crop or economically important cash crop
- ◆ host plants or habitats are widely available (e.g. the pest could potentially establish and spread to many hosts or habitats)
- ◆ endangered species, such as rare plants, or protected environments, are perceived to be vulnerable to the pest
- ◆ risk management imposes costs on stakeholders
- ◆ the pest or its impacts are conspicuous
- ◆ the pest can have major impacts even at low population densities (e.g. occurrence impinges on exports).

Under these circumstances, it is particularly important to incorporate and address these concerns in the communication, and to communicate clearly the significance of the pest and the actual level of risk involved.

3.2.3 Assessing the quality of, and confidence in, available data

Information and data from a PRA provide the basis for understanding the nature of the pest risk. However, particularly in situations where decisions must be made rapidly and where urgent communication is required to prevent or reduce the likelihood of significant consequences, incomplete and uncertain data can be used to inform decision making.

To communicate effectively under conditions where risk information is associated with uncertainty, risk communicators need to have an adequate understanding of the uncertainties regarding the pest risk. This requires risk assessors to identify and record the uncertainties that arise during the risk assessment process, and to communicate the uncertainties to risk managers and risk communicators. How to communicate uncertainty is discussed further in Chapter 4.

The limitations of the risk assessment may also need to be expressed in a way that can be understood by a non-technical audience in order to increase transparency and enable stakeholders to comprehend the decision-making process.

3.2.4 Understanding what stakeholders can do to reduce pest risk

Risk communicators need to understand what stakeholders can do to limit the likelihood that a pest risk will materialize – that is, that the pest establishes, spreads and causes impacts. The ability of stakeholders to have some control over the pest risks they face is very important, and risk communication should address what steps they can take to reduce their risk. When stakeholders do not have personal control over a risk, it is particularly important to inform them about other measures that are being taken to reduce the risk on their behalf. This can provide some reassurance.

Dialogue with stakeholders is useful in informing risk management decisions. To manage a pest risk effectively, it is critical for risk managers to have a good understanding of what can be done to manage the risk, and who has the ability to do it. For example, an information campaign designed to encourage growers to clean and disinfect tools, such as pruning shears, when moving between orchards will be ineffective if they cannot access cleaning materials and disinfectant. Having access to such material is likely to be beyond the control, authority and resources of individual workers, and instead depends on those who own or control the infrastructure. Communication should therefore also be targeted to those who own or control the places where the labourers work.

In addition to understanding who is able to do what, it is necessary for risk managers to understand what available motivations or incentives may be needed to implement risk management successfully. For example, if farmers and traders are not motivated to adopt good practices to improve on-farm crop hygiene because of the costs incurred, positive or negative incentives (e.g. compensation, enforcement of laws) may be necessary to promote behaviour change.

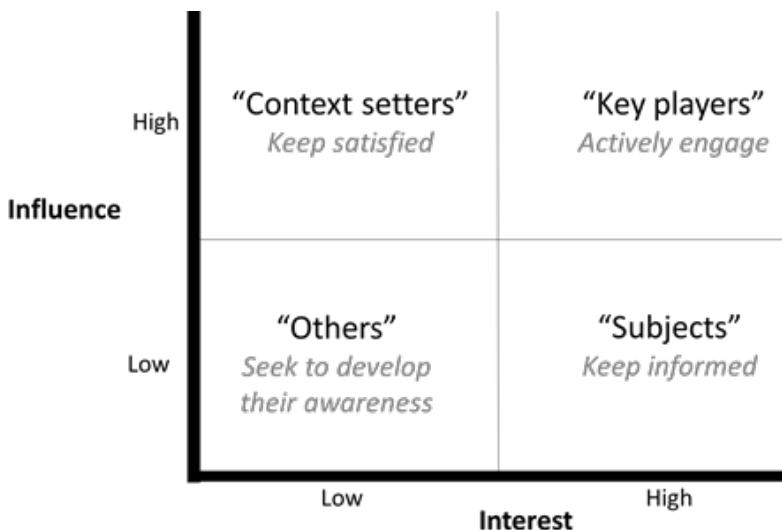
Dialogue with stakeholders can provide risk managers with insights on who has the ability to minimize the risk effectively, and the motivations or incentives that may be needed to implement the risk management successfully.

3.3 IDENTIFYING THE STAKEHOLDERS

To develop and successfully implement any risk management measures, it is important to understand the nature of the pest risk that could materialize. It is equally important to identify and appropriately target the audiences that may be affected by the risk, and those who could influence implementation of risk management measures.

Using an interest-influence matrix can help identify and characterize stakeholders into groups, allowing more targeted and appropriate communication. Stakeholders can fit into one of the four quadrants of the matrix according to their interest in the particular pest risk and the influence they have on risk management decision making (Figure 2).

Figure 2: An interest-influence matrix



High interest, high influence: This group of stakeholders are both significantly affected by the potential pest risk or plant health issue and are most able to do something about it, either supporting or opposing changes. It is particularly important to engage with all in this group, ensuring that they understand the risk. Good communication with this group will allow them to feel a sense of ownership in decision making which will facilitate implementation of risk management decisions. Organizations typically falling into the high interest high influence quadrant, regarded as "key players", include industry organizations representing crop or plant producers and the NPPO itself which has the role of formulating plant health policy. Most risk communication effort will often be targeted at those within this group.

High interest, low influence: This group of stakeholders may have a great deal of relevant information (hence their interest) but no effective mechanism to influence policy or risk management decision making. These "subjects" range from organizations representing professionals within the supply chain, crop consultants, and research institutes who have appropriate facilities and skills to deliver scientific data to inform policy making but who have limited scope to determine risk management outcomes, to subsistence farmers relying on a single crop that is vulnerable to the pest of concern. Such farmers have a lot at stake and hence high interest in the pest.

Low interest, high influence: This group of stakeholders may not have much experience in plant

health or specific pest risk matters but can still be important. They could be big industries or major food retailers (supermarkets), who have their own internal standards regarding the acceptability or quality of plants and plant products while leaving it to other stakeholders, such as their suppliers (the producers), to take the necessary actions or precautions. Because of their high influence but low interest, this group of "context setters" should be engaged with and informed of the consequences of their policies if risk responsibility is to be appropriately shared.

Low interest, low influence: This group are largely those that experience limited impacts from pest risk issues. People in this group will not be particularly worried about pest risks or possible management measures. While it would be wasteful to engage heavily with this group, keeping in touch with them is a good idea in case their status changes – that is, in case they become persuaded to shift into another quadrant.

Stakeholders in an interest-influence matrix are not static and may shift between quadrants depending on the pest risk concerned. Industry groups and representatives, such as importers and exporters of plants and plant products, and domestic growers can be "key players" and may already play an active role in providing a major source of information to an NPPO when the pest of concern is relevant to their industry. Conducting a PRA requires knowledge of the specific process variables and conditions around the production and handling of host plants and plant

products. Since industry has the best understanding of such variables and conditions, the information that it provides can be vital. As well as supporting PRAs, the routine information flow between industry and government usually involves communications necessary to set standards or establish best practices and good procedures. NPPOs will often be familiar with responding to questions from industry.

Appropriately targeted and transparent communication regarding pest risks can be considered an essential element of protecting plant resources. Early participation in the PRA process by the public or consumer organizations ("subjects") can help to ensure that consumer concerns are addressed and will generally result in a better public understanding of the PRA process and how risk-based decisions are made. Consumer organizations also often work with governments and industry to ensure that risk messages addressed to consumers are appropriately formulated and delivered.

Identifying your stakeholders is about knowing which groups of people need to receive and understand the message you intend to develop and communicate. In pest risk communication, there are many groups you may communicate with (Box 10).

3.4 UNDERSTANDING STAKEHOLDER NEEDS

Having characterized and identified the various stakeholders with whom an NPPO needs to communicate, the NPPO should next consider what information the stakeholders need and how to communicate it. The following aspects are important to identify:

- ◆ What do stakeholder audiences already know about the pest risk?
- ◆ How do they act on this knowledge?
- ◆ Which gaps in knowledge need to be addressed?
- ◆ What are the stakeholders' specific concerns and perceptions about the pest risk?
- ◆ Do they have any misunderstandings?
- ◆ What do the stakeholders want to know about the pest risk?
- ◆ How concerned are the stakeholders about the pest risk?
- ◆ What are the stakeholders' specific concerns or perceptions?
- ◆ How do stakeholders prefer to receive information about pest risk?

Box 10: Who are your stakeholders?

The target audience for pest risk communication can vary, depending on the situation and purpose of the information you intend to communicate and the context within which you will deliver your message, including social and cultural factors.

Examples of different stakeholders include:

- ◆ growers and primary producers
- ◆ supply chain participants (e.g. packers, processors, retailers, marketers, importers, exporters)
- ◆ the general public (the group or groups with the greatest interest)
- ◆ non-governmental organizations
- ◆ national research institutes
- ◆ universities and academia
- ◆ media outlets (e.g. specialist industry or grey literature and more general media)
- ◆ online stakeholders (e.g. social media influencers, bloggers if they are in a position to influence others)
- ◆ national and provincial government agencies (e.g. customs, environmental services, trade)
- ◆ trading partners (other countries' NPPOs)
- ◆ regional plant protection organizations (RPPOs)
- ◆ Regional Economic Committees
- ◆ International Plant Protection Organization (IPPC) Secretariat
- ◆ other international organizations (e.g. WTO and other member agreements).

- ◆ Are there certain sources of information that are trusted by stakeholders?
- ◆ What information sources and channels do stakeholders have access to?
- ◆ Are there any key representatives that have influence over stakeholder groups?
- ◆ Do your stakeholders trust you? Do they like you?

To address these points, careful consideration is required to understand the particular needs of different stakeholder groups.

Answers to these questions will help determine what information and communication channel or channels to use, as well as understand how to develop your message to ensure the audience's knowledge gaps, concerns, perceptions and any uncertainty is addressed.

Box 11: Understanding the risk perception of target audiences

A good understanding of the characteristics of different groups, their representatives (e.g. official contact points, key staff and leaders) and their information requirements and preferences (e.g. level of detail, language, delivery mechanism) can help you prepare how to communicate your pest risk information.

Some ways that can help differentiate groups and their information requirements in the context of pest risk communication include:

- ◆ discussions with, and feedback from, stakeholder groups
- ◆ interviews with stakeholders
- ◆ small focus group discussions with stakeholder representatives
- ◆ qualitative and quantitative approaches (to understand your stakeholders' needs)
- ◆ monitoring media and topic-related forums to gather news and information already available
- ◆ Internet searches to identify online communities of relevance to plant health
- ◆ following social media activity of key stakeholder groups.

