



# PEST RISK ANALYSIS (PRA) TRAINING

## Instructor Manual



**Standards and Trade  
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d'inspection des aliments



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## **1. INTRODUCTION**

This Instructor's Manual is an aid to support the delivery of the IPPC training course on Pest Risk Analysis (PRA). It has been specifically developed for use by PRA practitioners without much experience as instructors. It provides a brief course overview, background notes explaining the different ways in which adults learn, practical/logistical factors to take into account when organising the course, useful guidance on how to teach the course, brief outline lessons plans for each component of the course, and tips on being a good facilitator.

## **2. COURSE OVERVIEW**

This pest risk analysis course was developed to be a resource for countries wishing to have training in the principles and conduct of Pest Risk Analysis (PRA). The course material covers the pertinent international standards and resources available with a focus on quarantine pests, as well as the fundamental principles of the IPPC and risk assessment, risk management and risk communication, as outlined in the related IPPC standards. This is an introductory level course, designed to provide practical guidance and be readily transferable to any country, National Plant Protection Organization (NPPO) or Regional Plant Protection Organization (RPPO). Participants will be presented with various teaching methods including formal presentations, interactive group exercises, discussion groups and role-playing exercises in which all participants are actively involved.

Course materials other than this manual include: a comprehensive participant's manual providing information and resource material on PRA, oral presentations with PowerPoint slides and more detailed speaker's notes, an exercise book containing group exercises and suggested reading material and information on international agreements and standards.

### **3. OVERALL APPROACH TO THE LEARNING EVENT**

#### **3.1 LESSON PLANS**

The way in which each part of the PRA Training Course is to be taught should be carefully considered. Lesson plans that describe the course of instruction for an individual lesson are a useful way of formalising an instructor's thinking. Summary lessons plans for each stage of the course are given in section 7. There is no single way to construct a lesson plan, but most lesson plans contain some or all of the following,

- the title of the lesson,
- the amount of time required for the lesson,
- a list of materials required,
- a list of objectives
  - what the student is expected to be able to do upon completion of the lesson, or
  - what the student is expected to know upon completion of the lesson,
- how the lesson is to be introduced e.g. by reference to relevant ISPMS or reviewing previously taught parts of the PRA course,
- the instructional component,
  - e.g. what the instructor plans to do and say,
  - e.g. opportunity for the participants to be active and apply what has been taught,
- the summary – which gives an opportunity for the instructor to summarise the lesson and for the participants to ask questions.

Although a lesson plan is useful, people learn what is important and interesting to them as individuals. Therefore an assessment of the needs of the course participants must also be taken into account. Try and find out the type of information listed below and consider modifying the lesson plans provided.

Characteristics of the course participants that could influence the lesson plans:

- Who are the participants?
- What organizations do they come from?
- How old are they?
- What previous experience do they have with what you want them to learn?
- What expectations do they have about the training?
- What is their motivation for attending the training course?

When the training course begins, ask the questions above then consider whether the existing lesson plans are still relevant. Be prepared to change your expectations of the training course.

You can find out what they know, and what their expectations are, by asking participants through small group discussions, to describe their own experiences with PRA, and the problems they encountered and the successes they achieved. Build on their experience, not on theory.

Build your training around hypothetical exercises, based on real-life case studies relevant to your learners. For example, when participants are asked to work in small groups to develop a PRA or to role play as stakeholders, they will probably discuss the real-life experiences of some of the group members who have experience with PRA or public consultation. This increases the participants' margin for experimentation and learning. Your participants will be aware, however, of the relevance of the exercise to real-life issues of current interest. Let them make their own judgements of how the exercise applies to the situation. Do not tell them everything.

Provide people with 'advance organizers' for their learning. Let them know what the objective of the learning activity is, and how what you are going to do is related to these objectives. Write these things down in summary form so the participants can refer to them when they feel lost or unsure of why they are engaged in what may seem to be strange activities. People need to know why they are spending their time with you. When you are finished, you should leave people with summaries of what they may have learned, so they can refer to these again later.

People learn and remember what is of interest to them. Build activities around subjects which will hold your learners' interests. For this you need to know them well, or to learn about your participants quickly during the early stages of the learning event.

### **3.2 ROLE OF THE INSTRUCTOR**

Trainers should be knowledgeable on the topic of PRA, understand the needs of the participants and ensure that the training objectives are clear and relevant. The main responsibilities of the trainer are:

- Being well prepared – have a plan for the process and content of the discussion and know the material well enough to orient yourself to the discussion at any point
- Establish a supportive learning environment – encourage and support two way communication and mutual respect
- Provide clarity and guidance – introduce and explain tasks to be accomplished in each session
- Motivate the participants – if the material being taught is relevant to the needs of the participants and if they can see the usefulness of the new skills they will be motivated to learn
- Mobilise existing knowledge – help the participants to draw out their own experiences and knowledge on the topic
- Maintain flexibility – alter the training course timelines, agenda or objectives if needed in order to meet the needs of the participants
- Moderate the discussions – keep the exchange of information flowing among the participants and keep the discussion focussed on the topic at hand
- Use body language – keep your expressions towards all participants friendly but neutral, engage in culturally appropriate mannerisms to indicate interest in what the participants are saying
- Avoid controlling the outcome – participants often learn best when they can draw their own conclusions about case studies and exercises.

### 3.2.1 BEING A GOOD FACILITATOR

During group activities, trainers should adopt the role of a facilitator. A facilitator is someone who helps a group of people understand their common objectives and can guide and support the group to achieve objectives but without personally taking any side of an argument. A facilitator will try to assist the group in achieving consensus on any disagreements so that the group can progress. The role of the facilitator consists of:

- Creating a conducive environment for good discussion
- Keeping the group focussed on the objectives while allowing some flexibility
- Ensuring equal access to participation by all group members
- Guiding the discussion to make the best use of the time available

Some points to consider when facilitating are:

- Get participants involved from the beginning – Have participants introduce themselves and tell one thing about themselves (for example, where they are from, PRA experience). Give participants the opportunity to learn from each other and engage in shared learning. Set a relaxed but focused tone for the discussion. Be clear about the purpose, spirit and process of the session.
- Set the timetable for the session and keep to the agreed timing, as much as possible; when the schedule changes, inform participants and explain why it has changed.
- Ask the group to choose someone within the group to report back to plenary.
- Affirm participants as they take part – this encourages more participation by others. Don't let one or two persons dominate the discussion; notice who is responding and who is left out, and try to involve all participants. Solicit responses from non-talkers ("I'd like to hear from some of you who have not spoken yet."). Watch for nonverbal clues from participants who do not contribute much but have something to say, and then call on them.
- Listen – Attend to participants' ideas and feelings.
- Ask for examples and support for opinions – Probing deeper gets participants to think. If someone speaks in generalities about the experience of others, you might ask, "How did you experience that?", "What is your evidence for that?"
- Use open-ended questions such as "How would you justify ....? Or "What are the causes of...?" rather than questions that can be answered with a simple "yes" or "no".
- Rephrase questions – If participants don't respond, try asking the question a different way.
- Ask clarifying questions to help participants explain more fully what they are saying. Encourage participants to ask each other questions for clearer understanding. Restating or paraphrasing briefly after someone speaks can also be helpful in clarifying.
- Pause after questions – Participants need time to think. After asking a question, give "wait time" before recognizing or calling on a participant. Allow time for reflection on current practice - but encourage action.
- When you are moving from one question to the next, it is useful to summarize very briefly the comments or themes that emerged in discussing the question you are just completing.
- Test consensus – Be careful of premature consensus before an issue has been explored. Restate the conclusion and ask if anyone has a different view.

