Climate-related transboundary pests and diseases

Expert meeting

Rome
25-27 February 2008

Infrastructure for Plant Health

Richard Ivess

AGPP, IPPC Secretariat

Pest (ISPM #5)

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

Quarantine pest (ISPM #5)

A pest of potential economic importance to the area endangered thereby and not yet present there, or [is] present but [is] not widely distributed and [is] being officially controlled

Movement and dispersal of plant pests

1 Natural spread

Tend to be "short-distance"

Examples include:

- **Wind**
  - **airborne spores**
- **Water**
  - **rain splash (e.g. *E. amylovora*)**
  - **irrigation (e.g. *Phytophthora* spp, *Fusarium* spp)**
- **Insects (as vectors for bacteria and viruses)**
  - **e.g. *X. fastidiosa* and glassy wing sharp-shooter**
- **Animals**
  - **weed seeds**

Movement and dispersal of plant pests

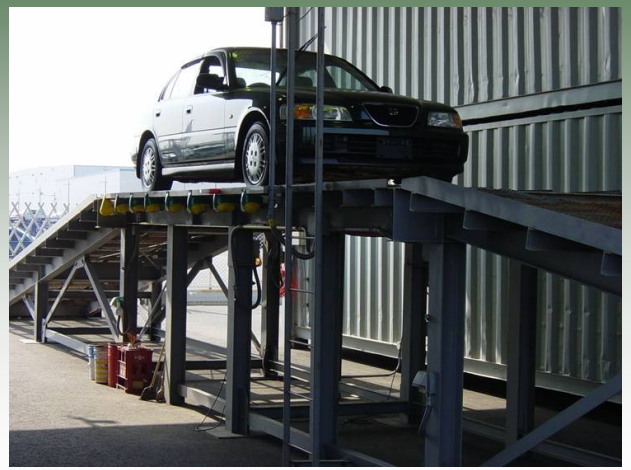
2 Human-assisted movement

Can be long distance (inter-continental)

Examples include:

- grafting, budding
- farm vehicles (e.g. PCN)
- containers
- packaging material (e.g. Asian long-horned beetle - *Anoplophora glabripennis*).
- international trade
  - fresh produce (e.g. fruit flies)
  - propagation material – rooted/non-rooted cuttings, budwood, (e.g. viruses, bacteria, fungi). High risk (quarantine)
  - seeds – high risk
  - used tyres (e.g. ATM)
- alternative hosts (e.g. *X. f.* has > 90)
- humans
  - workers (e.g. *X. axonopodis* pv *citri*)
  - tourists – high risk
- mail

Movement and dispersal of plant pests



Components of a phytosanitary system IMPORT

Activities	Commercial	Passengers and Mail	Illegal
International Agreements/Standards for Phytosanitary Measures			
Plant pest status information			
Import requirements (based on PRA)			
Supply countries' export certification systems			
Compliance checking (border inspection/quarantine testing)			
Biosecurity Direction, Biosecurity Clearance			
Compliance information feedback to suppliers countries			
Specific pest surveys			
Incursion response (including investigation and enforcement)			

Under control of the import/export NPPO

Effect of climate change on an IMPORTING country's phytosanitary system

1 International agreements/ISPMs

Set the "rules"

Include:

- **International agreements/treaties (e.g. WTO SPS Agreement, IPPC), ISPMs, national legislation**

Effect of climate change

- **A NPPO may:**
  - **increase its range/number of quarantine pests**
  - **be called upon to justify changing specifications**

2 Plant pest status information

- **Based on general crop surveys, public submissions, research organizations, etc**
- **Usually detect pests once they have established and dispersed**
- **Necessary to determine the "protected zone" and justify measures**

Effect of climate change

- **Extended range of new crops and associated pests to consider**
- **Extended range of a particular pest (effect on area freedom)**
- **Increased costs of surveillance, prioritisation**

Effect of climate change on an IMPORTING country's phytosanitary system

3 Import requirements

- Based on pest risk analyses

Effect of climate change

- The importing country will able to produce the same crops (suitable hosts and climate for the associated pests that previously may not have been able to establish)
- Strength of import measures for "new" commonly produced crops will probably increase
- Need to periodically review PRAs (revise measures)

4 Supply countries export certification systems

- The supply country is required to certify that the product to be exported is in compliance with requirements

Effect of climate change

- Non-quarantine pests may change their status to quarantine
- Increased number of pre-export activities to meet increased measures