Box 12: The successful risk management of pond apple in Australia and the engagement of Eastern Kuku Yalanji traditional owners in its eradication

Pond apple (*Annona glabra*) is an invasive plant listed as a Weed of National Significance in Australia. The plant behaves like a mangrove, establishing in brackish and fresh water, and produces dense growth which forms monocultural thickets and crowds out native vegetation. The plant is distributed from northern New South Wales along most of the Queensland and Northern Territory coastlines.

The risk pond apple posed to native biodiversity was communicated to the traditional owners of the Eastern Kuku Yalanji Indigenous Protected Area (IPA) in Queensland, who manage more than 20 000 hectares of Bubu (Land or Country) either solely or in collaboration with local or national government. Taking into account the information on the establishment and spread of pond apple, the traditional owners acknowledged that pond apple was a risk not only to native biodiversity but also to associated indigenous cultural sites located in the IPA.

Since 2014, the Jabalbina Yalanji Rangers have collaborated with non-profit groups as well as local government to carry out control and follow-up monitoring of pond apple infestations in different parts of the IPA. Training was given to the Jabalbina Yalanji Rangers, as well as to traditional owners and indigenous students, to identify and control pond apple using various methods including hand pulling for seedlings as well as basal barking for larger trees, a method which involves a small amount of herbicide sprayed directly onto the bark at the base of the tree. Indigenous communities were originally hesitant about the use of chemical controls on weeds, but after the benefits of basal barking were expounded and after observing the successful effects of using glyphosate on pond apple, the indigenous communities were more accepting of herbicide use.



Infestation of pond apple trees at Amos Bay

The communication of pond apple as an invasive risk and the efforts and engagement of the traditional owners were major factors in the control and eradication of pond apple in the IPA, with many of the smaller infestations along local rivers and creeks now under control. Rangers conducted follow-up monitoring and control trips during 2016 and 2017 and efforts continue when funding allows, with the ultimate hope of removing pond apple from the Eastern Kuku Yalanji IPA altogether.

3.4.1 The cultural and socio-economic background of stakeholders

To determine risk communication needs, NPPOs must respect and take into consideration the culture, beliefs and socio-economic status of the target audiences. Understanding and respecting the social and cultural values of groups helps to ensure that the message is not taken out of context or misunderstood. The unique role of plants and plant products in culture and society.

When developing pest risk messages, NPPOs must take into account the unique roles that plants and plant products play in cultures and society. Use of certain plants and plant products is often rooted in specific cultures and traditions. Suggesting that there are problems with these plants or plant products – that is, due to the presence of pests – may be perceived as criticism of a group's identity. As a result, such beliefs, traditions and practices are difficult to change simply by providing pest risk information. For example, in some cultures, certain crops are perceived as an essential part of their traditional and "authentic" cuisine. The suggestion that a phytosanitary treatment on these crops is necessary before export or prior to import, to remove regulated pests, may be interpreted as an accusation that they, and their culturally significant plants, are unclean. Instead of simply communicating pest risk information, messages may be more effective if they provide information about methods for reducing the pest risk that do not fundamentally change the significance of the plant or plant product (e.g. information about how to grow traditional plants to achieve at least minimum plant health standards).

Pest risks cannot be avoided completely, and in some circumstances decisions on the acceptability of risks are driven by simple economic realities. In the absence of the availability of affordable alternatives, many individuals may have little choice but to use or import plants or plant products that present a degree of pest risk. For such populations, communicating only about the risks associated with these products, without providing information or resources necessary to minimize the risk or enable different choices, is unlikely to advance plant health. In such circumstances, the IPPC principle of managed risk applies (see Box 13).

Box 13: Managed risk and communicating with international stakeholders about pest risk – *Thrips palmi* as an example

Analysis of border pest interception data can be used to identify emerging pest risks and can result in the initiation of PRAs. Analysis of such data within the European Union (EU) in the late 1990s revealed increasing interceptions of *Thrips palmi*, a horticultural plant pest which had spread internationally. A PRA was initiated that found one of the main pathways for *T. palmi* entry into the EU was on orchids imported from Thailand. The PRA also revealed that *T. palmi* has a wide host range and that it could potentially establish in EU glasshouses where growers of cucumbers (Cucurbitaceae), peppers and eggplants (Solanaceae) could suffer significant financial loss resulting from direct feeding damage and from tospoviruses transmitted by *T. palmi*. Production of many ornamental flowers could also be affected. The PRA concluded that phytosanitary measures were justified on the pathway.

After communicating about the risk and receiving official notice of *T. palmi* interceptions by the European Commission (EC) the Thai Ministry of Agriculture organized meetings for orchid exporters. At these meetings, the pest risk to producers in the EU from *T. palmi* was explained and instructions on the correct use and dose of fumigants for control of pests on orchids was given. The Thai Agricultural Regulatory Division also organized fumigation training sessions for orchid exporters.

In consultation with the Thai authorities, EC phytosanitary measures were established stipulating that cut flowers of Orchidaceae originating in Thailand must either come from a place of production which has been found to be free from *T. palmi* during official inspections over the previous three months, or have been subjected to an appropriate fumigation treatment prior to export to ensure freedom from *T. palmi*.

The phytosanitary measures allowed for the continued export of orchids from Thailand under a regime of managed risk. Continued surveillance of the pathway revealed that interceptions of *T. palmi* declined over time following implementation of the measures.

Box 14: Plants of cultural importance

- ◆ Plants and human culture are inextricably linked. Culturally important plants are used for their functional food value, religious symbolism, medicinal attributes, material culture, and in national or regional symbolism.
- ◆ Depending on the cultural use, different parts of the plant may be required in a fresh or dried state, which has implications for the transfer of pests as plant material is imported or exported.
- ◆ Adulteration (phytosanitary treatments of imports) of such products may be seen as particularly objectionable, and the risks connected with the contamination of these plants and plant products may also be perceived as much greater because of their symbolic value.
- ◆ Some plants and plant products used as a food choice are a way to communicate one's personal identity or cultural membership, or may be an expression of ideological viewpoints.
- ◆ Societal groups which maintain traditional practices such as preparing folk medicines and participating in religious observances are more likely to have a diverse species set of culturally valuable plants.

Language needs

Multicultural, multilingual societies require multicultural, multilingual risk communication efforts. Unfortunately, because of the additional skills and resources that are required to communicate in multiple languages, the default for NPPOs is to interact with stakeholders in the dominant language. However, communicating essential pest risk information in a single language may unintentionally:

- ◆ have detrimental effects on the plant health status of plants managed or cultivated by people that do not speak that language
- ◆ give the impression to those who do not speak the dominant language that the communicator does not care about the plants that they grow or manage.

In the event of a pest outbreak that threatens nearby villages, neighbourhoods or regions where a particular language or dialect is spoken, efforts to alert the growers about the pest risk must be made in that language or dialect.

Reading ability

Access to written notices about pest risks and the ability to read them may vary among populations because of problems with distribution of these notices, vision or literacy. Communicating about pest risks in written form only is unlikely to meet the needs of all stakeholders, even in affluent countries. For people for whom written communication is unsuitable, risk information needs to be delivered in a variety of ways and through channels that do not rely on the ability to read (e.g. radio, video or television, podcasts, local meetings and events, word-of-mouth, images, stories, songs or acted out in plays or other performances).

Even for those that can read and use the same language as the NPPO, some technical and scientific language can be interpreted in a different way. Hence it is important that NPPOs do not simply repeat the findings of a PRA, but consider the words to be used carefully and avoid using words that could be interpreted differently by the target audience.

3.4.2 Deciding how to reach stakeholders

Pest risk communication can only be effective when the delivery mechanisms used are appropriate for the intended audiences. For each of the target audiences, it is important to understand the preferred and most appropriate information sources, channels and methods of communication (see also 4.5).

Information sources and spokespersons

To determine which information sources can help when communicating about pest risks, NPPOs must understand which sources of information each of the stakeholders sees as trustworthy, credible and reliable. It is important to note that the most trusted information sources are not necessarily the most frequently used information sources. In addition to understanding levels of trust in sources of information about pest risks, it is important to understand which sources are frequently used, and which sources can best reach the target audiences. NPPOs should collaborate with credible and accessible information sources to deliver pest risk information to stakeholders.

For example, in countries where the population is diverse and some people are difficult to reach and likely to be excluded from receiving key messages, it may be important to engage community-based organizations

to reach all target audiences. Community-based risk communication programmes have proven their effectiveness, but they are also time, capital and labour intensive. NGOs, international organizations and community-based organizations are often useful for conducting these programmes, and governments may benefit from supporting and collaborating with these organizations.

Organizations must also choose a spokesperson to communicate with stakeholders. Effective risk communication depends on being both understood and trusted. Therefore, in choosing the right person to communicate about pest risks, it is important to select someone who is technically competent and clearly know the issues related to the risk, is confident in his or her ability to talk about them and, through their body language and actions, is able to inspire the trust and confidence of others.

To ensure trust, the communicator (and the communications) should demonstrate evidence of knowledge and expertise, genuine openness and honesty, and sincere concern, care and empathy, as necessary. While technical expertise is critical to establishing trust and credibility, it is only a part of what is needed. Having the ability to connect with stakeholders demonstrates trustworthiness and enhances credibility. Good communicators adapt their communication approaches to meet the needs of their target audience. They are also willing to acknowledge when they do not have all the answers, and they know how to adjust their communication accordingly.

It can be difficult to find a single person who has the necessary technical expertise and communication skills, so it may be necessary to assemble teams of people who, in combination, have the required skills. Sometimes this means choosing a lead communicator who possesses good communication skills and expertise, and who is then supported by a group of technical experts. It may also be beneficial to provide the technical experts with training in important social issues and risk communication, so that they can communicate about pest risks more effectively. For example, non-verbal cues such as facial expressions, gestures, posture, and tone of voice, can aid or encumber the interpretation and response to a message. Studies have shown that between 60 and 90 percent of a message's effect may come from non-verbal clues. Therefore, effective communicators should be aware of non-verbal clues in their own behaviour and develop the skill,

through training, of reading non-verbal forms of communication in the behaviour of others.

Three main elements of non-verbal communication are important to keep in mind: appearance, body language, and tone of voice. The appearance of the speaker and their surroundings are vital to effective oral communication, while the appearance and tone of written messages can either convey importance or cause the material to be discarded and ignored. The tone, rate and volume of the sender's voice can convey different meanings.

Having a trusted and well-trained spokesperson is particularly important during emergency plant health incidents. However, use of a spokesperson is not restricted to emergency situations. For example, celebrities can be asked to promote pest risk awareness campaigns.

Information channels and methods of communication

The most effective risk communication takes many forms, both passive and active, takes place in many venues and is delivered through a variety of communication channels. As questions arise or decisions are reached, communication of progress so far and the next steps is a helpful way of engaging stakeholder input and seeking support.