- Summarize – Provide a summary or conclusions as appropriate, at transition points during the discussion and at the end.
- When the conversation gets off the topic, bring it back to the question at hand.
- Encourage expression of all viewpoints present. Accept disagreement as normal and healthy, rather than threatening. Encourage mutual respect in the midst of disagreement.
- Keep track of the time and try to ensure that the group has a chance to talk about all of the questions.

### 3.3 ADULT LEARNING

Research and experience in adult education have shown that adults can learn and can make profound changes in behaviour - but that in order to do so we, as trainers, must move carefully from what adults know now to what we want them to learn during the training. It is not what you teach your participants that is important, but what they learn. Ultimately learning is in the participants' control, not yours. You can provide opportunities for them to learn, but you cannot force them to learn.

Adult learners need opportunities to experience, analyse, reflect and apply.

- In order to learn by *experiencing*, participants identify the issues and develop their own set of questions
- In order to learn by *analysing*, participants are responsible for working out their own conclusions
- In order to learn by *reflecting*, participants relate the learning experience to their own values, beliefs and previous experiences
- In order to learn by *applying*, participants apply the learning experience to their own situations

#### Tips

- Treat your participants as learners not students
- Look at your training as a learning event not a teaching event
- Listen carefully to your participants

Trainers must take the time to understand the composition, level of experience and area of expertise of the PRA workshop participants in order to tailor the delivery of materials in a way that ensures that effective learning can take place at all levels.

Training must take into account the following factors, about how adults learn:

#### 1. Adults learn at different speeds.

Some people learn quickly and some learn more slowly. A person who has no previous knowledge about Pest Risk Analysis, and has formed no attitudes or developed no behaviours relevant to the learning, may learn new approaches faster and easier than people who have worked on PRA for years, and have learned very well what was previously thought to be the best approach. Studies have indicated, for example, that the

people who often have the most difficulty in changing behaviour are professionals and academics, such as lawyers and sociologists. These are people who have learned information, have developed attitudes and have practiced behaviours in their own areas of expertise for years, and sometimes have difficulty in adapting to changed expectations.

**Tips**

- Try to determine, based on the previous training and experience of the participants, how ready they are to learn new things
- Ask participants about their experience with PRA

**2. Adults need to want to learn what you have to teach**

Adults have different motivations for learning. Your participants will want to learn something new if they have a good reason. We know that “problem-solving” is a strong motivation for wanting to learn. People who see a problem in their own lives or in their own work, and see that learning something new is instrumental to solving the problem, will be more likely to involve themselves in the learning process. We also know that if participants have no intrinsic interest in learning, and are motivated by short-term financial incentives or are mandated to participate by their supervisor, their learning will be superficial and will not last long.

**Tips**

- Learn what has motivated your participants to participate, work with that motivation, talk about it during training and demonstrate how a particular problem can be addressed by the new information, attitudes or behaviour which you are helping them learn
- If they do not see the relevance of the training to their own lives or work take some time to discuss it with them. You might ask them “what is the problem that learning plant health risk analysis procedures will help to fix” as a means of relating the training to problem solving

**3. Adults have different ‘cognitive structures’ or patterns of thinking which affect how they learn.**

Not all participants, even people of the same education, nationality or social and economic grouping, have the same patterns of thinking and learning. Different people will see the same experience in different ways, they will think about it in different ways, and they will understand it in different ways.

**Tips**

- Try to understand the diversity in your participants' values and beliefs which might affect how they learn what you want them to learn. Look at what type of organizations, cultures, or social structures your participants come from.
- Try to identify your participant's expectations. What do they expect from a course on PRA? How can you work with or, if necessary, modify their expectations to be relevant to learning what you want them to learn.

**4. Adults learn most powerfully from experiences, not from lectures, or reading about theory.**

Your behaviour, your actions and your approach as a trainer must be consistent with the theory and practices that you want your participants to learn.

Learning is much more effective if combined with experience. Lectures and reading about theory are important to communicate background information, but this information should be backed up and strengthened by exercises and active involvement of participants. To develop new attitudes and ideas, participants need the opportunity to see the world from a new perspective, through experience. This can be achieved by letting participants conduct a PRA or parts of it.

**Tips**

- Ensure that your training style reflects the lessons that you want your participants to learn. For example, if you want to encourage your participants to learn how to share ideas you must give them the opportunity to do so.

**5. Learning is most achievable when taken in small, incremental, iterative steps.**

Overwhelming participants with information may confuse and overburden them. The approach this course takes to learning is more likely to move people away from old attitudes and beliefs, than is confrontation, or a requirement for a dramatic shift in values. If we confront and challenge people's most important beliefs, without gradually leading them, step by step to confront those beliefs themselves, then we risk, as trainers, a backlash, a defensive reaction against new ideas. If learners have the chance to see that they are making progress in small things, they will be motivated to move on to more important and more difficult learning tasks.

**Tips**

- Think about and plan to deliver your material in increments, small steps, which will lead to your ultimate overall learning objective. The course is designed this way.
- Plan for small learning changes, and build on these, step by step

**6. Adults need 'margin' if they are to learn effectively.**

That is, adults need some room to experiment in the process of learning new things. Learning is not easy. It can be threatening to your participants. There are different ways you can provide people with the 'margin' they need to learn, and to experiment. You can provide them with information. You can provide them with equipment or financial resources. You can provide them with expertise and advice. You can provide them with quiet time, away from the pressure of their lives, to try out new behaviours. They must know that if they experiment with what you want them to learn, they will get support from you, or from someone else. This course is about trying new things and ideas and being able to risk making mistakes. The course allows a margin for learning.

**Tips**

- use participant's motivation to help them experiment
- Provide your participants with new information with which they can experiment.
- Provide your participants with a workshop environment in which they will not be heavily criticized if an experiment with new behaviour does not go well.
- if the participants make a mistake, do not immediately point it out, let them continue the exercise and wait to see if they realise a mistake has been made. If after a short while the mistake has not been realised, challenge the participants and make them reconsider, let them discover the mistake themselves.

**7. Unplanned learning occurs.**

As a trainer, you cannot control all the learning which occurs during your training course. Some participants will not learn much of what you want them to learn, but they may learn things you do not want them to learn. If they fail in experiments, they may learn that experimentation is dangerous. If you are directive and controlling in your behaviour as a trainer, participants may learn from this to continue to practice hierarchical, directive decision-making. Some of the unplanned learning may also, however, be more positive and more important than what you planned to teach. Adults quite frequently learn more from their fellow participants than they do from trainers. Trainers can also learn from the course participants - particularly about the PRA situation in their region.

**Tips**

- pay attention not just to your lesson plan, but to what is occurring among the participants during your training. You may find positive opportunities to make your point or even to explore a new idea that you had not thought of or planned for if it emerges from your participants.
- give your participants room to learn from each other. You do not have to control all learning activities. On the other hand, you may find that this interaction is interfering with what you want your participants to learn.

