National Regulatory Frameworks
Pesticide Management and its
Implications for Food Safety and Trade

About the FAO Policy Learning Programme
This programme aims at equipping high level officials from developing countries with
cutting-edge knowledge and strengthening their capacity to base their decisions on
sound consideration and analysis of policies and strategies both at home and in the
context of strategic international developments.

Related resources
- See all material prepared for the FAO Policy Learning Programme
- See the FAO Policy Learning Website:
National Regulatory Frameworks

Pesticide Management and its Implications for Food Safety and Trade

By

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About EASYPol

The EASYPol home page is available at: www.fao.org/easypol

This presentation belongs to a set of modules which are part of the EASYPol Resource package: FAO Policy Learning Programme : Specific policy issues: Food safety policies and regulatory frameworks

EASYPol is a multilingual repository of freely downloadable resources for policy making in agriculture, rural development and food security. The resources are the results of research and field work by policy experts at FAO. The site is maintained by FAO’s Policy Assistance Support Service, Policy and Programme Development Support Division, FAO.
Objectives

- Explain common issues with pesticides and how these affect food safety and trade.

- Explain that issues related to pesticides need to be addressed at both the policy level and the farmer level, and what instruments are available.
Issues related to pesticides

- Agronomic risks (pest – pesticide - crop)
  Need for sustainable intensification of production

- Food safety and other public health risks
  (pesticide exposure; pesticide residues)

- Environmental risks
  (water contamination, biodiversity)

- Market access - Pesticide residue requirements are increasingly important in trade
  (Legal requirements and private GAP standards)

- Pesticide quality - Illegal trade in pesticides; counterfeit products

- Obligations under international instruments related to pesticides
  (E.g: Rotterdam and Stockholm Conventions)
Possible implications of not meeting pesticide residue requirements

- Shipping consignments rejected
- Supplier arrangements cancelled
- Image of countries as reliable source of safe agricultural produce tarnished

**NOTE:** The Maximum Residue Level (MRL) is often set at detection level if use of a pesticide is not permitted in the country concerned
Where do these pesticide residues come from?

- Overuse and abuse of pesticides
- Not respecting pre-harvest intervals
- Use of inappropriate pesticides
- Use of contaminated water
Resulting from....

Failures in the control system:

- Insufficient human and financial resources to implement/enforce pesticide regulatory control schemes
- Strong pressure from entities with a commercial interest in the sale of pesticides

Insufficient attention for alternatives:

- Lack of knowledge about pesticides and alternatives
- Insufficient resources to present alternatives to farmers (i.e. education in Integrated Pest Management)
- Limited availability of alternative products
Enforcement of pesticide legislation is often a problem

Highly hazardous pesticides on sale in 2006 in a country that officially banned these products in 2003.

Residues of these pesticides are likely to render agricultural produce unsuitable for export
Some field realities

Large obsolete stocks of pesticides dumped outside and leaking into a drainage canal (now cleaned up)

Sale of pesticides (including banned highly hazardous pesticides), by a person with no knowledge about pesticides

Boys applying highly hazardous pesticides without any of the prescribed protective gear
All such practices need to end
Use of agricultural pesticides in a country (the green box)

In-country uses for crop protection
Use of agricultural pesticides in a country

- Pesticide inflows
- In-country uses for crop protection
Use of agricultural pesticides in a country

- Pesticide inflows
- In-country uses for crop protection
- Pesticide outflows
Externalities of pesticide use

Pesticide inflows

In-country uses for crop protection

Local externalities

Pesticide outflows

International externalities
National policy development in response to externalities

- Pesticide inflows
- In-country uses for crop protection
- Local externalities
- National Policy
- Pesticide outflows

International externalities
Interaction between national and international policy development

- Pesticide inflows
- International Policy
- National Policy
- In-country uses for crop protection
- Local externalities
- International externalities
- Pesticide outflows
Pest and Pesticide Management Policy Development

**In-country uses for crop protection:**
- **Use** (justified, proper)
- **Misuse** (abuse, overuse)
- **Non-use** (obsolete stockpiles)

**National Policy Factors:**
- Pest management policy
- IPM training capacity
- Pesticide legislation
- Pesticide management capacity
- Phytosanitary legislation
- Pest surveillance
- Research agenda

- Public health and food safety
- Environmental protection
- Nature conservation
- Water quality
- Labour standards
- Export development
- Tariffs and taxes

**Local externalities related to:**
- Public and occupational health
- Water and soil contamination
- Ecological functions; biodiversity
- Sustainability of production
- Market access, export potential

**International Policy Factors:**
- International instruments
- Code of Conduct on Distribution and Use of Pesticides
- Stockholm Convention (POP)
- Rotterdam Convention (PIC)
- Montreal Protocol
- CODEX
- IPPC
- CBD

**International externalities:**
- Trans-boundary contamination:
  - International waters
  - Atmospheric
- Contaminated export produce

**Pesticide inflows:**
- Private sector importation
- Public sector importation
- Aid donations
- Illegal trade

**Pesticide outflows:**
- Legal trade
- Illegal trade
- Aid donations
- Disposal operations
- Residues on export crops
- Trans-boundary movement of contaminants

**Aid policies and programs:**
- Donors
- Development Banks
- NGOs

**Trade requirements:**
- MRLs - Food safety
- GAP
- Labor standards
Policy development is all about........

Risk reduction

Health
Environment
Agronomic
Examples of how to achieve pesticide risk reduction

Field level
- Promotion of Integrated Pest Management (IPM) (Resource allocation to education, extension and research)
- Enhance access to alternative pest management approaches and products
- Proper and rational use of pesticides, if pesticide use is justified

Regulatory control
- Pesticide legislation and its enforcement
- Regular review of list of registered pesticides

Non-regulatory measures to improve product selection
- Enhance awareness about, and access to, none or less hazardous alternatives
- Financial incentives/disincentives (taxes, subsidies)

Promotion of GAP (Crop protection based on IPM)
Remember....... change of field practices is key

- Reducing pesticide residue levels on crops

Needs changes in production practice
Monitoring residues alone is not enough!