Active forms of communication may be personal, such as face-to-face meetings, phone calls or written correspondence, or they may be impersonal and targeted at a wide audience, such as with mass-distributed letters, or web-based questionnaires that seek input from stakeholders.

Passive communication may be an effective means of communicating with a broad audience, or when the intended audience is not well known, for example when trying to reach the general public or individuals with a special interest. Passive forms of communication include websites, posters and hand-outs; even general mail-outs accompanying tax bills or utility bills may be an effective way to reach many people with a single message.

Use of the appropriate communication channels and methods of communication is essential for reaching target audiences. Communicators must understand which communication channels and methods (e.g. print media, social media, websites, community meetings) are most appropriate for communication with each target audience (Box 15). Not all stakeholders

will have access to, or want to use, the same communication channels. Websites, for example, may be of little use in developing countries where most of the target audience has limited access to the Internet. However, websites are often used by professionals (plant producing businesses, NPPO officers and the media) who may further distribute the information.

Approaches to communicating about a pest risk may also be different if it is the subject of controversy, such as when political or scientific opinions diverge or there are strong and diverging opinions between stakeholders. Sustained communication is often required and NPPOs will need to consider when and how to address and respond to the opinions of other

Box 15: Communication channels, their advantages and disadvantages

Communications channel	Good for...	Inappropriate for ...
♦ Traditional news media, TV, radio, newspapers	♦ Urgent pest risk and plant health announcements and broad awareness raising	♦ Risks affecting a narrow group of stakeholders ♦ Low level risks
♦ Websites	♦ Communications to a broad audience where feedback is not a priority ♦ Free access to different types of information	♦ Stakeholders with poor access, or no access, to the Internet
♦ Tailored printed publication (e.g. pest risk information sheet)	♦ Reaching specific target audiences with tailored messages	♦ Urgent plant health announcements ♦ Pests affecting diverse groups with different needs or concerns
♦ Meetings and workshops	♦ Engaging with key target audiences on sensitive issues	♦ Engaging with very many people, each with different interests
♦ Internet-based social networking	♦ Simple, focused messages that need to reach a broad range of consumers or specific, connected, interest groups	♦ Sensitive subjects ♦ Complex issues ♦ Stakeholders with poor access, or no access, to the Internet

3.5 WHAT IS THE HISTORY OF THE RISK, AND THE POLITICAL AND MEDIA ENVIRONMENTS SURROUNDING IT?

To determine the type of information necessary to address a particular pest risk issue, NPPOs also need to consider the historical, political and media environment in which a pest risk issue occurs. Pest risks should be discussed within the particular context in which they arise.

To understand more fully the context of a pest risk, it is essential to be aware of the history of the issue. For example, if a business has recurring plant health issues that affect its plants or plant products, existing levels of trust in that company are likely to be low.

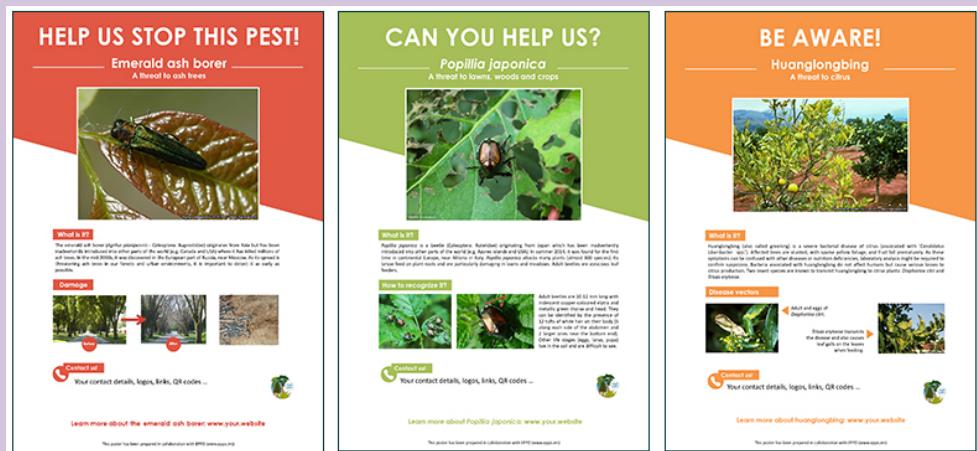
stakeholders who are communicating about the risk. Similarly, the type, tone and amount of media coverage about a particular pest risk can determine what and how to communicate. How pest risks are being portrayed in the media is likely to influence what people understand about the risk, and how they think about it. To determine which topics may need to be included in the communication, it is particularly important to understand what narrative is being used to explain the nature of the risk, what has happened to cause it and who is responsible for causing the problem and for solving it.

Box 16: Using posters to aid risk communication

In 2017, the European and Mediterranean Plant Protection Organization (EPPO) published a series of templates for pest-specific posters and leaflets. The objective of this work was to provide NPPOs with templates that could be easily adapted to different types of pest-specific information campaigns (e.g. early warning, pest reporting, containment and eradication programmes). NPPOs are encouraged to personalize and translate these templates to adapt them to their own needs and branding.

The poster and leaflet templates were drafted by the EPPO Panel on Plant Protection Information and agreed by the EPPO Working Party on Phytosanitary Regulations in June 2017. As this is a rather recent initiative, NPPOs are now being invited to provide feedback to the EPPO Secretariat on the use of these templates at a national level.

These posters will also illustrate an EPPO standard (currently under development) on how to raise awareness and communicate about the risk posed by specific pests and how to respond to increased awareness (e.g. in terms of responses to reported findings).



Examples showing how the template can be used to prepare posters for three specific pests (emerald ash borer, Popillia japonica and huanglongbing)

3.6 UNDERSTANDING THE NPPOS' RESPONSIBILITIES FOR PEST RISK COMMUNICATION

NPPOs need to understand their responsibilities with regard to a particular pest risk situation. Given that NPPOs have limited resources, they must decide what level of intervention and effort are appropriate when addressing a particular pest risk issue. Much of this is informed by the level of potential impact on plant health, as shown within a PRA, the level of stakeholder concern and the urgency of action.

In some circumstances, the NPPOs responsibilities are clear. For example, in cases where there is an immediate risk that is likely to have serious consequences, there is a duty and probably a regulatory obligation to rapidly and widely communicate appropriate risk messages. In contrast, in situations when

the evidence suggests that the risks to plant health are quite low, and stakeholders are not concerned, the appropriate response may be, for example, to make information available by issuing a press release, or putting information on a website for those who might seek it.

When the level of pest risk is unknown and the actions to be taken are uncertain, the NPPO may have the responsibility to engage with stakeholders to identify their priorities for risk management.

One of the most difficult issues to address is what an NPPO should do when PRA conclusions do not align with stakeholder risk perceptions. In a situation where stakeholders perceive a higher risk than the NPPO, and after considering information provided by stakeholders the assessed risk is still lower than that perceived by stakeholders, an NPPO must carefully

consider how its resources should be used. It may be appropriate to invest in continued engagement, for example to better understand stakeholder concerns in order to improve understanding of different points of view or to provide additional information to reassure stakeholders.

When addressing pest risk issues where the impact on plant health is high but stakeholder concern is lower, an NPPO has an obligation to protect plant health. To do so, the NPPO may have to go beyond simply providing information by also engaging in activities designed to increase stakeholder concern and awareness and by actively persuading stakeholders to take appropriate action to help manage the risk. An example of raising awareness is shown in Box 17.

long-standing or regular issue as opposed to a new or unexpected event. For example, communication might focus on stakeholders' roles in the proper steps for the importation of plants, or the risks associated with travellers unintentionally introducing pests from one area to another. In these cases, messages can often be developed, refined and distributed over time or at specific high-risk periods (e.g. during peak planting or travel seasons). Communication will also need to be updated as new information about the risk becomes available.

Importantly, the identification of a pest risk, or a perceived pest risk, could result in plants or plant products in the affected region being stigmatized with significant economic consequences and a

Box 17: Distribution of posters and stickers to raise awareness concerning risks involved in the transportation of firewood

The movement of firewood poses a substantial risk to Canada's economy and environment. Transporting untreated firewood, for example to or from a camping site or cottage, can lead to the spread of pests, including insects, plants and pathogens, harboured in the wood or bark. In order to raise awareness of the risks involved in the transportation of firewood, the Canadian Food Inspection Agency created and distributed posters and stickers to the public. Posters outlined the risks involved concerning firewood movement, and stated that firewood should be bought and burned locally. By communicating the risks involved to the public, the Canadian Food Inspection Agency takes a proactive approach to the prevention of the spread of pests.

(Note that the posters are provided in two languages.)



Ongoing pest risk issues that generate stakeholder interest or concern require sustained communication. These situations can involve communicating about pest risks that are relatively well understood by the NPPO and stakeholders alike, and is most often applicable to situations where the risk is a

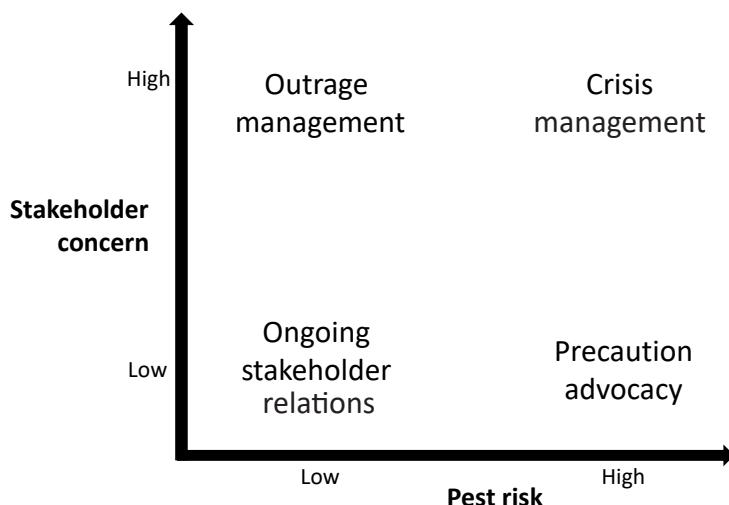
negative impact on the livelihoods of stakeholders. NPPOs have a responsibility to put the risk in context and provide stakeholders with accurate information about risk. This can minimize unwarranted stigmatization.

3.7 MANAGING DIFFERENCES IN CONCERN

Differences in concern over a pest risk require NPPOs to adapt their communication strategy to address the specifics of each pest risk. Differences in concern will be revealed by stakeholder reactions. Depending on the assessed pest risk, the degree to which stakeholders are concerned, and the urgency for action to reduce impact, risk communication approaches can be categorized as "outrage management", "crisis management", "precaution advocacy" and "ongoing stakeholder relations" (Figure 3).