#### **4. COURSE MATERIALS**

Course materials which should be provided to each participant and instructor include:

- Agenda
- Participant Manual – hard copy
- Group Exercise Manual – hard copy
- Presentations – on CD or provide a link for downloading
- ISPM Handbook (ISMPs 1 – 27) (2006)
- Guide to the International Plant Protection Organization
- PRA Course Evaluation Form

Arrange with local organizers to print the manuals and materials.

Additional materials which should be provided to each instructor include:

- Instructor's Manual
- Presentations with Speaker's notes Manual
- Presentations in PowerPoint format

With the exception of the ISPM Handbook and the Guide to the International Plant Protection Organization, which is available from the IPPC Secretariat, all course materials will be required to be printed and collated in advance of the course. Material is available to download from the IPPC, or arrange for a CD of the material from the IPPC. If possible, try to make it easy to distinguish between the Participant Manual and the Group Exercise Manual when having the manuals printed by using different coloured covers or by putting coloured marks on the front of each manual.

Printed materials should be prepared and shipped one to two weeks ahead of time to the destination where the training course will be held. Local organizers may wish to add additional local information to the materials to be provided to participants and time will be required to assemble materials.

## **5. LOGISTICAL CONSIDERATIONS**

### **5.1 NUMBER OF PARTICIPANTS**

Due to the interactive nature of this training course, the ideal number of participants is 20 – 25. Too few participants will lessen the opportunities for interaction, input of different points of view and different types of expertise. Too many participants will likewise hamper interaction with the result that some participants may not feel that they have had an opportunity to express an opinion or contribute to the discussion. The exercises work best in small break-out groups of 6 – 10 people with one instructor each.

### **5.2 NUMBER OF INSTRUCTORS**

For the sake of both the participants and the instructors, a minimum of 2 instructors and preferably 3, is necessary for a group of this size. A rotation of speakers for the presentations provides greater variety and a greater opportunity for a positive learning experience for participants. In addition, it is necessary to have at least one instructor for each of the smaller breakout groups during the exercises and to facilitate discussions of the whole group.

### **5.3 MEETING ROOM REQUIREMENTS**

In order to effectively deliver this training course you will require a room with enough seating for all participants and large enough to allow them to move around easily. Participants will be able to communicate with each other better if they can see each other's faces – “board room style” seating achieves this better than does “classroom style” seating. Additional space will be required for the participants to work in smaller groups on the exercises, preferably in separate rooms where lively discussion in one group will not interfere with discussions in another.

Instructors will probably need to talk and discuss during sessions so try and sit together at a point where it is easy to move around without disruption and where you can talk discreetly.

### **5.4 EQUIPMENT AND SUPPLIES**

The following equipment is required in the main room:

- Computer with PowerPoint capability
- LCD projector
- Projector screen
- Microphones (if the room size warrants).

Access to a photocopier and photocopy paper may also be helpful.

The following materials should be available and assembled prior to the training course:

- Flip charts and markers, masking tape, Post-it Notes
- Pens and paper, highlighter markers
- Name tags
- White board and white board markers if possible

## **5.5 TIPS FOR INSTRUCTORS AND LOCAL ORGANIZERS**

Instructors should be in contact with the local organizers or their NPPO as early as possible, to discuss expectations. At this time, numbers of participants, duration of the course, information to be covered, and instructors' requirements can be discussed.

Instructors and local organizers should arrange a time to review logistics and expectations a few weeks' ahead of time. This would be a good occasion to discuss whether a local presenter will be available to do the lecture on Country- specific Implementation of IPPC proposed for the first day of the course and determine how much time will be required and what material will be covered. In addition, local organizers may wish to arrange for special guests, field trips or tours of their facility and adjustments to the course agenda can be made during these discussions.

Instructors and local organizers should meet again to go over last minute details one or two days prior to the beginning of the course, if possible.

Always have a few extra copies of manuals on hand in case extra participants turn up at short notice.

Have a copy of each manual for each instructor – mark instructors' copies so they don't get lost or mixed up with participants' copies.

At the end of the training course, some participants may require a certificate of achievement. A draft certificate is provided on the CD with the PowerPoint files. If certificates are to be printed at the time of the training course, it will be necessary to ensure that there is ready access to a printer and suitable paper in advance.

If possible, instructors may wish to bring small gifts to be given out as spontaneous prizes throughout the week. Little items such as phytosanitary-related bookmarks, fridge magnets or pens produced by the instructors' NPPO may be popular hand-outs for participants while providing concrete examples of risk communication products produced by other NPPOs.

## **6. COURSE AGENDA**

The following agenda has been developed based on pilot delivery of the course over a 5 day period. It can be modified to suit the needs and timelines of the country receiving the training. A print-ready version of the Agenda is available on the accompanying CD.

**Day One**

<b>Morning - Introduction</b>		
30 -45 minutes	Welcome	<ul style="list-style-type: none"> <li>• Welcome to participants by host country</li> <li>• Introduction to course by instructors</li> <li>• Introduction of participants and instructors</li> <li>• Logistical information for the week (washrooms, lunch &amp; coffee break locations &amp; times, transportation etc.)</li> <li>• Pre-course quiz</li> </ul>
20 minutes	Lecture: IPPC and its Relationship to PRA	
20 minutes	Lecture: Country- Specific Implementation of IPPC	Delivered by host country
20- 30 minutes	Break	
30 minutes	Lecture: Brief Overview of PRA	
45 minutes	Group Exercise #1: Terminology	
1 hour	Lunch	
<b>Afternoon – PRA initiation and pest categorisation</b>		
20 minutes	Lecture: Initiation	
20 minutes	Lecture: Pest Categorisation	
20 – 30 minutes	Break	
2 hours	Group Exercise #2: Categorisation	
15 minutes	Wrap up	Questions/answers on material covered during the day.

## Day Two

<b>Morning – Assessing probability of introduction (entry)</b>		
15 minutes	Welcome	Questions/comments from previous day/ morning quiz
10 minutes	Lecture: Risk and Probability	
20 minutes	Lecture: Probability of Introduction (Entry)	
20-30 minutes	Break	
2 hours	Group Exercise #3.1: Initiation, Categorisation and Probability of Entry	
1 hour	Lunch	
<b>Afternoon- Assessing probability of introduction (establishment) and Spread</b>		
20 minutes	Lecture: Probability of Introduction (Establishment)	
20 minutes	Lecture: Probability of Spread	
20-30 minutes	Break	
2 hours	Group Exercise #3.2: Probability of Establishment and Spread	
15 minutes	Wrap up	Questions/answers on material covered during the day

**Day Three**

<b>Morning – Assessing consequences</b>		
15 minutes	Welcome	Questions/comments from previous day/ morning quiz
30 minutes	Lecture: Introduction to Impacts and Assessment of Potential Economic Consequences	
1 hour	Group Exercise #4 - Impacts	
20 minutes	Break	
1 ½ hours	Group Exercise #3.3– Potential Economic Consequences	
1 hour	Lunch	
<b>Afternoon – Pest risk assessment conclusions</b>		
30 minutes	Lecture: Overall Assessment of Risk	
1 1/2 hours	Group exercise #3.4 – Pest Risk Assessment Conclusions	
15 minutes	Lecture: Uncertainty	
1 hour	Group exercise #3.5: Peer Review	
15 minutes	Wrap up	Questions/answers on material covered during the day