Effect of climate change on an IMPORTING country's phytosanitary system

5 Compliance checking (border inspection/quarantine testing)

- Increased range and number of additional quarantine pests
- Increased resources required (staff and labs)

6 Clearance/direction

- Influenced by the ability (e.g. pest control) of the supply country to meet any strengthened phytosanitary measures

7 Compliance information – Feedback to supply countries

- Will be essential - Part of a quality management system to enable the supplier to successfully adapt to changing specifications and conditions

Effect of climate change on an IMPORTING country's phytosanitary system

8 Specific pest surveys

- Targeted at specific high impact pests (early warning - eradication)

Effect of climate change

- Increased range and numbers of pests to include in specific surveys
- Cost, capacity

9 Incursion response

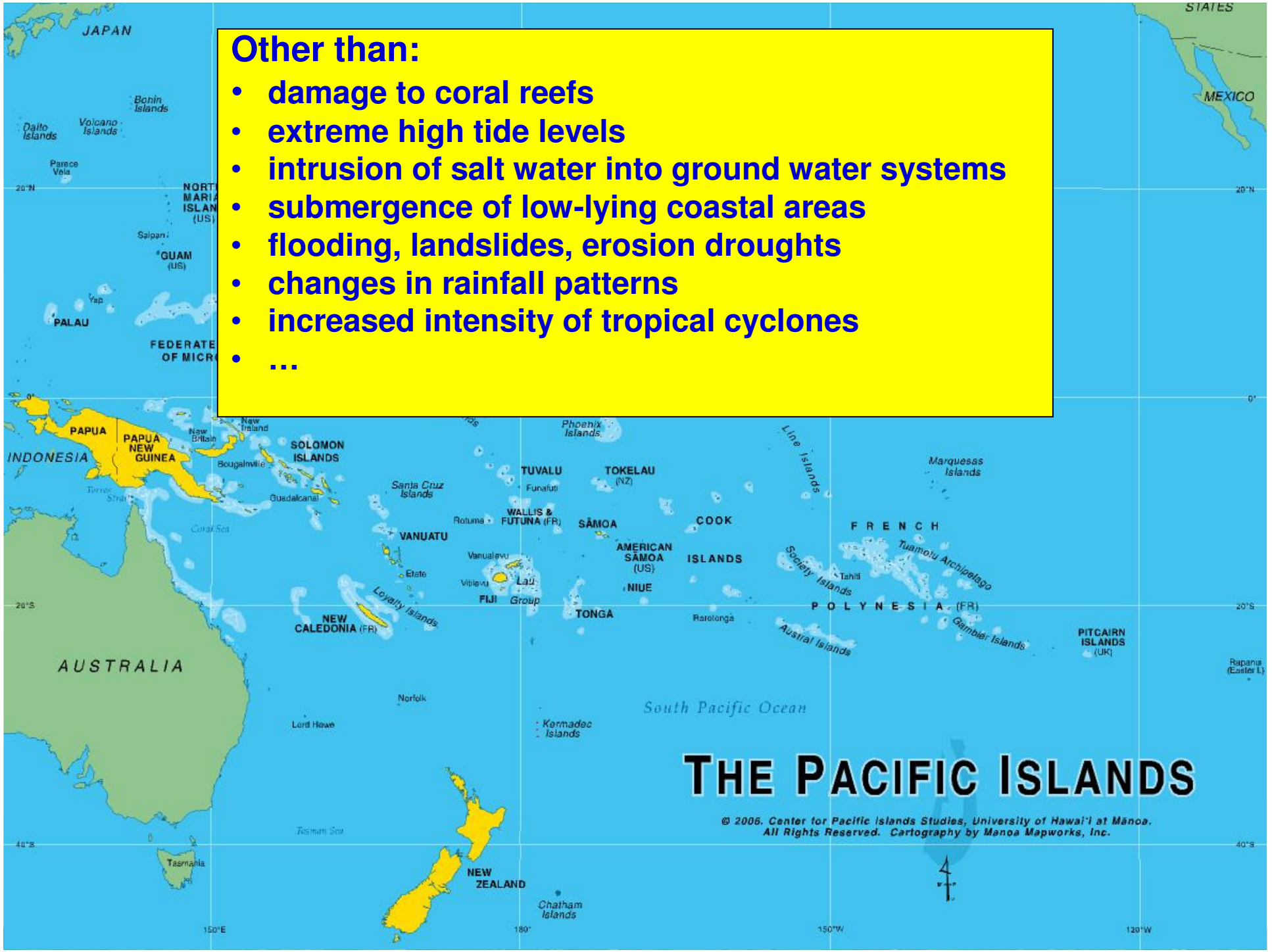
- Possible increased numbers and types of incursions
- Ability to successfully respond to two or more (same/different) at once