If stakeholder concerns about a pest risk exceed those identified by the NPPO, it does not automatically mean that stakeholder attitudes need to be "corrected" to align with the PRA. For example, the fact that a particular pest risk results in only a small area of woodland being destroyed does not necessarily mean that the risk is culturally acceptable. Similarly, even a small risk may be seen as unacceptable if it is controlled by or imposed by others or has other associated factors that increase perceived risk. Nevertheless, clarifying the level of risk involved, while acknowledging stakeholder concerns, can help stakeholders make more informed decisions.

Figure 3: Conceptual categories of risk communication according to pest risk and stakeholder concern



Source: adapted from Sandman (2007)

Outrage management within pest risk communication describes the situation where the degree of stakeholder interest and concern is high but the pest risk, at least as assessed by the NPPO, is lower. The goal of outrage management is to reduce the outrage to a level where a more constructive and useful discussion of the risk management action is possible. In situations where stakeholder concerns significantly exceed the impact on plant health, NPPOs may have difficult choices to make. In some cases, they may have a responsibility to put the risk into context, while appropriately addressing the underlying reasons for the concern. It is important to remember that when stakeholders' perceptions of

Crisis management describes the situation where the pest risk is high and the level of interest and concern from stakeholders is also high, and there is an urgency required for risk communication. The goal of crisis communication is to lessen the impact caused by the pest by ensuring that necessary actions are taken, helping stakeholders cope with their distress, and protecting relationships and reputations. Crisis management communication may be required during an emergency plant health incident. Messages are often direct, and are delivered frequently and urgently. For example, emergency situations such as serious pest incursions or major pest outbreaks can require a rapid response. Often the NPPO must rely

upon action by private businesses or homeowners to ensure the eradication or containment of a pest. There may not be enough time to consult fully with all relevant stakeholders. There may be incomplete information about the extent and full impact of the risk or who is affected; this will need to be addressed by acknowledging uncertainty in the communication. The coordination of communication to various stakeholders becomes increasingly important in order to avoid contradictory messages and confusion. For these reasons it is important that there be a risk communication plan in place, in conjunction with a risk management plan. Preparing for crisis communications is also important. This may include developing easy-to-access distribution lists, prepared messages and holding statements, identifying spokespeople in advance and providing training.

Precaution advocacy is needed when the NPPO assesses pest risk to be higher than that perceived by stakeholders. An NPPO may consider, for example, raising awareness among target stakeholder groups that have influence over other stakeholders to increase overall concern and stimulate action to help manage the pest risk.

Despite a pest risk not being considered high by both an NPPO and stakeholders, persistent but lower level risk can still require sustained communication efforts to maintain both awareness and actions to prevent the risk from escalating. Such communication can be considered as ongoing stakeholder relations.

Recognizing and managing different concerns among stakeholders enables an NPPO to develop risk communication strategies that aid the effective management of pest risk.

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Plant health rally in Zambia

Chapter 4.

Putting pest risk communication into action

CHAPTER SUMMARY

- ◆ Coordination of communication efforts should be an integral part of an NPPO's plan when communicating about phytosanitary activities. Effective coordination of communication efforts among various stakeholders promotes consistent messages that foster clarity, and avoids confusion among target audiences.
- ◆ Stakeholder relations require continuous investment and need to be managed carefully. Communicators need to build and maintain good long-lasting working relationships with relevant stakeholders.
- ◆ When it is necessary to communicate about a pest risk where information is uncertain or incomplete, communicators should clearly indicate what is known, what is relevant but uncertain, and what is being done to address uncertainty and respond more effectively.
- ◆ Effective risk communication messages provide target audiences with accurate information tailored to their needs, describe the risk, and provide information on what is being done to reduce it and what steps people can take to reduce their risk.
- ◆ There are a variety of communication channels available; the choice of how to communicate pest risk will be influenced by a number of factors including the complexity of the message, the stakeholder target audience and the urgency of the situation.
- ◆ Social media allow for less formal risk communication at high speed and provide opportunities for rapid feedback.
- ◆ To develop effective risk messages, communicators need always to inform and whenever possible to engage in dialogue with stakeholders in the development of messages, pre-test messages with target audiences, and monitor and adjust messages as the plant health issue evolves.
- ◆ Monitoring and evaluating the effectiveness of communication is essential, to inform both current and future pest risk communication. It is important to evaluate whether the audiences received, understood and responded appropriately to the messages.
- ◆ There is a role for communication officers in contingency planning.

PURPOSE OF THIS CHAPTER

The purpose of this chapter is to integrate the concepts from the previous chapters to provide practical guidance for effective pest risk communication. The application of pest risk communication in reality requires planning to ensure that key messages are appropriate for your audience and will provide them with the information they need. Developing and delivering messages appropriately and interacting with the media and other stakeholders at different scales from national to global all help communicate pest risk, including the related uncertainties, in different situations. Social media allow less formal but rapid dissemination of information, and advice on use of social media is provided. Finally, monitoring and evaluating your pest risk communication enables you to check that messages have been effectively received and allows for continuous improvement in your communication approach.

4.1 STAKEHOLDER INTERACTIONS

Most pest risk communication issues involve several different stakeholder groups, which vary dependent on the situation. They range from the general public, growers and farmers, industry organizations and NGOs, to trading partners, the IPPC Secretariat, regional organizations such as a regional plant protection organization (RPPO) and other international organizations.

Depending on the issue being communicated, information and messages will need to be coordinated to ensure that they are received by the appropriate stakeholders in an accurate and timely manner. Communication may include:

- ◆ updating stakeholders on outcomes of meetings and actions taken by the NPPO
- ◆ the issuance of new import requirements
- ◆ legislative or policy decisions
- ◆ response activities to plant health issues (e.g. a regulated pest incursion)
- ◆ other issues relevant to the plants at risk.

Each NPPO can identify important media contacts and cultivate relationships that facilitate communication even if there is not a public relations officer

available to the NPPO within their own organization.

It is essential, particularly during emergency situations such as pest incursion responses, that key messages are provided regularly based on the most up-to-date information. Through coordination of communication, resources are more efficiently used and messages are delivered to stakeholders through appropriate channels. This ensures that the NPPO can update stakeholders in a consistent manner that does not confuse them or risk the NPPO's credibility.

Consistent messaging, the coordination of efforts and collaboration with relevant stakeholders promotes effective communication, which includes:

- ◆ enhanced understanding of the situation
- ◆ feedback about the stakeholders' concerns
- ◆ development of NPPO capacity to communicate effectively and credibly.

Involving stakeholders in the issue promotes transparency in decision-making processes and the associated activities necessary to manage the pest risk. This helps build trust in the NPPO and greater willingness of stakeholders to accept future messages and cooperate accordingly.

Box 18: Establishing agreements to reach wider audiences to address pest risk – New Zealand Government Industry Agreements

In New Zealand, the Ministry for Primary Industries (MPI) as the NPPO and stakeholders in the primary industries work in partnership under the Government Industry Agreement (GIA) for Biosecurity Readiness and Response to manage pests that could badly damage New Zealand's primary industries, economy and environment.

The GIA has been in place since 2014 and now includes signatories from the majority of the primary industry sector in New Zealand. The Deed outlines sharing of decision making, responsibilities, and costs of preparing for, and responding to, biosecurity incursions.

Deed signatories negotiate and agree on the priority pests of most concern to them and the actions needed to minimize the risk and impact of an incursion or to prepare for and manage a response in the event that an incursion occurs.

In the horticulture sector, there are currently operational agreements between multiple signatories for the priority pests, including the brown marmorated stink bug (BMSB – *Halyomorpha halys*) and economically significant fruit fly species. For each pest-specific operational agreement, a Council of signatories oversees the readiness and response work programme. Additionally, some signatories have a sector-specific operational agreement for specific pests for their crop.

The GIA has provided an opportunity for MPI and industry to work in partnership to achieve better biosecurity outcomes.

Box 19: Mobile application to support pest surveillance (technology) – An example from Italy

In Italy, the Lombardy Plant Protection Service believes it to be useful and of strategic importance to involve residents and professionals in a system of pest prevention and rapid alert. A mobile application for smartphones and tablets has therefore been devised. The app's objectives are to:

- ♦ provide sector operators, amateur biologists and amateur entomologists with a tool that either confirms or excludes, simply and quickly, the presence of the most important quarantine pests
- ♦ signal via geolocation the suspected presence of the quarantine pest identified by the Plant Protection Service as the most dangerous and for which a specific surveillance plan is underway
- ♦ receive information about quarantine pests that threaten biodiversity and food security the world over.

The pests chosen for the first version of the app are:

<i>Agrius planipennis</i>	<i>Halyomorpha halys</i>
<i>Anoplophora chinensis</i>	<i>Pomacea</i> spp.
<i>Anoplophora glabripennis</i>	<i>Popillia japonica</i>
<i>Aromia bungii</i>	<i>Rhynchophorus ferrugineus</i>
<i>Erwinia amylovora</i>	<i>Xylella fastidiosa</i>

For each pest, users can access an informative summary and view images, videos and distribution maps, if its presence in Lombardy has been confirmed. In special situations, users are invited to participate in territorial surveillance and to notify the Plant Protection Service by filling out and sending a simple text message and attaching one or more photographs of the pest or pest symptoms. The application allows the user to send reports only from places where the presence of the pest has not yet been ascertained, because for each organism the geolocation system either blocks or consents this function. For example, if a user sees a specimen of *Popillia japonica* inside the infested area, in one of the townships in the provinces of Milan or Varese, the app will block the alert function, while if the same insect is found in a township where it has not yet been seen, the alert function will send an email to the Plant Protection Service. All alerts received will be verified by the phytosanitary inspectors. Alerts will always be blocked for harmful organisms that have already spread throughout Lombardy such as *Halyomorpha halys*, but for pests such as *Xylella fastidiosa*, which has never been found in Lombardy and whose symptoms can be easily confused with symptoms caused by other biotic and abiotic factors, the app will not block the alert.

The reporting system covers only Lombardy but all users, even those located outside the Lombardy region, can use the app to access information on pests and receive world news.