## Day Four

<b>Morning – Pest risk management</b>		
15 minutes	Welcome	Questions/comments from previous day/quiz
30 minutes	Lecture: Risk Management	
1 hour	Group Exercise #5: Mitigation Measures	
20 minutes	Break	
1 ½ hours	Group Exercise #6: Pest Risk Management	
1 hour	Lunch	
<b>Afternoon – Pest risk analysis conclusions and documentation</b>		
2 hours	Group Exercise #3.6: Pest Risk Management	
30 minutes	Break	
20 minutes	Lecture: Information Gathering	
15 minutes	Wrap up	Questions/answers on material covered during the day

## Day Five

<b>Morning – Pest risk communication</b>		
15 minutes	Welcome	Questions/comments from previous day/quiz
15 minutes	Lecture: Risk Communication	
1 hour	Group exercise #7: Risk Communication	
20-30 minutes	Break	
1 ½ hours	Group Exercise #3.7: Stakeholder Consultation	
1 hour	Lunch	
<b>Afternoon – Course wrap-up and evaluations</b>		
1 hour	Group Exercise #8: Pest Risk Assessment Review	
20-30 minutes	Break	
30 minutes	Course Wrap-up and evaluation	<ul style="list-style-type: none"> <li>• Look back and see if expectations have been met</li> <li>• Participants to complete individual written course evaluations</li> </ul>
30 minutes	Closing Ceremonies	<ul style="list-style-type: none"> <li>• Presentation of Certificates of Achievement</li> <li>• Closing remarks by host(s) and instructors.</li> </ul>

## **7. DELIVERY OF TRAINING**

On the first day all participants should be introduced to each other and have the opportunity to interact. It is important to set a relaxed and open tone for the remainder of the week. Ensure everyone feels comfortable in the training course. Let everyone know when breaks will be held, where the washrooms are and at what time and where lunch will be served. It is also important to determine the participants' expectations for the week and to revisit these at the end of the week to see if they have been met.

During the first morning it is valuable to review the objectives of the course and go over the agenda, providing a quick overview of the upcoming week. Explain the different course materials that have been provided to them, i.e., the Participant Manual, Group Exercise Book, and the handbook of ISPMs (1 – 27) (2006). Encourage all participants to make full use of all materials throughout the week. During the course of the week, people will be moving around into different groups and sitting in different places around the room; it will be easy for the documents to get misplaced. Everyone should put his/her name on all documents.

All of the lectures have speaker's notes which provide further guidance. These are available in the Presentations with Speaker's Notes manual. Participants can be given hard copies of the PowerPoint presentations as handouts if desired. These are available on the accompanying CD.

Opening each day by asking participants questions about the previous day's work may be a helpful way of assessing their comprehension of the material so far and gets the group warmed up to each other and to the instructors so they are ready for the new day. For example, provide an IPPC definition and ask what term it applies to.

## **8. LESSON PLANS**

### **8.1 IPPC AND ITS RELATIONSHIP TO PRA**

#### **8.1.1 LEARNING OBJECTIVES**

The purpose of this talk is to provide the overall context in which PRA is conducted. The talk will describe the international agreements that relate to PRA such as the IPPC and the WTO-SPS Agreement. The objectives are to provide participants with an understanding of the international context of PRA and where their country fits in that context. The principles of the IPPC that are most directly supported by PRA are emphasized. 20 minutes is the suggested time allotment for this lecture.

#### **8.1.2 NOTES FOR PRESENTER**

Remember to speak slowly and clearly – check if everybody can hear and understand your accent. (This applies to all talks/ instructors, especially on the first day). Introduce yourself and all other instructors, thank the host country for the opportunity to visit their country. Remember that this is the first talk and it can set the tone for the whole week. You should focus on putting people at ease so they are comfortable enough to participate fully throughout the week.

The IPPC principles which are discussed in this lecture will re-appear from time to time throughout the week as the reasons for which PRA is important.

## **8.2 COUNTRY SPECIFIC IMPLEMENTATION OF IPPC**

### **8.2.1 LEARNING OBJECTIVES**

Objectives of this lecture are to ensure that both participants and instructors are aware of the PRA situation in the host country – who the NPPO is, how PRAs are currently conducted etc.

This presentation will be delivered by the host country and you should communicate with them at least several weeks ahead of time to ensure that they are aware of what is expected and the purpose of this talk. The lecture should take approximately 20 minutes.

## **8.3 BRIEF OVERVIEW OF PRA**

### **8.3.1 LEARNING OBJECTIVES**

The objectives of this lecture are to give a brief overview of the entire PRA process. This is an overview only; each component of PRA will be dealt with in more detail in future lectures. 30 minutes is the suggested time allotment for this lecture.

### **8.3.2 NOTES FOR PRESENTER**

The first part of the presentation focuses on that fact that risk is a combination of likelihood and impact/ consequence. Crossing the road (motorway compared to a country lane) is a simple yet effective way to demonstrate risk. The remaining slides should be easy to understand for instructors familiar with PRA.

## **8.4 INITIATION**

### **8.4.1 LEARNING OBJECTIVES**

The purpose of this talk is to explain the steps involved in the initiation stage starting with the reasons PRAs are done, the screening process to determine if the organism is a pest and then the subsequent definition of the PRA area for those species that are determined to be a pest. 20 minutes is the suggested time allotment for this lecture.

### **8.4.2 NOTES FOR PRESENTER**

The preceding talk gave a broad overview of the whole PRA process; this is the first detailed talk about a specific part of that process. It's a little difficult because the process can start from so many points and the talk actually begins at a point just before the PRA itself starts. It's only after determining that the organism is a pest that a pest risk analysis can begin.

The screening of an organism to determine if it is a pest may cause a degree of difficulty, especially with participants with a strong science background but not a lot of PRA background. This is because the IPPC definition of a pest is so much more inclusive (and less critical) than the traditional plant scientist's definition of what constitutes a pest.

Make sure everyone is clear that the screening is to determine if the organism is a pest by the IPPC definition as opposed to the more pragmatic approach of an organism that causes an unacceptable economic impact. Be clear that a more critical examination will occur as part of the pest risk assessment stage and is not being overlooked, but is premature at this point in the PRA process. We are simply ensuring that the issue or organism is relevant to the IPPC world before going any further. The danger in not getting everyone to the same level of understanding on this point is that you may lose credibility with some participants (research scientists or pest management specialists perhaps) who think your judgement of what is and is not a pest isn't scientific.

There may be some confusion between pathway and commodity. Try to be clear and take questions, or perhaps ask people to give you examples of pathways or commodities to see if they recognize that pathway is a much broader term and encompasses not only commodities but other things as well. Ask them to provide you with examples of pathways into their country.

## **8.5 PEST CATEGORISATION**

### **8.5.1 LEARNING OBJECTIVES**

The objectives of this lecture are to introduce the audience to the first step in the pest risk assessment phase of PRA, that of pest categorisation. 20 minutes is the suggested time allotment for this lecture.

### **8.5.2 NOTES FOR PRESENTER**

It is important to continue to link each step as it is discussed back to where it fits in the overall PRA process. During the categorisation lecture it is important to emphasise that the IPPC definition of a quarantine pest is the key to the whole PRA process.

