



Phytosanitary issues in the forest sector

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The global pest problem

- Rapidly expanding global economy
- Liberalized trade access
- Efficient & rapid means of transport
- Widespread movement of large volumes of all kinds of raw materials & manufactured goods
- The use of standard shipping containers transporting infested organic materials



Pathways for introduction of forest pests

- Activities of the forest sector can contribute to the introduction & spread of forest pests through:
 - trade
 - forest utilization practices
 - the intentional introduction of species for commercial forestry, agroforestry & other purposes
 - inadequate forest surveillance



Pathways for introduction of forest pests

- Species intentionally or inadvertently introduced in association with silvicultural practices
- Movement of forest reproductive material (FRM)
- Wood packaging materials - **Now under better regulation**
- Timber
- Contaminants of forest fruits & seeds
- Other wood products – birdhouses, candleholders, baskets, furniture, Christmas tree stems



Species introduced in association with silvicultural practices

- Hundreds of tree species (many non-indigenous) introduced for afforestation, desertification & erosion control, & for the supply of fuelwood & other forest products
 - previously no risk assessment before introduction to new area or region
- Some of these species may escape cultivation & invade natural ecosystems



Species introduced for desertification control

Prosopis juliflora
in Kenya



Movement of FRM

- Major pathway for accidental introduction of forest pest species
- Effective testing (indexing) procedures required to ensure that distributed material is free of pests that are of quarantine concern
- *FAO/IPGRI Technical Guidelines for the Safe Movement of Germplasm*
 - *Acacias*
 - *Eucalyptus*
 - *Pines*



Movement of FRM



Bugwood.org

Phytophthora ramorum



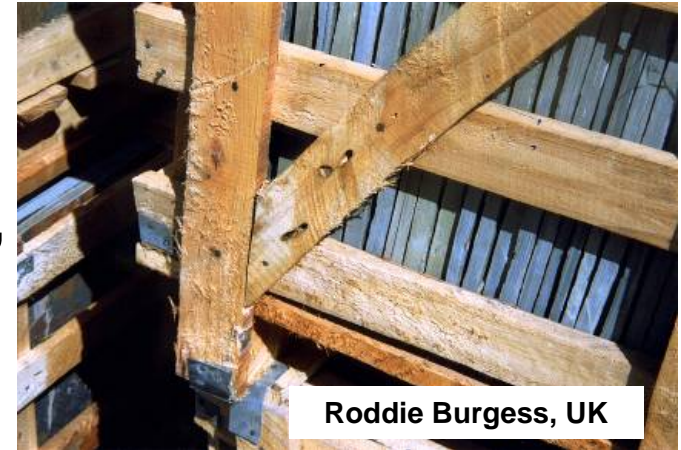
Glen et al., 2007

Puccinia psidii



Wood packaging materials

- Wood packaging material can be virtually any species of woody plant, in any state from fresh-cut to re-used, seasoned lumber & often use low-grade & scrap wood to minimize costs
 - Cargo shipments may therefore contain wood packaging material of various types, ages & from unexpected & multiple origins



Roddie Burgess, UK



Ken Wong, Canada



Wood packaging materials

- Solid wood can contain many different potential pest organisms - most pests that feed or occur in or on live or dead stems & branches of woody plants may be found in or on untreated wood packaging material
 - Risk may be even greater if intact bark is present



Wood packaging materials

- ALB, *Ceratocystis fimbriata*
- Movement of wooden spools on which wire rope used as chokers was moved. Numerous forest pests detected



Timber

- Major source of forest pests & pathogens
- Timber shipped in containers is a particular threat as the container provides additional protection & limits access for inspection
- Form of shipment also plays a role (treated timber is usually less risky than green, similarly square edged timber less risky than unsquared)
- Strict importation regulations necessary
- Risk analysis with regard to specific import routes may be appropriate



Timber

- Pinewood nematode
- Bark beetles, woodborers, bluestain fungi
- Soil on packaging



Contaminants of forest fruits & seeds

- Conifer cones, nuts, fruits of forest trees, etc. can harbour a wide variety of immature stages of insects
 - Detection & treatment techniques are available but not often used, since these products are not major commodities
- Commercial tree seed – little requirements
- Such material is often moved by tourists (e.g. as souvenirs or for planting in home gardens)
 - public education very important



Contaminants of forest fruits & seeds

- Douglas-fir seed chalcid, *Megastigmus spermotrophus* (Forster) (Torymidae), was probably imported via this pathway.
- Introduced to Europe from North America - becoming Europe's most important pest in conifer seed orchards



Global response

- Best line of defense in forest protection is prevention through international & national phytosanitary legislation
- International standard setting creates stable harmonized & uniform trading environment



Global response

- Movement of insect pests such as ALB led to creation of ISPM 15 & in turn ISPM 15 to a reduction in the movement of ALB
- Increasingly the IPPC is moving toward commodity specific standards that further involve the products in forest trade