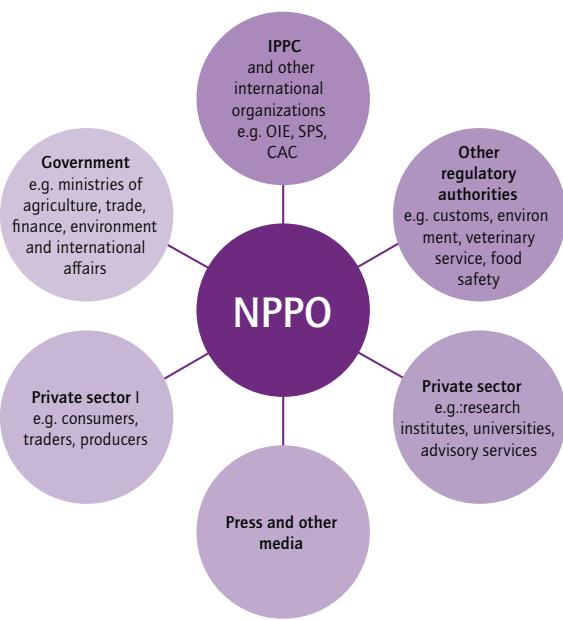
The app, named FitoDetective is available for free for the most common operating systems for smartphones and tablets.

4.2 ESTABLISHING RELATIONSHIPS WITH STAKEHOLDERS

Plant health pest risk management, which includes the development and implementation of phytosanitary policies and activities, is an important part of public governance and administration. It relies on the full engagement of the trading partners, relevant international organizations and domestically the private sector and the general public (Figure 4.). In pest risk management, the different categories of stakeholder relations for an NPPO can include:

- ♦ coordination of plant health policy and legislation

- ♦ coordination and cooperation in the establishment of specific plant health programmes or systems
- ♦ stakeholder involvement in market access activities
- ♦ stakeholder involvement in emergency plant health situations (e.g. incursion responses)
- ♦ national coordination of international and regional activities and liaison with international stakeholders.

Figure 4: NPPO stakeholders

Source: FAO (2015). Abbreviations: CAC, Codex Alimentarius Commission; OIE, World Organization for Animal Health; SPS, World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures.

There are numerous ways to interact and communicate with stakeholders to establish and maintain relationships. The intention is to encourage the establishment and development of partnerships and to promote coordination among non-regulatory plant health public sector stakeholders, such as government ministries and departments for agriculture, trade, standards and the environment.

Working effectively with stakeholders to coordinate pest risk communication requires strong relationships. Establishing relationships and maintaining them as part of routine business practices makes coordination and collaboration easier when pest risk needs to be addressed and is particularly important in a crisis situation. The details of a relationship may be outlined in a communication strategy or plan, or a specific agreement between two groups.

Elements of a communication or stakeholder engagement plan may include:

- ◆ Establishing and maintaining contact lists to ensure stakeholders can be engaged quickly and information is shared with appropriate group representatives

- ◆ Agreeing on information sharing frequency, type and communication channel
- ◆ Arrangements for stakeholder meetings to regularly exchange information, seek feedback and strengthen relationships
- ◆ Protocols for dealing with emergency situations and responsibilities for disseminating information to wider communication networks
- ◆ Planning ahead for monitoring and evaluation to review the effectiveness of pest risk communication

4.3 DEALING WITH UNCERTAINTY

Pest risks and issues can develop quickly and often involve having uncertain or incomplete information. Therefore, communicating in a timely manner is essential for effective pest risk communication, which will also require the inclusion of aspects about uncertainty.

ISPM 2 (*Framework for pest risk analysis*) provides guidance on pest risk uncertainty within the context of PRA, and describes how the concept is applicable across risk communication in general (see Box 20).

Box 20: Dealing with uncertainty in PRA (from ISPM 2)

"Uncertainty is a component of risk and therefore important to recognize and document when performing PRAs. Sources of uncertainty with a particular PRA may include missing, incomplete, inconsistent or conflicting data; natural variability of biological systems; subjectivity of analysis; and sampling randomness. Symptoms of uncertain causes and origin and asymptomatic carriers of pests may pose particular challenges.

The nature and degree of uncertainty in the analysis should be documented and communicated, and the use of expert judgement indicated. If adding or strengthening of phytosanitary measures are recommended to compensate for uncertainty, this should be recorded. Documentation of uncertainty contributes to transparency and may also be used for identifying research needs or priorities.

As uncertainty is an inherent part of PRA, it is appropriate to monitor the phytosanitary situation resulting from the regulation based on any particular PRA and to re-evaluate previous decisions."

NPPOs may be reluctant to communicate information about a pest risk until uncertainty has been resolved. Some reasons for delaying communication include concerns that uncertainty can:

- ◆ reduce credibility and confidence in the NPPO
- ◆ create the perception that control over the situation has been lost
- ◆ increase the level of concern among stakeholders
- ◆ result in negative economic impacts

However, communicating about uncertainty directly relates to the principles of effective pest risk communication (as described in Chapter 2). It establishes trust with stakeholders and demonstrates leadership and integrity. Communicating in a timely manner even under conditions of uncertainty empowers stakeholders to take action to protect their interests, allowing them to take actions to manage negative consequences and impact, such as financial loss.

When communicating on uncertainty, the points in Box 21 should be taken into account.

Box 21: Helpful points and hints

When communicating about a plant health issue under conditions where risk information is associated with uncertainty, or where there are gaps in knowledge, it is important to:

- ◆ acknowledge areas of uncertainty
- ◆ describe the nature and magnitude of uncertainty
- ◆ communicate about what is being done to reduce or manage uncertainty
- ◆ communicate the implications of remaining uncertainty
- ◆ provide advice about what stakeholders and the general public can do to minimize the pest risk
- ◆ if, owing to uncertainties, there may be more than one expected outcome, indicate the relative likelihood of each.

In addition, it is important to:

- ◆ acknowledge that early messages may change as further information is gathered and verified
- ◆ release and discuss more complete information when it becomes available, together with its implications and any revised course of action.

Pest risk and issues that have potential for negative economic impact or other consequences need to be communicated to stakeholders; however, knowing what and when to communicate can be

difficult. Decision-making tools are often useful, such as the tool developed by the FAO which has been adapted for plant health and provided in Box 22.

Box 22: Communicating early: an aid to decision making

In an emergency, there is often debate on what information to release and when to release it. Risk communication requires transparency and early announcements to establish and maintain stakeholder trust, even when complete scientific information is unavailable.

What to communicate and when?

In deciding whether or not to recommend the release of risk information, officials can ask several questions to help guide decision making:

- ◆ Is the information needed by those who are at risk to avoid negative impact, reduce the spread of a pest or to protect their interests from the risk or issue?
 - ◆ If YES, the information should be communicated in a timely, accessible and proactive manner.
- ◆ Would release of the information help to promote trust with stakeholders by:
 - providing further context for the situation?
 - giving details of the basis for decision making to date?
 - acknowledging uncertainty?
 - indicating what could happen next, to encourage preparation for any necessary actions?
- ◆ If YES to one or more, the information should be communicated in a timely, accessible and proactive manner.
- ◆ Is there a valid reason to consider not releasing risk information? For example:
 - release of the information could compromise national security or an ongoing investigation
 - release of the information could violate privacy laws or confidentiality policies
 - release of the information could expose the organization to legal risk.
- ◆ If YES, the risk information may be justifiably not released; however, in all such cases informing those at risk must take priority.

This decision tool could be used during an outbreak of a new pest. The decision as to when to communicate could have a significant impact on the spread of the pest and the severity of the outbreak. It may take

time from the first detection to receive identification from a diagnostic laboratory, during which time the pest may spread further.

The opportunity to protect stakeholders from negative impacts may be missed if the decision is taken to wait for laboratory confirmation of the specimen. It is much better to communicate early about the possibility of the outbreak, acknowledge it is under investigation and provide stakeholders with the information necessary to protect their interests.

4.4 MESSAGE DEVELOPMENT

When developing the message, it is important to summarize the issues that need to be communicated. The following steps can be useful in developing messages:

1. Identify specific concerns.
2. Analyze the concerns to identify recurring themes and general concepts to be considered.
3. Develop key messages for those concerns (both general and specific) that need to be considered.
4. For each key message, identify facts and the information to support them.
5. Test messages with the participation of the target audience or audiences to whom they are directed.
6. Plan for the delivery of messages (including identifying suitable dissemination channels for target audiences).

Care should be taken to ensure scientific information is not misunderstood. This is done by using language that is appropriate for the audience to understand and adopting a user-friendly manner (see Box 23).

A well-targeted message for the general public should use non-technical language. Stakeholders and the general public will usually be interested in specific information on the nature, form and severity of the risk and what actions they can take to manage any negative impact. It is therefore important to include actions people can take to reduce or manage risk.

Messages should be STARC – Simple, Timely (up to date), Accurate, Repeated and Consistent.

When possible, messages should be tested with target audiences in advance to validate relevance and understanding in order to avoid unintended consequences of messages such as those discussed in section 4.3 in relation to uncertainty, which also apply to misinterpretation.

Box 23: Terms that have different meanings for scientists and the public

Scientific term	Public meaning	Better choice
Abstract	Intangible or Vague	Summary
Confidence	Certainty	Within an acceptable range
Estimate	Guess	Extrapolate from available information
Manipulation (of data)	Illicit tampering	Scientific data processing
Positive trend	Good trend	Upward trend
Scheme	Devious plot	Systematic plan
Sensitivity	Delicate	Accuracy of measurement
Theory	Speculation	Scientific understanding
Values	Ethics, monetary value	Numbers, quantity

Box 24: Template for a risk communication message

- ◆ Description of the risk and its context
- ◆ The advice to stakeholders (target audience)
- ◆ Quote (from a reputable authority or trusted source) reiterating the advice
- ◆ Explain what is being done to reduce or manage the risk
- ◆ Additional relevant information

Using visual aids when developing messages can help capture target audiences' attention or explain facts that would be difficult to communicate in words. Visuals can include diagrams, illustrations, maps or graphs. Generally, messages should be supported with:

- ◆ simple graphical representations (bar or pie charts)
- ◆ case studies that illustrate key message points that your target audience identifies with
- ◆ images that depict the nature of the risk

- ◆ recommendations from regulatory authorities (e.g. NPPO)
- ◆ best practice information.

All information provided in the message should be referenced to the source of evidence to increase credibility of the message.

4.5 CHOOSING COMMUNICATION CHANNELS, TOOLS AND METHODS

There are several types of communication channels, tools and methods that can be used to deliver the message to the target audiences (see 3.4.2). The selection of different communication channels depends on:

- ◆ the specific objectives of the risk communication
- ◆ the content or nature of the message (e.g. the urgency)
- ◆ accessibility and use by the target audience
- ◆ expectation for feedback and questions.

Box 25: Engaging stakeholders through a code of conduct on invasive aquatic plants in the Netherlands

Since the beginning of the twenty-first century, water authorities in the Netherlands have been facing increased management costs. At the same time importers, producers and retailers have been promoting the use of aquatic plants in private gardens. Some aquatic plants can be invasive alien species. In order to stem the flow of invasive alien aquatic plants threatening biodiversity and adding to management costs, trade restrictions had to be set in place.