## **8.6 RISK AND PROBABILITY**

### **8.6.1 LEARNING OBJECTIVES**

The objectives of this lecture are to provide participants with the definition of risk. It is important that participants grasp the basic definition of risk at the beginning of the week and that they are able to carry that idea with them through the rest of the week. While discussing both pest risk assessment and pest risk management, some lectures or exercises will be focussing on likelihood, some on impact and it will be easier for them to tie it all back together at the end, if they remember the link between the two. This is a very short lecture with a 10 minute time allotment.

### **8.6.2 NOTES FOR PRESENTER**

This is the only lecture that provides general background information on different approaches to PRA. It's short, but important and often is left out of lectures on PRA that focus more on the details contained in the ISPMs and less on the principles of the IPPC or the generalities of PRA.

## **8.7 PROBABILITY OF INTRODUCTION (ENTRY)**

### **8.7.1 LEARNING OBJECTIVES**

As a consequence of this presentation, participants should know the IPPC definition of a pathway; know the important features of a pathway and be able to describe different types of pathways; recognise how the description of a pathway can influence the information required for a PRA; know what type of information is required and where to find such data and know what factors associated with pathways need to be considered during a PRA. The suggested time allotment for this lecture is 20 minutes.

### **8.7.2 NOTES FOR PRESENTER**

The more detailed a pathway can be described, the more focussed a PRA will be, and hence the easier the PRA will be to complete. It is important to remind the participants that probability of introduction includes entry and establishment.

## **8.8 PROBABILITY OF INTRODUCTION (ESTABLISHMENT)**

### **8.8.1 LEARNING OBJECTIVES**

The objectives of this lecture are to provide the audience with an understanding of the second step in a pest risk assessment – probability of introduction (establishment). Participants will become familiar with the factors that influence establishment, and will be provided with an introductory look at climate matching models including Climex. The suggested time allotment for this lecture is 20 minutes.

### **8.8.2 NOTES FOR PRESENTER**

It is important to continue to provide an overview of which step in the PRA process we are now discussing and to remind participants of the iterative nature of Pest Risk Analysis.

## **8.9 PROBABILITY OF SPREAD**

### **8.9.1 LEARNING OBJECTIVES**

The objectives of this lesson are to provide participants with an understanding of probability of spread. At the end of this lecture participants should be familiar with factors influencing the spread of a pest and how to assess spread. The suggested time allotment for this lecture is 20 minutes.

### **8.9.2 NOTES FOR PRESENTER**

Continue to highlight to the participants what step or stage we are in with regards to the overall PRA format and link your presentation back to the overall PRA process.

## 8.10 INTRODUCTION TO IMPACTS AND ASSESSMENT OF POTENTIAL ECONOMIC IMPACTS

### 8.10.1 LEARNING OBJECTIVES

As a consequence of this presentation participants should realise that “economics” and related terms are used throughout the IPPC and specifically within the pest categorisation phase, pest risk assessment phase and pest risk management phase of a PRA. Participants should know the difference between direct and indirect damage, and understand the factors that need to be considered when assessing potential economic impact. An example using “partial budgeting” (a technique recommended in ISPM 11 ) will have been given and participants should know what a partial budget is. The suggested time allotment for this lecture is 30 minutes

### 8.10.2 NOTES FOR PRESENTER

This is an introductory level training course for PRA. Participants will normally come from a science background and will not have a highly detailed knowledge or understanding of economics and the various means of measuring or assessing economic impact. The purpose of this training is simply to introduce the concepts and provide some introductory level guidance. Participants should be encouraged to consider economic impacts in their PRAs to the extent that is feasible and necessary for its intended purpose; they are not expected to become economists.

## 8.11 OVERALL ASSESSMENT OF RISK

### 8.11.1 LEARNING OBJECTIVES

The participants should realise that the IPPC does not prescribe a methodology or specify an approach to take when concluding a risk assessment, but there are several options (for examples, see below – Notes for Presenter). The participants should know some of the advantages and disadvantages of each approach. The suggested time allotment for this lecture is 30 minutes.

### 8.11.2 NOTES FOR PRESENTER

This presentation aims to be rather interactive and it will help to have a flip chart or other space on which to write. The table below lists three approaches that could be used to summarise risk. During the course, participants may have come up with an alternative mechanism. Participants could add to the advantages and disadvantages table below.

Approach to summarise risk	Advantages	Disadvantages
1) Use free text (descriptive) / “qualitative”	Flexible	Hard to compare between risks, ambiguous
2) Fixed words / word scale (e.g. low, medium, high) / “structured qualitative”	Consistent, easy to compare	Lack of flexibility
3) Quantitative	Consistent, scientific rigour	Time-expensive; data-intensive

## **8.12 UNCERTAINTY**

### **8.12.1 LEARNING OBJECTIVES**

This is a short lecture meant to introduce the concept of uncertainty. Participants should realize that uncertainty is an inherent part of pest risk analysis and become familiar with methods to address it. With this lecture, the risk assessment stage of PRA is finished. At this stage, the risk assessor should know whether the pest (or pathway) assessed is an appropriate candidate for the risk management stage. Participants should know that the PRA may stop here if the pest is not appropriate. The suggested time allotment is 15 minutes.

### **8.12.2 NOTES FOR PRESENTER**

Scientists are accustomed to working in the world of hypotheses, discovery and fact. The world of PRA is a world that uses fact to forecast future events and this sometimes creates anxiety or scepticism in scientists. The important thing is to recognize that there is value in identifying both the sources of uncertainty and the extent (or degree) of uncertainty associated with a pest risk assessment. Since pest risk assessments are, in essence, predictions of future events, they will always have some uncertainty associated with them. The response to a pest risk assessment may vary depending on the causes of (or reasons for) the uncertainty associated with it and the magnitude of that uncertainty. The presenter should carefully explain that uncertainty is “normal” in PRA and arises due to missing, incomplete, inconsistent or conflicting data.

## **8.13 RISK MANAGEMENT**

### **8.13.1 LEARNING OBJECTIVES**

Participants will learn about the pest risk management stage of a PRA. The pest risk management stage requires a judgement on the acceptability of the risk posed by the pest or pathway and considers the full range of mitigation measures that are available and the many points at which they might be applied, to determine the most appropriate treatment or combination of treatments to reduce the level of risk of the pest to an acceptable level. The suggested time allotment for this lecture is 30 minutes.

### **8.13.2 NOTES FOR PRESENTER**

This talk covers the third stage of PRA, the pest risk management stage - from the conclusions of the pest risk assessment to the identification of appropriate risk management measures (if any). It's a relatively long talk and a whole new subject so it's important to make sure everyone is understanding things right from the start; the material will be reinforced in the exercise, but there are no additional lectures, as there were for the stages of pest risk assessment.

Perhaps the most difficult part is the transition from Stage 2 to Stage 3. The ISPMs do not provide any guidance for determining if a risk is acceptable or not, yet this is a critical step between Stage 2 & Stage 3. The presenter could ask participants about ideas on how to decide if a risk is acceptable or not. A critical point to emphasize in this talk is the purpose of pest risk management. Having decided that pest risk is unacceptable, the purpose of applying pest risk management is to lower pest risk to a level that is acceptable. It is not necessary to lower the risk to zero, or to a level lower than what would be acceptable.

## **8.14 INFORMATION GATHERING**

### **8.14.1 LEARNING OBJECTIVES**

After this presentation, participants should know that having a strategy for gathering information is useful and can improve efficiency. Participants will also learn that information required for PRA may come from a very wide variety of sources, including other NPPOs, and that documenting sources of information used in a PRA or consulted during development of a PRA is important. The suggested time allotment for this lecture is 20 minutes.