Problems implementing ISPMs by forest sector

- In many countries, particularly developing countries & countries in transition, there is very little communication between NPPOs & the forest sector
 - usually reflected in general lack of communication between agriculture/environment & forestry
 - but miscommunications may also occur between NPPO & forestry sector in industrialized countries
- In some cases there is total unawareness of the existence of NPPOs & about ISPMs



Problems implementing ISPMs by forest sector

- There may be lack of interest or knowledge/ expertise of forest pests by NPPOs
 - NPPOs traditionally agriculturally based. Majority of quarantine restrictions are agriculturally focused
 - Usually reflected in lack of updates or input of new forestry pests into quarantine pest lists
 - no specific training of NPPOs in forest pest identification- i.e. what to look for
- ISPMs may be open to misinterpretation & misunderstanding



Misconceptions

- General misconception that IPPC is only concerned with trade issues & not environmental protection
 - also that it is aimed at the agriculture sector
 - applies to foresters, NPPOs & the industrial community
- Misconception about the term **plant** to refer to trees
 - thus also confusion about plant pests as generally conceived to be agriculture problems



Confusion

- Problem of definition of invasive species IAS
 - CBD or IPPC?
 - 4 regional networks exist mostly endorsed by the regional forestry commissions on forest invasive species - all have different definitions of invasive species
 - Africa (FISNA)
 - Asia & Pacific (APFISN)
 - Near East (NENFHIS)
 - South Cone countries (RCSEI)



Confusion

- Without prior knowledge it is difficult to find updates & to know what ISPM has been added, amended or revised
 - was difficult for us to trace latest versions
 - difficult to navigate the IPPC website



Forest sector response to ISPMs

- ISPMs may be seen by some as a constraint, i.e. may inhibit the movement of forest reproductive materials
 - realize that phytosanitary requirements are different from country to country & for different types of material moved
 - no awareness of bilateral process for trade agreements
 - little understanding that in-country controls should be equivalent with import requirements
 - e.g. regulations on imported commodities should not exceed the controls applied to domestically moved goods given the same pest risks



Forest sector response to ISPMs

- Awareness may be generated only when trade is affected, i.e. when countries started compliance with ISPM No. 15, then industry started to become involved
 - industry needs advance notice of new ISPMs which may affect trade



Consequences

- No real knowledge of need to report new forest pest introductions
 - takes us back to the problem of lack of communication with NPPO
 - lack of priority for forest health issues
 - reflected in lack of resources to monitor new incursions
- Still very common for foresters to carry seeds & even seedlings without thought of risk assessment
- Lack of import/export certification, i.e. when sending samples for identification



Consequences

- IFQRG constant request for membership from developing countries but difficult to get participation
- Lack of communication between researchers & the forestry sector also occurs in developing countries



A positive note where ISPMs will be used

- ISPM 3 in Kenya for importation of parasitoids for biological control of blue gum chalcid, *Leptocybe invasa*
 - KEFRI has long-term association with IIBC through introductions
 - but not generally known by neighbouring countries that certified quarantine facilities are needed to receive import of agents let alone compliance with ISPM 3
 - action plan: training course for neighbouring countries in Kenya once compliance has been achieved



Zvi Mendel



A negative note - where local quarantine regulations have loop holes

- Seychelles – illegal **transshipment** of non-debarked timber from W. Africa into Middle East with stopover in Mahe port under cover of night (6 days in 2000)
- no notification to MOA responsible for quarantine
 - made public through TV interviews
 - shipping company obliged to treat in port but too little too late
 - FAO Legal Dept. worked with national authorities to help revise regulations



A negative note - where local quarantine regulations have loop holes

Seychelles



What documentation is out there

- No specialized guidelines available on forest health practices
 - there may be recommendations on what to do but not how to do it
- Nothing available to give guidance on what to do, how to do it & how to use the valuable information in the ISPMs to achieve goals



What is needed by forest practitioners

- Easy access to information about which ISPM is related to what component of forest health management & possibly case studies or guides on how to do it/recommendations for action
- Written in simple language which is not open to misinterpretation with practical examples



What is needed by forest policy-makers & managers

- Need to minimize the movement of forest pests & reduce their negative effects without adversely affecting trade
- Require cooperation among governments, agencies, industry, research institutions, & private citizens around the world
- Requires proactive approach to prevent pest introductions by cooperating with foreign governments to identify potentially serious, high risk forest pests, monitoring populations in host countries & implementing measures to block important routes of introduction



What is needed by forest policy-makers & managers

- Significant research efforts needed to develop improved & innovative new approaches to regulatory & suppression procedures
- Need for a bridge between phytosanitary regulatory bodies (NPPOs) & the forestry sector



- HOW TO ADDRESS THE ABOVE?