Efforts to reduce pesticide residue levels need to include measures that enable farmers to produce differently !!!
Economics of pesticide use

**Benefits**
Reduce crop losses

**Costs**
Health
Environment
Agro-ecology
Trade
Economics of pesticide use and the role of Government

Benefits
- Reduce crop losses

Costs
- Health
- Environment
- Agro-ecology
- Trade

Role of Government
- Secure agricultural production - Minimize pesticide costs
- Finding a balance
Common causes of imbalances ..... and how these could be corrected

Benefits of pesticides
- Reduce crop losses

The viability of alternative pest management approaches is often not fully understood. Consequently, the benefits of pesticide use are often over-estimated.

REMEDY: Demonstrate effectiveness and economic viability of alternatives (IPM, biological control) and the potential for pesticide reduction\rationalisation.
The magnitude of social costs of pesticide use is often not fully understood and consequently under-estimated.

**REMEDY:** Better assessment of social costs: Research, surveys, data-collection to quantify costs. (E.g.: residue testing of crops; monitoring of poisoning incidences; assessment of environmental impact.)
Government use of policy tools to restore balance

Use policy tools to restore balance

Benefits
- Reduce crop losses

Costs
- Health
- Environment
- Agro-ecology
- Trade

Role of government
- Secure agricultural production - Reduce pesticide costs
- Finding a balance
- Better estimation of true costs and benefits

Resource allocation
Incentives/Disincentives
Example: Indonesia – Effect of effective use of policy tools

Rice production (dots) continues to increase while pesticide use (bars) is drastically reduced.

Tools included the phasing out of subsidies for pesticides, restricting use of certain pesticides and investment in IPM.
FAO’s integrated approach

Policy reform

- Strengthen regulatory control of the importation, distribution and use of pesticides
  (including the phase out of highly hazardous pesticides)

Farmer education

- Promotion of IPM to:
  - eliminate pesticide overuse,
  - reduce reliance on pesticides,
  - phase out highly toxic products
Policy reform: FAO involvement – at the global level

- Provides reference framework for regulatory control of pesticides: International Code of Conduct on Distribution and Use of Pesticides, and supporting Technical Guidelines
- Secretariat of the Rotterdam Convention (Pesticides)
- Secretariat of the International Plant Protection Convention
- Codex and JMPR
- Promotes IPM to reduce reliance on pesticides
- Prevention and disposal of obsolete pesticide stocks
International Code of Conduct on the Distribution and Use of Pesticides

- Adopted in 1985, revised in 2002
- Specifies responsibilities of governments, pesticide industry and other stakeholders – Voluntary, but endorsed by industry and NGOs
- Addresses the need for a cooperative effort to promote practices that minimize potential health and environmental risks associated with pesticides, while ensuring their effective use.
- Specifically addresses: Regulatory and technical requirements; reducing health and environmental risks; testing of pesticides; availability and use; distribution and trade, information exchange; labelling, packaging, storage and disposal; advertising; monitoring and observance of the Code.
FAO involvement at national or field level

1. Technical assistance to help strengthen the regulatory control of pesticides.

2. IPM capacity building

   FAO has supported the promotion of Integrated Pest Management (IPM) for over 3 decades, and assisted with the development of IPM programmes in over 50 countries.

Regional Programmes: Rice, cotton, vegetables

FAO now considers IPM as an integral part of pesticide risk reduction.
Private sector example on benefits for food safety

Campbell Soup: Samples out of Tolerance (%)

Introduction of IPM from 1990/1991 onwards

Production Year
Lessons learned from IPM programmes

- In most cases, there is significant pesticide overuse that can be eliminated without loss in crop production.
- Broad adoption of IPM requires policy reform.
- Promotion of IPM requires farmer education. Introduction of IPM can start with simple measures and then gradually develop into more complex approaches.
- Three principles: (1) Grow a healthy crop; (2) Manage the agro-ecosystem to suppress the build-up of pests; (3) Decisions to apply inputs are made locally, are based on monitoring of pest incidence and are site-specific.
- Formation of networks for exchange of information and experience is important.
Pesticides are an important focus of SAICM.

SAICM requirements related to pesticides largely overlap with provisions of the International Code of Conduct on the Distribution and Use of Pesticides.

The agricultural sector needs to be an active key partner in any plans to implement SAICM. This should be reflected in resource allocation for SAICM implementation.

It needs to be recognized that pesticide problems are known and that much is already happening. However, funding often is a constraint.
Overuse and abuse of pesticides represent unnecessary costs to health, the environmental and agricultural production. Pesticide use can often be reduced without affecting agricultural production.

Pesticide residues affect food safety and export potential. Pesticide residue issues need to be addressed, both at regulatory and farmer-level.

Risks associated with pesticide use can be reduced through
1. elimination of unnecessary pesticide use
2. selection of less hazardous products
3. proper use of these products

Issues with pesticides can often be prevented. This requires policy reform.
Note to users

This module was prepared for “classroom” presentation at a FAO training course for policy makers. Additional information and explanation was provided verbally during the presentation.

The Module was not designed as a distance-learning tool.
Further reading

**International Code of Conduct on the Distribution and Use of Pesticides**

**Guidance on Pest and Pesticide Management Policy Development (under preparation)**