### **8.14.2 NOTES FOR PRESENTER**

This can be an interactive presentation with participants sharing ideas for collecting information. Having a participant note down information sources that the group suggests during the presentation can help. In many developing countries, access to accurate information will be the biggest roadblock to implementation of PRA as a decision-making process within their NPPO. Refer participants to resource lists provided in the Participant's Manual and encourage them to make use of the internet and listservs as much as possible. Encourage them also to network amongst themselves and share information within their own organization.

## **8.15 RISK COMMUNICATION**

### **8.15.1 LEARNING OBJECTIVES**

Objectives of this lecture are to provide an overview of risk communication, stressing that it occurs throughout the PRA process, rather than at any specific point and that it is a two-way process. The suggested time allotment for this lecture is 15 minutes.

### **8.15.2 NOTES FOR PRESENTER**

This is a fairly short, non-technical presentation. It probably works well if kept relatively light-hearted and if participants are encouraged to interject ideas throughout. By the fifth day of the course, participants should know each other well and be comfortable with the participatory approach to training. Examples of risk communication should be drawn from the week's work together – the various exercises each involved some form of risk communication, either during the exercise itself, or during the report back to plenary at the end of the exercise.

## **9. DELIVERY OF TRAINING – GROUP EXERCISES**

### **9.1 FACILITATOR’S OBJECTIVES FOR THE GROUP EXERCISES**

The role of facilitators is to assist participants' learning and to ensure they achieve the goals of the breakout session.

Facilitators should manage the learning process during the group exercises, that is:

- ensure that participants have clearly understood objectives and group tasks
- manage the flow of the session, maintain momentum and focus
- ensure that participants have a voice in the discussion and that all have an opportunity to speak
- summarize key points of learning, issues left unresolved and to be pursued, etc.
- ensure the group reports back to plenary the outcome of their session

Facilitators should ensure that the process is progressive and exciting. Learning is a journey, not a series of discrete activities to be rearranged at will. Try to lead your session to take participants from where they are to where they may not have imagined they could go. Strive to finish the session with motivated participants who have gained new ideas and a determination to act accordingly.

Facilitators will have a certain amount of freedom on how to proceed with the exercises for the break out session. However, each session must also develop some consensus on the group’s response to the exercise.

Participants should work together on the exercises, listening and supporting their colleagues, and helping them to decide on the best response. Facilitators should help individuals to understand the problem better and to challenge their underlying assumptions, rather than to offer advice. Each participant will be invited in turn to share their points of view and problems they have regarding the exercise. Their fellow participants should look at the problem from their own perspective, and through pertinent questions, discussion and sharing of experience, participants will be helped to move on in their understanding of an issue or problem, and to come to see possible ways forward. Participants are encouraged to show empathy rather than be judgemental, to listen and provide support for each other.

In addition participants are encouraged to:

- take the time to build up strong relationships and networks outside the breakout or lecture-based sessions
- highlight areas / problems where they have special interest, strength or weakness and discuss these with other participants

Each exercise includes instructions explaining the objectives of the exercise and what participants are expected to do. At the start of each exercise, go through these instructions with the group as a whole. Explain what will happen and who will be in which group etc. Show participants what course materials will be necessary to complete the exercise, tell them where to go for their respective breakout groups and when to return to the main room. Instruct them to identify a note-taker or reporter for each group, as needed. Explain what will happen at the end of the exercise. Give them time to look over the written instructions in the group exercise manual before starting.

Some participants will respond to this type of learning activity more than others. Some will be natural leaders or spokespersons while others will be quiet, perhaps intimidated, or at least reluctant to take a lead role. Through the course of the week, try to encourage all participants to contribute and to give others an opportunity to do the same.

## **9.2 GROUP EXERCISE 1 – TERMINOLOGY**

### **9.2.1 OBJECTIVES**

The objectives of this exercise are to familiarize the participants with some of the more common phytosanitary terms used by IPPC contracting parties. As well, it is an opportunity to get the group working together and “warmed up”. This will be the first time they have had a chance to mingle with both other participants and the instructors. It is important that the instructors play the game as well in order to meet and interact with the participants on a one-to-one basis.

As outlined in the group exercise book, participants will each be provided with a numbered definition that corresponds to a term on a terminology matching table. The goal of the exercise is to match the definitions on the participant’s cards with the corresponding IPPC terms listed in the table. In order to do so participants must circulate around the room talking to other participants to find out what definition they were given and gradually filling in the blanks on the terminology matching table. In this way they not only become familiar with some common terms used in PRA but also get to meet and talk to the other participants in the course.

It is a good idea to run this exercise just before a break as it is difficult to gather everyone together when it is over. Moving into a coffee break provides that opportunity. This is also a good opportunity to take photographs of the group working.

The suggested time allotment for this exercise is 45 minutes.

A template for making the definition cards is attached as appendix 1.

**9.2.2 ANSWER SHEET FOR TERMINOLOGY EXERCISE**

<b>TERMS</b>	<b>DEFINITIONS</b>	<b>PARTICIPANT'S NAME</b>
Area of low pest prevalence	1	
Commodity	48	
Consignment	49	
Endangered area	26	
Entry (of a consignment)	25	
Entry (of a pest)	40	
Establishment	32	
Habitat	72	
Host range	69	
Introduction	43	
ISPM	52	
Monitoring	3	
Official control	8	
Organism	17	
Pathway	57	
Pest	5	
Pest categorisation	39	
Pest free area	14	
Pest free place of production	35	
Pest free production site	42	
Pest risk analysis	11	
Pest risk assessment	28	
Pest risk management	66	
Phytosanitary measure	23	
Plant products	54	
PRA area	9	
Quarantine pest	4	
Regulated article	45	
Regulated non-quarantine pest	61	
Transparency	59	

### 9.3 GROUP EXERCISE 2- CATEGORISATION

#### 9.3.1 OBJECTIVES

The objective of this exercise is to get the groups to categorize 8 different pests. They will be provided with 8 fact sheets and it is important to emphasise that this exercise is ONLY the categorisation phase. Get them to focus on the information needed to categorise the pest. It may be helpful to provide them with highlighters so that they can highlight appropriate sections of the fact sheet.

When small groups are returning to the larger group, allow each group to present their findings on a portion of the pests (ie if there are 2 groups each can present on half the pests, 3 smaller groups then they can present on 1/3 of the pests etc). The suggested time allotment for this exercise is 2 hours.