Components of an EXPORTING country's phytosanitary system

Activities	Commercial
International agreements/ISPMs	
Plant pest status information	
Importing country requirements (specifications)	
Export certification system (compliance)	
Compliance information - feedback from the importing country	

Under control of the export/import NPPO

Small supplier perspective


Other than:
• damage to coral reefs
• extreme high tide levels
• intrusion of salt water into ground water systems
• submergence of low-lying coastal areas
• flooding, landslides, erosion droughts
• changes in rainfall patterns
• increased intensity of tropical cyclones
• …
JAPAN
MEXICO
GUAM (US)
PALAU
PAPUA NEW GUINEA
INDONESIA
SOLOMON ISLANDS
VANUATU
NEW CALEDONIA (FR)
FIJI
TUVALU
TOKELAU (NZ)
WALLIS & FUTUNA (FR)
SAMOA
AMERICAN SAMOA (US)
COOK ISLANDS
NIUE
TONGA
FRENCH POLYNESIA (FR)
PITCAIRN ISLANDS (UK)
AUSTRALIA
NEW ZEALAND
South Pacific Ocean
THE PACIFIC ISLANDS
© 2006. Center for Pacific Islands Studies, University of Hawai'i at Mānoa.
All Rights Reserved. Cartography by Manoa Mapworks, Inc.

Effect of climate change on an EXPORTING country's phytosanitary system

1 International agreements

- Increase in disputes? Import measures will need to be technically justified

2 Plant pest status information

- Will be very difficult for some countries to survey!

Effect of climate change on an EXPORTING country's phytosanitary system

3 Importing country specifications

- Able to grow the supply countries' export crops

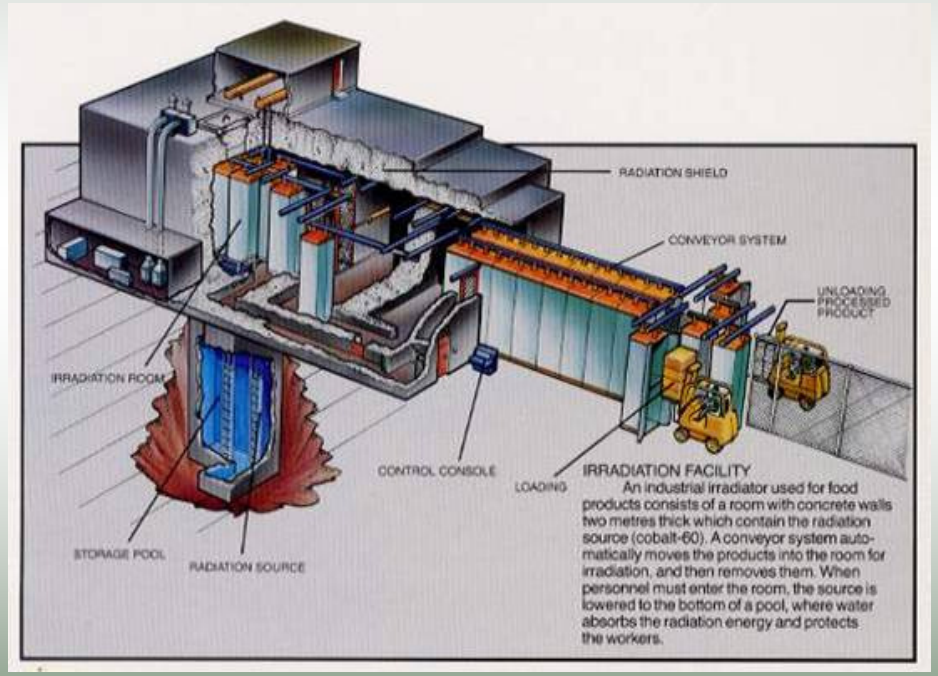
Effect of climate change

- Reduction in competitive advantage and possible loss of markets
- Marked strengthening of importer's phytosanitary measures

Effect of climate change on an EXPORTING country's phytosanitary system

4 Export certification system

- Increased number of pre-export activities to meet increased measures (increased cost of production)



Effect of climate change on an EXPORTING country's phytosanitary system

5 Compliance information – Feedback from the importing country

- **Will be essential - Part of a quality management system to enable the supplier to successfully adapt to changing specifications and conditions of the importing country**