A first approach to stem the negative impact of non-native aquatic plants was initiated in 2010 with the signing of a voluntary code of conduct, banning certain plant species. The initiative has now been overruled by European Union regulation No. 1143/2014; nevertheless, interesting lessons were learnt from the experience.

For the code of conduct to be successful it was essential that all major stakeholders were in agreement, to make sure there would not be a market in the Netherlands for the species that were to be banned. The Ministry of Economic Affairs initiated negotiations between trade associations of garden centres, pet stores and plant nurseries and the Netherlands Association of Regional Water Authorities. The commercial organizations had an interest in being involved in the code of conduct as they could integrate social and environmental concerns in their business operations and show that they were taking corporate social responsibility. The role of the NPPO was to provide objective information on risks associated with the invasive alien plants mentioned in the code of conduct.

In 2010, the code of conduct was signed, banning six species. These were referred to as Annex 1 species. The Code also included an explicit obligation to properly label some other species and to warn customers to dispose of any excess plants wisely. These were referred to as Annex 2 species.

The various stakeholders each had a task in the code of conduct. Water authorities had to provide data on the distribution and costs involved with the management of the various alien aquatic plants. The major task for importers, producers and retail organizations was to not produce and sell Annex 1 species and to communicate the risks of Annex 2 species.

Conformity with the code of conduct was monitored annually by the NPPO. After the code of conduct came into effect, the NPPO rarely found Annex 1 species on sale. Although there was very high conformity in terms of not selling Annex 1 species, public outreach and communication between signatories to the code of conduct could have been more effective. At the launch of the code of conduct a mixture of field guides, posters and brochures were available; information on the risks presented by Annex 1 and 2 species were available from the NPPO and in the periodicals of some signatories to the Code. Raising public awareness requires a long-term commitment of all signatories and an appropriate budget.

For example, websites are a good platform to communicate to a wide audience where feedback is not the priority. Websites do not engage the target audience and allow them to provide feedback, unless a specific function allows for this, such as online consultations of the general public. Similarly, communicating the message through the new media is usually the most rapid way of disseminating information. However, there can be a loss of control over the message as journalists can reinterpret risk information for their audiences.

Depending on the pest risk or issue to be communicated, a single channel of communication may be inadequate to deliver the message to all target audiences or to achieve the risk communication objectives. It may be appropriate to combine several methods and use multiple channels of risk communication.

Box 26: IPPC communications (e.g. news, social media)

The IPPC Secretariat communicates a wide range of news articles to ensure that contracting parties are kept up to date on global, regional and national pest risks and issues. [IPPC news](#) provides an overview of plant health activities taking place, including meetings, updates on globally significant pest risks and work undertaken by the Secretariat in standard setting, capacity development and implementation, and communication and partnerships. The IPPC Secretariat uploads news articles on the [International Phytosanitary Portal](#) (IPP), on Facebook and on Twitter. When seeking feedback on plant health issues, notifications are sent to designated contact points of contracting parties to disseminate information.

Box 27: Using road signs to raise and maintain awareness of plant pests



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An ongoing campaign to prevent the spread of plant pests via road networks, or to alert the public when they enter a regulated area, could involve the use of traffic signs, posters and notices by the roadside. Such signs draw attention to road users that pests could be spread as hitch-hikers on vehicles or with plants and plant products carried in vehicles. Examples of road signs and posters are shown in Box 27.

4.6 INTERACTING WITH THE MEDIA

Interacting with the media (television, radio, newspapers) is often necessary to communicate pest risk messages. When interacting with the media, it is important to consider different aspects of public perception and to manage perceptions of risk versus actual risk. Key factors to consider include:

- ◆ transparency
- ◆ use of accurate information and facts
- ◆ accountability (to avoid inappropriate blame)
- ◆ competing interests
- ◆ impact on stakeholders and the public
- ◆ high profile issues.

Preparing for these interactions will help NPPOs work effectively with the media when plant health issues arise. Practices for preparing for media interactions include:

- ◆ identifying, building and maintaining relationships with journalists who regularly cover plant health issues to reach target audiences
- ◆ providing press materials under embargo to build relations with journalists, bearing in mind that it requires a high degree of trust to avoid the news emerging ahead of schedule
- ◆ identifying and training spokespersons who can interact with the media, remembering that using appropriate communication skills is more important than conveying technical information (using plain language and ensuring that messaging is concise are two key factors to remember)

- ◆ preparing and having available background materials for the media about common plant health issues and how the NPPO works with others to respond to risk
- ◆ working with key stakeholders to plan how to coordinate shared messaging in the event of pest risks to ensure the interests of stakeholders are met.

When plant health issues need to be communicated, the following practices will increase the effectiveness of the media approach:

- ◆ being proactive with messaging, in a timely manner, to be ahead of others who may choose to comment on an issue or situation who do not have first-hand knowledge or information
- ◆ identifying and targeting media that serve target audiences, and tailoring suitable messages for them
- ◆ coordinating media responses with key stakeholders whenever possible
- ◆ considering different communication channels for reaching different stakeholder groups (e.g. news coverage, conferences or meetings, teleconferences, press releases, webcasts, online content, social media)
- ◆ monitoring coverage and correcting errors as necessary, to help ensure misinformation is not repeated.

Evaluating media interactions after a plant health issue has been addressed will provide useful insights for future interactions. This may include:

- ◆ reviewing and analysing the media coverage of the plant health issue to measure the effectiveness of the media approach
- ◆ working with key stakeholders to refine coordination, based on lessons learned
- ◆ engaging journalists for feedback on the media approach.

Box 28: Japanese knotweed and public risk communication in the United Kingdom of Great Britain and Northern Ireland, and beyond

Japanese knotweed has been a good example of communicating about invasive species, and many lessons have been learnt along the way. Since its arrival in the early nineteenth century in Europe and North America, Japanese knotweed (*Fallopia japonica*) has become one of the most feared weeds, but nowhere has its notoriety been greater than in the United Kingdom of Great Britain and Northern Ireland. There, its impact on infrastructures has generated, often sensationalist, news articles over the last 20 years which have in turn raised awareness of the problem and fed more stories. Part of this was due to promotional efforts by CABI and partners with reference to the potential biocontrol of this invasive alien plant in the 1990s. A major step was the establishment of the Japanese Knotweed Alliance website in 2000, which was designed as a very thorough resource for information on the plant as well as its biocontrol and had an extensive "Frequently Asked Questions" section. This website was regularly updated and as a result appeared on the first page of a Google search for Japanese knotweed for over 15 years despite an almost 500-fold increase in the number of websites online dedicated to this plant. This reference tool drove interest from journalists and soon the staff involved in the project became regular consultants to the media on the subject. It is worth noting, however, that in the archive of over 100 articles there is only one that is totally accurate, the rest have a varying amount of factual errors, despite the regular offer of proofreading content.

As interest grew and the calls for live interviews increased, the decision was made to pay for professional media training of staff likely to be interviewed and this gave improved capability to get the message across. The message in this case was a particularly difficult one as the proposal was to introduce what could be another "invasive species" in many people's eyes. Of the few thousand people that were informed about the relative safety of classical weed biocontrol directly, through a strategic public engagement effort, very few were unconvinced of the suitability of the approach and safety of the procedures. However, most people would only have read or heard items from the media which often contained cautionary tales from the distant past, so many remained cautious and concerned, even though the alternative – doing nothing – is not a low risk approach when it comes to invasive alien species.

Now knotweed is synonymous with invasive species, and the issues associated with any new invader, irrespective of taxon, is understood if they are described as "the next Japanese knotweed". In that respect the plant has been a good role model for risk communication, but lessons have been learnt along the way regarding how to engage with, and what to expect from, journalists, the media and the general public.

4.7 SOCIAL MEDIA

Technologies and tools such as the Internet, social media, smart phones and other mobile devices now facilitate communication from almost anywhere in the world and allow people to access information 24 hours a day. Social media are rapidly changing how people communicate with one another. The implications for NPPOs and other organizations communicating about pest risks are significant because many stakeholders now expect information to be accessed easily and instantaneously. To address such expectations, risk communicators can adopt more open, transparent and informal styles of communication which provide information more quickly using social media.

In its broadest sense, social media are electronic tools, technologies, and applications that facilitate interactive communication and content exchange. A characteristic of social media is that they allow users to be both author (i.e. the sender or transmitter of information) and audience (i.e. the receiver of information). Users of social media find content and information they are interested in, and then comment on it or share it with other people in their social network. There are many types of social media platforms. Box 29 lists some broad categories of social media tools and describes how they are typically used.

Box 29: Social media tools

Tool	Description
Blogs	Short for "weblog", blogs are a type of website that is updated frequently; written in a conversational tone and contain regular entries of commentary, descriptions of events, or other material
Image or video sharing sites (e.g. Flickr, YouTube)	User-generated sites that allow people to upload pictures and videos and to view and comment on the uploaded content of others
Instant messaging	Form of communication over the Internet, or other types of networks, that offers quick transmission of text-based messages from sender to receiver; more advanced instant messaging allows enhanced modes of communication, such as live voice or video calling, video chat and inclusion of hyperlinks to media
Internet forums	Also called message boards; online discussion sites in which users can discuss issues, exchange information and share views
Microblogs (e.g. Twitter, Plurk, Tumblr)	Form of blogging that allows users to write brief text updates (usually 140 characters or less) and to publish them so that their network can view and comment on them
Mobile text messaging	Short text messages exchanged between mobile devices
Mobile websites	Websites geared for mobile devices
Podcasts	Web-based audio or video content made available on the Internet for downloading to a personal audio player
RSS feeds	Short for "real simple syndication", a file that contains frequently updated information (such as news headlines or blog posts) that can be subscribed to using programs called feed readers or aggregators
Social bookmarking (e.g. Delicious, Digg)	Sites in which a virtual community exchanges links to content and stores links for future use
Social networking sites (e.g. Facebook, LinkedIn, GovLoop, Pinterest)	Online communities that allow users to connect, interact, and exchange information with those who share interests, activities, backgrounds, or real-life connections.
Virtual worlds (e.g. Second Life, IMVU, Whyville)	A computer-based, simulated environment in which users interact with each other via virtual representations of themselves called avatars
Widgets	Pieces of self-contained code (a small application) that can be embedded into a website or program to perform a specific function
Wikis	Collaborative webpages or a collection of webpages that allow all users to contribute or modify content

Social media can speed up communication and hence speed up awareness. Through the use of social media, organizations such as NPPOs have the ability to gather data about what is happening and thus social media can be effective tools for monitoring public discourse. For example, by allowing stakeholders to comment on posted information, risk managers can better understand stakeholder's perceptions about risk and identify emerging difficulties. By providing data in a social-media-friendly format, NPPOs can expand their information networks by identifying who is using their data on various blogs, wikis or Twitter feeds.

However, the immediacy of social media presents challenges to NPPOs in terms of their ability to control a message, especially during an emergency or when issues are particularly emotional or controversial. In the social media environment, it is important for risk practitioners to understand that, whereas in the past they may have been seen by the public as the authoritative source on a particular risk, now they are likely to only be considered part of a broader conversation. Therefore, to be effective, NPPOs should recognize that collaborating with the public and partnering with social networks requires ceding control of messages that are now subject to unprecedented levels of public scrutiny.

Social media present an opportunity for NPPOs to communicate relatively easily. As long as the target audience has access to the social media being used, social media allow messages and information to be quickly, efficiently and economically disseminated to stakeholders. But it is important to understand that stakeholders have very high and specific expectations when it comes to communication through social media. As with more conventional methods of communication, it is important to choose very carefully the platforms that will be used to communicate. Recognizing that there are very many social media applications (Box 29), even the most well-funded risk communication campaign cannot participate in them all, especially as being "active" is a key requirement of success. Choosing the right medium for any given purpose depends on the target group to be reached and the message to be communicated. Each social media application attracts a certain type of stakeholder group, and NPPOs should be active wherever their stakeholders are present.

Before entering any application, it is a good idea to take some time to discover it and learn about its history

and basic rules. It is important for an NPPO to learn how to monitor social media before they attempt to create an account, and only after they have gained the necessary understanding should they start to participate.

4.7.1 Advice on using social media

- ◆ Search for terms in your area of interest to find people to follow who are "posting", "tweeting", commenting, or otherwise communicating about this area of interest
- ◆ Read what they have written, and what other people have commented about what was said, for hints on how and what people are responding to.
- ◆ Recognize that the basic idea behind social media is that it's all about participation, sharing and collaboration, rather than pushing a message
- ◆ Use multiple social media applications to reach the greatest number of stakeholders
- ◆ As with other forms of risk communication, consistent messaging is vital so NPPOs should ensure that contributions across social media applications are aligned
- ◆ People use social media because they want to; they are not being forced into a social media environment. To this end, you should be "active" on whatever social media applications you choose to be a part of
- ◆ People generally use social media to find the most recent information. To maintain a following, frequent contributions are required. If your last communication is two or more months old you will have lost some of your audience
- ◆ It is important to be as interesting as possible to maintain followers
- ◆ Keep your messages concise and to the point
- ◆ Find creative ways to get stakeholders interested and involved
- ◆ Social media are informal environments. If your messages are rigid and overly technical, you will lose followers
- ◆ Always be honest. Because of the great speed in which things can be shared, it is essential that your messages represent the best information you have. If you lose credibility, you will lose followers

When using social media, the most important point is to use the media platform that the stakeholders use. Listen in on their concerns, needs and interests. And then contribute where it adds value.

Box 30: Using social media to communicate about the risk of specific pests

Use of social media is often a fast and effective way to communicate about risk to a wide range of users who access online networks. Facebook and LinkedIn have been used by governments and industry to communicate about the risk of specific pests and alert stakeholders of changes in risk situations. In November 2017, the New South Wales Department of Primary Industries in Australia was notified of the detection of a significant aggregation of live brown marmorated stink bug (BMSB) in containers that had been imported from Italy. The alert focused on providing members of the public with information about BMSB and asking them to be vigilant and report any suspected detections. This wide-reaching communication method reaches many audiences, with short key messaging focusing on high-risk plant health issues.



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The New Zealand Ministry for Primary Industries (MPI) is also very active on social media to communicate information on high-priority biosecurity risks. Like Australia, MPI actively communicates about the risk of BMSB. One such campaign highlighted the social nuisance aspect of BMSB, depicted in the adjacent image that has been circulated on social media.

Box 31: A multimedia campaign raising awareness of *Anoplophora* spp. in Italy

Anoplophora chinensis and *A. glabripennis* are cerambycid beetles accidentally introduced into Italy where they are quarantine pests feeding on a range of deciduous trees. To increase public awareness, and trigger appropriate reactions from the public when they find the beetles or when they observe symptoms on trees, a public information campaign was put in place using various media. For example, leaflets were distributed, and posters were put up in railway stations, on trains to Malpensa airport and inside Italian airports. Public meetings were organized, press articles were released in newspapers and magazines, and radio and TV shows were broadcast. Short films were placed on the Internet (<https://www.youtube.com/watch?v=s8vbTYnX84w>) and expert articles were published in scientific journals.

4.8 COMMUNICATING INFORMATION ABOUT PEST RISK TO INTERNATIONAL STAKEHOLDERS

Communicating with international stakeholders when plant health issues arise can have multiple benefits and promotes trust. When emergencies arise, engaging with other countries provides an opportunity to discuss issues and decide upon the best approach to take for risk assessment and implementation of management actions. This allows countries to combine resources, share expertise and support each other when alone a country may not have the capacity to manage a plant health issue.

Many countries are members of international agreements that require cooperation among nations to achieve global, regional and national goals. In plant health, the IPPC provides the platform for

countries to "secure cooperation among member nations in protecting global plant resources from the spread and introduction of pests of plants, in order to preserve food security, biodiversity and to facilitate trade". Under the IPPC, contracting parties are obliged to fulfil national reporting obligations (NROs), communicating on various aspects outlined in the Convention to promote transparency in the establishment and management of their national phytosanitary systems. This is often useful information outlining the risk status of countries.

Box 32: National reporting obligations provide information to IPPC contracting parties

A fundamental aim of the IPPC is that contracting parties cooperate with each other to prevent pest risks, specifically the spread of pests. To assist contracting parties in sharing information and to promote transparency, the Convention identifies specific [national reporting obligations](#) (NROs) that help achieve the protection of global plant resources from pests. The reason for having NROs is to ensure that a minimum amount of official plant health information is available that can be used as the basis for ensuring safe trade, safeguarding food security and protecting the environment from plant pests. To be most useful, the communication of plant health information should be accurate, up to date, clearly presented, consistent with IPPC guidance and in a format that is easily accessible and understandable by other contracting parties.

To ensure plant issues can be discussed at an international forum on a regular basis, the IPPC Commission on Phytosanitary Measures (CPM) brings together contracting parties annually. The CPM provides contracting parties with an opportunity to discuss plant health issues and receives updates from the IPPC Secretariat and considers the adoption of ISPMs. In addition to the standing agenda of the plenary sessions, a range of side sessions are organized to cover topics of interest to contracting parties, covering areas where capacity development and implementation support are necessary. Providing contracting parties with an opportunity to communicate risk issues at a global level allows key messages to be received internationally.

The IPPC Regional Workshops also provide an opportunity to discuss pest risks and other plant health issues annually. This provides a forum where contracting parties can discuss draft international standards under consultation, communicate national and regional pest risks and capacity development needs, and network.

4.9 MONITORING AND EVALUATION

Pest risk communication is an interactive process. It not only involves communication of a message to a target audience, but also measures the effectiveness of how the communication was received and its impact. Aspects to consider include determining if appropriate information has been communicated and ensuring that the message has been received and understood. This leads to increased confidence from stakeholders in decisions relating to the management of pest risk.

Developing a risk communication approach that includes research as well as stakeholder engagement is likely to increase its effectiveness. In addition, monitoring of risk communication and evaluation of communication efforts, both during and after implementation activities, allows for adjustments to be made as necessary. This ultimately demonstrates that pest risks are and have been addressed and provides valuable lessons learned for future risk communication efforts.

As pest risk can change quickly, especially during response activities, it is essential to have a comprehensive and systematic communication approach that involves ongoing monitoring and evaluation to ensure that communication is effective. In addition to monitoring for communication reaction, monitoring for unintended consequences, emerging questions, concerns, or misconceptions allows an organization to be adaptive for appropriate and timely responses. Effective monitoring and evaluation of risk communication will not only inform the what, how and with whom an NPPO needs to communicate on plant health issues, but also provide some valuable insight into how the risk itself may be managed. Box 33 lists types of questions to ask and some methods that can be used when monitoring and evaluating risk communication.

Box 33: Monitoring and evaluating risk communication

Monitoring and evaluating risk communication during and after an event is essential to ensure that communication has been effective. NPPOs must commit to doing monitoring and evaluation and invest resources accordingly.

Types of questions to ask when monitoring pest risk communication:

- ◆ Are stakeholders receiving the messages?
- ◆ Are stakeholders responding to messages?
- ◆ What are stakeholders communicating about pest risk?
- ◆ Is there a change in stakeholders' risk perception?
- ◆ How many media outlets cover the NPPO's messages, how frequently, and how many people do those media outlets reach?

Types of questions to ask when evaluating pest risk communication efforts:

- ◆ Have the communication needs of the stakeholders changed?
- ◆ Do the messages need to be adjusted?
- ◆ Are different communication channels needed?
- ◆ Were, or are, stakeholders included in the development and disseminations of messages?
- ◆ Are the media reporting the NPPO's messages accurately?
- ◆ Are the media being used effectively?
- ◆ Is progress being made towards the communication goals?

There are many ways to monitor risk communication and evaluate the effectiveness of risk communication messages and approaches, including those listed below.

- ◆ Stakeholder dialogue: Consulting with stakeholders before and after a pest risk has been addressed, to learn what works and what doesn't, to adjust the approach and to learn lessons for future risk communication.
- ◆ Monitoring social media: Monitoring social media channels regularly to identify emerging questions and concerns among public and target audiences. This information will help adjust approaches and messages accordingly.
- ◆ Media monitoring and analysis: Reviewing and analysing media coverage of risk to adjust approaches and messages as plant health issues evolve and to evaluate the overall effectiveness of approaches and messages after the issue has been addressed. Includes reviewing and analysing accuracy of messages covered.
- ◆ Internet analysis: Tracking how the NPPO's materials are used online (e.g. number viewed, downloaded, shared) and reviewing comments from users, in order to adjust communication approach and materials as the plant health issue evolves and after it has been resolved.
- ◆ Targeted surveys: Tracking the opinions of stakeholders over time to identify who, and estimate how many, people received, understood and accepted key messages. This kind of evaluation can be done to provide insight into what communication methods were most appropriate and effective for stakeholders. This evaluation can be outsourced to public opinion firms.
- ◆ Update risk assessment: Tracking the actual risk, magnitude of an outbreak, number of detections, eradication or containment area, and economic impact, to determine if the risk is being managed and therefore whether the communication efforts are having a positive effect.

4.10 CONTINGENCY PLANNING

Contingency planning is the process through which plans are developed to set out how an organization or organizations will respond to a potential serious threat. In plant health terms, this is likely to be an outbreak of a quarantine pest. An NPPO can benefit from strategic level plans developed at a national level describing the overall aim and high-level objectives to be achieved following the discovery of an outbreak of a quarantine pest posing a serious or significant threat. The purpose of a plant health contingency plan is to ensure a rapid and effective response to an outbreak

by setting out in plain language what must be done when a plant pest posing a serious threat is detected. A contingency plan should note which organizations are to be involved, although this may vary according to the specific circumstances. The plan will describe the command structure for outbreak management and identify precise roles for individuals involved in managing the situation, including a communications officer. A contingency plan should note why action is being taken. This will help with consistent messaging during any implementation of the plan.

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Appendix 1: Checklist for communicating about pest risks

- Are the objectives clear and with realistic deliverables?
- Do they describe why, where, what, when and how?
- If there is a slogan, is it short and simple?
- Were all groups identified in the stakeholder analysis? (Were messages and draft materials tested with focus groups?)
- Are the key messages clear, short and concise?
- Have the messages been tailored to each audience?
- Are a range of communication channels and materials being planned? (Are partnerships to be used in production and distribution?)
- Does the campaign involve active participation?
- Are monitoring and evaluation planned throughout the lifespan of the campaign?
- When will the campaign end? What plans are there for a report to learn lessons from the campaign?

Appendix 2: Supplementary Material

The tools in this appendix are examples of how to assess risk communication capacity and risk perception. Advice on accessible writing is also provided. The material has been adapted for plant health and pest risk from tools used by Health Canada and the Public Health Agency of Canada. It is applicable and adaptable to other countries. The tools should be used as general guidelines.

APPENDIX 2.1: RAPID ASSESSMENT OF RISK COMMUNICATION CAPACITY

The purpose of this tool is to help organizations to identify areas that represent ongoing challenges for risk communication. The identification of gaps in the capability to carry out different communication activities is discussed in Chapters 1, 3 and 4.

Risk communication rapid assessment

The following rapid assessment tool is based on the risk communication requirements of the World Health Organization's International Health Regulations. It is intended to help you to identify areas that represent ongoing challenges in your organization

and to facilitate discussion with other workshop participants on how capabilities could be improved.

Please note: Your responses are unofficial, and only for personal use

Instructions: For each required ability, assign a number from 1 to 10 based on your experience and opinion. On this scale, "1" is weak and "10" is strong. For example: "3, we could probably do this but there's nothing written down or formalized"; or "8, we do this well most of the time, the required systems and processes are in place and have been tried and tested".

1. Transparency and first announcement of a real or potential risk:

The management of information related to a plant health emergency, including the first announcement warning stakeholders of a potential risk and ongoing transparency of decision making, helps to ensure that those at real or potential risk can protect themselves and that trust among the authorities and stakeholders is maintained and strengthened.

The following abilities ensure the success of this component:	National capacity (1 to 10)
1. The ability to approve rapidly, for public distribution, warnings and advisories in the event of a real or potential pest risk.	
2. The ability to issue warnings or advisories of a real or potential risk during non-business hours, for example evenings and holidays, and to ensure that hard-to-reach and minority populations are informed of warnings or advisories through translated and tailored materials.	
3. The ability to adhere to decision-making principles – enshrined in a regulation, policy or formal guideline – on the timely public release of information associated with a real or potential pest risk.	
4. The ability to ensure that decision making and actions related to transparency are evaluated after the event against agreed principles.	

2. Public communication coordination:

The cross-jurisdictional nature of plant health emergencies demands that NPPOs be able to engage effectively and coordinate public communication with other involved organizations, including designating the roles and responsibilities of lead and supporting agencies. This capacity helps take advantage of available public communication resources, allows co-ordinated messaging, to reduce the possibility of confusion and overlap, and strengthens the reach and influence of the advice provided.

The following abilities ensure the success of this component:	National capacity (rate 1 to 10)
1. The ability to identify public communication focal points among likely plant health emergency partner organizations, including their likely roles and responsibilities.	
2. The ability to establish a formalized communication coordination structure among plant health emergency partner organizations.	
3. The ability to share public communication messages and strategies during a serious plant health event among partner organizations and institutions, with the endorsement of the emergency management team.	
4. The ability to access emergency risk communication capacity among plant health emergency partners, including such key elements as translation ability and distribution through external communication networks.	
5. The ability to engage community networks that can access distinct language and cultural groups.	

3. Information dissemination, including media relations:

The time pressure associated with emergencies, high demand for information and the crucial role of advice and warning to minimize a threat make the rapid and effective dissemination of information crucial during serious plant health events. Mass media relations remain a pillar of effective information sharing; however, it is increasingly important to access other information sources trusted by the stakeholder group at risk, including new media channels, existing information-sharing networks and non-traditional media.

The following abilities ensure the success of this component	National capacity (1 to 10)
1. The ability to ensure that appropriate spokespersons are available to speak to journalists during plant health emergencies.	
2. The ability to respond effectively to the demands of media through protocols to manage high information demand, the volume of media queries and the frequency of media briefings.	
3. The ability to access efficiently and effectively other dissemination channels including the Internet, short message service (SMS), telephone helplines, social media, email listservs, formal and informal partner networks, village criers and public address systems.	
4. The ability to conduct rapid assessments of target audiences among stakeholder groups at risk and quickly reach vulnerable, "hard-to-reach", disadvantaged or minority groups with accessible and relevant emergency information tailored for language use, literacy rate and socio-economic conditions.	
5. The ability to ensure that basic information, education and communication materials and messages on common emergency response elements, such as disinfecting tools and machinery, and disposal or destruction of plants, have been developed and translated into appropriate languages.	

4. Listening through dialogue:

Listening to those affected and involved, in an organized, purposeful manner, is crucial to ensuring that communication efforts are effective and support sound emergency management decision making. Understanding community perceptions of risk, and then acting upon that understanding by adapting communication messages, materials and strategies, demands a meaningful engagement with those affected and involved.

The following abilities ensure the success of this component	National capacity (1 to 10)
1. The ability to gather and process the views and perceptions of individuals, partners and communities affected by a serious plant health event, as well as to adapt communication strategies as required.	
2. The ability to monitor traditional and non-traditional media, including the tracking of outstanding questions, information needs, points of confusion and circulating rumours.	
3. The ability to use simplified and emergency-specific information by gathering templates already in place to facilitate efficient dialogue during an event.	
4. The ability to reflect the findings of listening and evaluation processes back into emergency management decision making.	

APPENDIX 2.2: RISK PERCEPTION ASSESSMENT TOOL

This tool can be used to identify non-emergency situations that may require an emergency communication response because stakeholders have a high-risk perception of a particular issue, even if the actual impact is low. This topic is discussed in Chapters 1 and 3.

Risk perception assessment tool

Sometimes stakeholders have a high-risk perception of a particular issue, even if its actual risk is low. In these cases, maintaining trust with stakeholders may require a risk communication strategy as intense as those needed during an actual emergency. Identifying non-emergency situations that may require an emergency-like communication response is a difficult challenge. These questions are intended to guide a discussion.

1. Are there signs of a high level of interest in this issue among stakeholders?

- Have there been any media calls on this (or a related) issue?
- Has there been mass media coverage on this issue?
- If yes, what was the time frame and tone of the coverage?
- Has there been significant social media activity on this or any related issue?
- If yes, what was the time frame and tone of the discussion?
- Are advocacy groups or other NGOs communicating on this issue now, or have they done so in the recent past?
- If yes, what are they saying?

2. Are there signs of a likely high profile among stakeholders?

- Has this issue been addressed or discussed publicly in other countries?
- If yes, what was the time frame and tone of the activity and coverage?
- Is there evidence of a significant spike in stakeholders' enquiries on the issue?
- Is the risk linked to an upcoming significant event (e.g. a specific event or time of year)?
- Does the perceived risk affect many stakeholders or regions of the country?

3. Does the issue have any characteristics likely to heighten risk perception?

- Is the perceived risk thought to affect staple food crops or very valuable or significant plants?
- In the past, did the risk or a similar risk have a high profile?
- Does the origin of the perceived risk – be it a company or country – have existing low levels of stakeholder trust?
- Is the perceived risk specific to a group of already vulnerable stakeholders?

APPENDIX 2.3: ACCESSIBLE WRITING AND LOW LITERACY GUIDELINES

The purpose of the advice here is to help write powerful, short and focused messages to stakeholders, especially when seeking to motivate action. The advice is particularly relevant for stakeholders with low levels of literacy, which is discussed in Chapter 4.

Accessible writing and low literacy guidelines

Here are some simple guidelines to ensure that a message is accessible. The guidelines are especially useful when targeting stakeholders with low literacy levels:

- ◆ Give the most important information first. Engage the audience with the information they need to know, what actions they need to take and why it is important to them.
- ◆ Limit the number of messages. Focus on what the audience needs to know and to do.
- ◆ Focus on one idea at a time. Avoid jumping back and forth between different ideas.
- ◆ Try to use the active voice. Keep the focus on the subject of the sentence doing the action.
- ◆ Try using bullet points instead of giving several ideas in a sentence separated by commas.
- ◆ Choose words carefully.
- ◆ Use short words; aim for one or two syllables.
- ◆ Limit the use of jargon, and technical or scientific words.
- ◆ Be consistent with word choice.
- ◆ Use conversational language.
- ◆ Keep sentences short. Aim for 8–10 words when possible.
- ◆ Stick to one idea per sentence.

Questions for reflection

The following questions help to determine whether the text is easy to understand:

- ◆ Would this text be understood by an elderly relative?
- ◆ Would this text be understood by a 12-year-old?
- ◆ Is plain language used and scientific jargon avoided, when possible?
- ◆ Are sentences short, with roughly 8–10 words per sentence?
- ◆ Are longer words avoided when shorter words would do?
- ◆ Are one- or two-syllable words used?
- ◆ Does this text provide the reader with the information on the immediate pest risk and what they need to know?
- ◆ Does this text provide the reader with actions they can take and why it is important to them?

Further Reading

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IPPC

IPPC The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect cultivated and wild plants by preventing the introduction and spread of pests. International travel and trade are greater than ever before. As people and commodities move around the world, organisms that present risks to plants travel with them.

Organization

- » There are over 180 IPPC contracting parties.
- » Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- » 10 regional plant protection organizations (RPPOs) have been established to coordinate NPPOs in various regions of the world.
- » IPPC liaises with relevant international organizations to help build regional and national capacities.
- » The Secretariat is provided by the Food and Agriculture Organization of the United Nations (FAO)

Feedback, please:

We would appreciate your feedback through a fast and easy survey here:

<https://www.surveymonkey.com/r/stakeholdermanual>.

This will help the IPPC Secretariat and Implementation and Capacity Development Committee (IC) strengthen this and other training resources.

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Convention**

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