#### 9.3.2 ANSWERS FOR CATEGORISATION EXERCISE

No.	Pest	Pest Type	PRA Area	Host Type	Initiation	QP*
1	Butternut canker ( <i>Sirococcus clavigignenti-juglandacearum</i> )	Fungus	EPPO	Trees	Request to import	Yes
2	Vegetable weevil ( <i>Listroderes costirostris</i> )	Insect	Northern Africa	Vegetables	Request to import	Yes - except Morocco
3	Water hyacinth ( <i>Eichhornia crassipes</i> )	Plant	Nepal	Habitat: Aquatic	Request to import	No - climate unsuited
4	Sudden oak death ( <i>Phytopthera ramorum</i> )	Fungus-like	New Zealand	Nursery plants & trees	New records of disease	Yes
5	Minor fruit fly ( <i>Atherigona orientalis</i> )	Insect	South America (Chile)	Fruit & other crops	Request to import	Yes? - may be present?
6	Woolly cupgrass ( <i>Eriochloa villosa</i> )	Plant	Canada	Habitat: Crops (corn etc)	Interception (seed contaminant)	Yes
7	Raspberry ringspot virus	Virus	India	Soft fruit (berries)	Request to import	Yes
8	Texas root rot ( <i>Phymatotrichopsis omnivora</i> )	Fungus	Mexico	Many (field crops)	Interception (soil pest)	No - present and widely distributed and not under official control

\* QP = Quarantine Pest

## **9.4 GROUP EXERCISE 3 – CONDUCTING A PRA**

### **9.4.1 OBJECTIVES**

This exercise works through all the stages of a PRA one by one and will be conducted over the course of the entire week as new material is introduced in the lectures. Participants will follow the same example and will build upon previous work as they conduct a PRA.

For this exercise, participants will be divided into two (or three) groups and they will continue to work with this same group throughout the week whenever they work on another part of this exercise.

### **9.4.2 3.1 – INITIATION, CATEGORISATION AND PROBABILITY OF ENTRY**

During this part of the exercise you can provide participants with the supplier country information in the form of a second letter from Sunrise Flower imports (see page 27 of Group Exercise Manual). This letter can be provided after the participants have noticed that the information is missing and have asked you about it. At this point you can highlight that there is often a need to request further information and can initiate a discussion to that effect.

The notes on the following page provide some guidance as to what should be discussed with regards to the initial letter received by the NPPO.

The suggested time allotment for this exercise is 2 hours.

Dear NPPO Officer,

We are a newly incorporated company set up to import cut flowers<sup>1</sup>. I would like to check the import requirements to begin shipping monthly volumes of a variety of cut flower species from a major production facility in Africa<sup>2</sup>.

Under a recently negotiated agreement, our African supplier will airfreight high quality cut flowers to a distribution centre in Uttar Pradesh<sup>3</sup>. There will be a maximum of three days between cutting the flowers in Africa and distributing the flowers from our distribution centre in UP<sup>4</sup>. The flowers imported will be of top quality since they can be transported in environmentally controlled conditions, ideal for their well-being<sup>5</sup>.

You may be familiar with our sister company Sunrise Citrus Production (SCP) who is also based in UP, indeed we will be sharing the same distribution site, close to the SCP production area<sup>6</sup>, which has a good record of close cooperation with the NPPO<sup>7</sup>.

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<sup>1</sup> Since a new company lack of experience may give cause for concern.

<sup>2</sup> Should seek information about what volume, which cut flowers, from which African country.

<sup>3</sup> What guarantee is there that the cut flowers will be high quality? Airfreight suggests rapid transport so pests may survive and represent a risk. On the other hand, due to the rapid transport those that do survive do not reproduce/grow population in transit.

<sup>4</sup> Rapid travel as per point 3.

<sup>5</sup> Again what guarantee of quality? Conditions ideal for flowers could also be ideal for pests! The letter does not say the conditions are cooled.

<sup>6</sup> SCP produces *Citrus* in an area close by (remember the focus of this exercise will become a *Citrus* pest) so a possible pathway to a site of production begins to emerge. Since SCP will share distribution with flower imports, there could be a route for pests to get to *Citrus* production areas, e.g.

- cut flowers with live *Scirtothrips aurantii* arrive at the distribution centre via airfreight,
- at the distribution centre pallets and boxes are being returned to the *Citrus* production area for use by SCP.
- *Scirtothrips aurantii* / other pests move into the boxes / pallets being returned to the *Citrus* production area. At the near-by production area pests transfer to suitable hosts.

<sup>7</sup> Close cooperation is over exports of Citrus fruit.

## **9.5 3.2 – PROBABILITY OF ESTABLISHMENT AND SPREAD**

The participants will continue with the example and will examine the probability of establishment and spread components of a pest risk assessment. Reading material for this section is included in Appendix 1 of the Group Exercise Manual. The suggested time allotment for this exercise is 2 hours.

### **9.5.1 3.3 - POTENTIAL ECONOMIC CONSEQUENCES**

In this exercise participants are asked to answer a series of questions related to economic consequences related to the pest they have been working with. The suggested time allotment for this exercise is 1.5 hours.

### **9.5.2 3.4- PEST RISK ASSESSMENT CONCLUSIONS**

In this exercise participants are asked to devise a scheme for summarizing the overall risk posed by the pest in this PRA and for determining if the level of risk is acceptable or not. They can assign ratings if they wish. This is a good opportunity to discuss rating systems and provide examples of rating systems. There is a summary table provided in the exercise but participants may prefer to devise their own systems.

Remind the participants that it is important to document the areas of uncertainty and the degree of uncertainty in the assessment, and to indicate where expert judgement has been used. The suggested time allotment for this exercise is 1.5 hours.

### **9.5.3 3.5 – PEER REVIEW**

During this portion of the exercises each group will present their PRA to the other for a peer review. In order for this not to become a defence of the PRA the example needs to be set up to emphasize that this is a **PEER** review (ie tell them that they all work in the same office or some similar scenario). Remind them to listen and be open to making changes to improve their PRA. This exercise is good for reminding the groups that they need to justify what they say in their PRAs and that they should consult during its development to ensure that they have considered all available information. The suggested time allotment for this exercise is 1 hour.

### **9.5.4 3.6 – RISK MANAGEMENT**

In this exercise participants are asked to outline the sequence of events that must take place for *Scirtothrips aurantii* to be introduced to India following importation of cut flowers from Africa. They are to identify points along a timeline at which mitigation measures could be applied. They can use more or fewer boxes than provided in the diagram and table in the exercise. Use this exercise to remind groups of all the opportunities for risk management activities. You can also discuss the concept of equivalence here. The suggested time allotment for this exercise is 2 hours.

### **9.5.5 3.7 – STAKEHOLDER CONSULTATION**

In this exercise, each group will assume the role of a particular party in this scenario, i.e., the NPPO, the importer, or a domestic producer, and will consider the situation from that point of view. After 30 minutes preparation time, the groups will reconvene for a public meeting, at which the NPPO will present its PRA, the proposed response to the current interception and a proposed new import requirement for cut flowers from Africa. The importer and domestic producer groups will ask questions and present their points of view on this issue. The NPPO will respond. The suggested time allotment for this exercise is 1.5 hours.

Group exercises 4 through 7 will reinforce critical points first encountered in the various parts of exercise 3 by requiring participants to apply the principles learned in group exercise 3 to other case studies. They should work in different groups for these exercises than the one they work in for group exercise 3 in order to work with different participants.

### **9.6 GROUP EXERCISE 4 – IMPACTS**

In this exercise, participants will explore the wide range of impacts that might be expected as a result of an unintended introduction of a new weed species. Little technical information is provided and there are no right or wrong answers. The focus of the exercise is primarily to list all the types of impacts an invasive plant might have, under two general headings: direct and indirect impacts. The suggested time allotment for this exercise is 1 hour.

### **9.7 GROUP EXERCISE 5 – MITIGATION MEASURES**

In this exercise, participants will work as a group to develop a comprehensive list of mitigation measures that might be considered during the pest risk management stage of a PRA for any pest or pathway. Again, this is an open exercise whose principle purpose is to get participants thinking as broadly as possible in order to develop as comprehensive a list as possible, from which they will select specific measures to consider in future exercises. The suggested time allotment for this exercise is 1 hour.

### **9.8 GROUP EXERCISE 6 – RISK MANAGEMENT**

Participants are asked to develop a list of risk management options for the scenario provided in the Group Exercise manual. They will need to consider the following points outlined in bold italics when working through this exercise. Allow them the opportunity to discover these points on their own before providing them with help or suggestions. The suggested time allotment for this exercise is 1.5 hours.

Dear NPPO,

Our tomato industry is one of the best in the world at producing low cost high quality product. Our climate is perfectly suited to large scale out-door production of tomatoes that are hand picked, packaged and refrigerated for maximum quality and freshness. Our tomato industry is

formed from a co-operative of many small to medium growers that maintain their own production management systems but share large scale packaging and refrigeration facilities **Important information here about the nature of the domestic industry in the exporting country. It would be more difficult for the NPPO to establish effective growing season management systems with such a fragmented industry. Measures on the harvested product would be more easily implemented as there are fewer of these to manage.** We have a number of pests that affect our tomato production but our scientists tell us that only one of these pests is not already established in your country - the tomato fruit beetle, *Dispicetus tomatocus*.

We look forward to hearing from you soon and shipping our first consignment of delicious tomatoes to your country.

Information about the country suggests that they do produce large volumes of low cost tomatoes but the quality of the tomatoes is not always consistent, suffering from mechanical damage, varying ripeness, inconsistent size or shape, and pest injury and contamination. **Inconsistent quality suggests less than adequate production quality systems. This may make imposing effective measures in this area more difficult.**

Information about the tomato fruit beetle, *Dispicetus tomatocus*, indicates that the adults lay their eggs on mature or nearly mature fruit. Symptoms of infestation only become apparent several days later once the larvae begin to move under the skin of the tomato **Suggesting harvest or immediate post-harvest screening may not be an effective measure.** Larvae mature within 15 days unless the weather is cooler **tomatoes are refrigerated so larvae will diapause** than normal and the larvae go into a dormant stage surviving for up to 6 months **Good piece of information – this means that since countries are on opposite sides of world, up to 6 months diapause will mean pests can emerge to synchronize with environmental season in the importing country.**

## 9.9 GROUP EXERCISE 7 – RISK COMMUNICATION

This exercise is another opportunity for participants to become familiar with the role of communication and stakeholder consultation during PRA. It allows them to develop a strategy to learn the appropriate steps in stakeholder consultation and to plan, in advance, by thinking of different points of view on the same issue. It may provide an opportunity for them to discuss their own experiences with stakeholder consultation as well. The suggested time allotment for this exercise is 1 hour.

## 9.10 GROUP EXERCISE 8 – PEST RISK ASSESSMENT REVIEW

This exercise is an opportunity if there is time remaining in the week for participants to practice pest risk assessments using examples seen earlier. Breaking into three groups participants can work through the work sheets and do a quick pest risk assessment on one of the examples provided. The suggested time allotment for this exercise is 1 hour.

## **10. COURSE EVALUATION**

A course evaluation form (Appendix 2) may be given to participants to complete on the last day of the course. Information provided by participants will be used to improve the course materials and the way in which it is delivered for future participants. The results of this evaluation should be compiled and this along with a one page summary of the training course should be provided to the IPPC Secretariat ([IPPC@fao.org](mailto:IPPC@fao.org)) and the funding organization. This feedback will be used to monitor the course's success and make adjustments to it, as needed.

Explain the purpose of the evaluation and provide 15 – 20 minutes for participants to complete their evaluation.

A copy of the evaluation form suitable for printing is available on the CD that accompanies this manual.

## **11. APPENDIX 1 – TEMPLATE FOR GROUP EXERCISE 1**

The following pages are a template for making the definition cards that are given to the participants in group exercise number one. This template is also available on the CD of course material.

**Instructions for use:** This template is set print on index cards. If you do not have access to index cards or printers that can print on cards you can also print the template on paper and then cut each page into 3 pieces with a number at the top and the definition below it. These can then be laminated in order to be stronger.

1

An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest occurs at low levels and which is subject to effective surveillance, control or eradication measures

3

An official ongoing process to verify phytosanitary situations

4

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

5

Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products

8

The active enforcement of mandatory phytosanitary regulations and the application of mandatory phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests

9

Area in relation to which a Pest Risk Analysis is conducted

11

The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it

14

An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained

17

Any biotic entity capable of reproduction or replication in its naturally occurring state

25

Movement through a point of entry into an area

26

An area where ecological factors favour the establishment of a pest whose presence in the area will result in economically important loss

28

Evaluation of the probability of the introduction and spread of a pest and of the associated potential economic consequences.

32

Perpetuation, for the foreseeable future, of a pest within an area after entry

35

Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period

39

The process for determining whether a pest has or has not the characteristics of a quarantine pest or those of a regulated non-quarantine pest.

40

Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled

42

A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production

43

The entry of a pest resulting in its establishment

45

Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved

48

A type of plant, plant product, or other article being moved for trade or other purpose

49

A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots)

52

International standard for phytosanitary measures

54

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

57

Any means that allows the entry or spread of a pest

59

The principle of making available, at the international level, phytosanitary measures and their rationale

61

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

66

Evaluation and selection of options to reduce the risk of introduction and spread of a pest

69

Species capable, under natural conditions, of sustaining a specific pest or other organism

72

Part of an ecosystem with conditions in which an organism naturally occurs or can establish

23

**12. ANY LEGISLATION, REGULATION OR OFFICIAL PROCEDURE HAVING THE PURPOSE TO PREVENT THE INTRODUCTION AND/OR SPREAD OF QUARANTINE PESTS, OR TO LIMIT THE ECONOMIC IMPACT OF REGULATED NON-QUARANTINE PESTS**

## APPENDIX 2 – PRA TRAINING COURSE EVALUATION

Please take some time to complete the course evaluation. This information will be helpful to us in planning future courses and events. Your comments are appreciated.

### 1. My expectations for this course:

Were not met				Were exceeded
1	2	3	4	5

*Comments:*

### 2. The length of time (5 days) for the course was:

Not long enough				Too long
1	2	3	4	5

*Comments:*

### 3. The number of breaks each day was:

Not enough				Too many
1	2	3	4	5

*Comments:*

### 4. The time allotted for lectures and presentations was:

Not long enough				Too long
1	2	3	4	5

*Comments:*

### 5. The time allotted for break-out sessions was:

Not long enough				Too long
1	2	3	4	5

*Comments:*

### 6. What did you find most useful in this course?

*Comments:*

### 7. What did you find least useful in this course?

Comments:

**8. The student's manual was:**

Not helpful				Very helpful
1	2	3	4	5

Comments:

**9. The material presented will be helpful to my work in the following ways:**

Comments:

**10. Do you feel that you have gained the required knowledge and information to complete a PRA?**

Comments:

**11. Do you feel that you have gained enough knowledge and information to teach your colleagues to complete a PRA?**

Comments:

**12. Do you still have questions about PRA that were not answered by the course? (If yes, list them)**

Comments:

**13. Do you know where or how to find those answers? (If yes, indicate sources)**

Comments:

**14. Would you recommend this course to your colleagues?**

Comments:

**15. Additional comments and suggestions for future courses on PRA or other IPPC-related topics:**

Comments: