

# FAO's experience on standards for agricultural equipment

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## Outline

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- Brief introduction to FAO
- Testing, evaluation, standards & FAO involvement
- A case of pesticides application
- Conclusion

# What is FAO?

## The Food and Agriculture Organisation

**Vision :** *a world **free of hunger and malnutrition** where food and agriculture contributes to improving the living standards of all, especially the poorest, in an **economically, socially** and **environmentally sustainable manner.***

- ✓ Specialised technical agency of the United Nations
- ✓ Neutral forum for international negotiation agreement and debate policy
- ✓ Knowledge and information HUB for agricultural and related **activities**





## FAO's 5 strategic objectives



**SO1** – Help **eliminate** hunger, food insecurity & malnutrition



**SO2** – Make agriculture, forestry and fisheries **more productive & sustainable**



**SO3** – **Reduce** rural poverty



**SO4** – Enable **inclusive & efficient** agricultural & food systems



**SO5** – Increase the **resilience** of livelihood to disasters



## Introduction to testing, evaluation & standards

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- **Testing:** Analysis of behavior of a machine compared with well defined standard under ideal & repeatable conditions
- **Evaluations:** Measurement of machines performance under real farm conditions
- **Standards:** used to ensure that machines/equipment/implements etc. are consistently fit for their purposes



Provide growers, manufacturers, government agencies with:

- Appropriate
  - Practical
  - Consistent
- } Quality assurance system for agric. equipment



## Introduction to testing, evaluation & standards

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- Pay attention to:
  - operator & environment safety
  - Include durability tests (in case of safety implication)
  
- The FAO guidelines are based on:
  - Existing international standards
  - European and National standards
  - Published references
  - Subject matter experts knowledge and experience





## FAO's contribution to machinery testing

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- FAO recognizes the fundamental role of
  - selection
  - testing and
  - evaluationof agricultural machinery
- 1992 Panel of Experts on Agricultural Engineering met in FAO to examine the topic
- The outcome comprised two publications:
  - AG Services Bulletin 110 on the **Principles and Practice**
  - AG Services Bulletin 115 on the **Theory**





## It starts with machinery selection

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- A user-based activity
- Selection success depends on access to reliable information (where from?)
- Process is demand-led and not top-down





## Machinery testing

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- By whom and for whom?
- Who benefits?
  - Manufacturers (supply-side)? or
  - consumers (farmers) demand-side?
- Farmers need **reliable information** on machine performance in the field.
- Testing should target the following aspects
  - functional,
  - field and
  - comparative



## Machinery Evaluation

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- Evaluation for a machine user takes account of:
  - technical performance parameters (from both functional and field tests),
  - information on costs, user friendliness, support services (*needs and availability*), social acceptability, environmental impact and other, site-specific characteristics.





## Machinery Standards

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- The purpose of standards
  - to provide consumers with an assurance of “**fitness for purpose**”.
  - provide manufacturers with a product specification.
  - Standards serve as a reference point against which features of a product can be compared.
- Common features include:
  - Dimensions
  - Quality of materials
  - Health & safety aspects
  - Functional characteristics & field performance



## Standards – Advantages & Disadvantages

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- Although government-imposed Standards may impede progress and raise costs, standards that protect users are of great importance.
- Testing should be left to the private manufacturing sector
- Particularly relevant is the case of agro-chemical sprayers



## The Problem – A case of pesticides

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- Pesticide use in tropical and subtropical countries is increasing
- Pesticides are considered dangerous and harmful

### **Reality:**

- Safety and quality standards are not necessarily adhered to
- Few countries have regulations in place to control, how pesticides are actually used in the field





## The Reality in the field:

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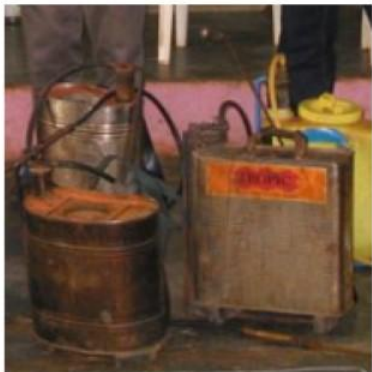
- Low quality spray equipment is on the market
- Maintenance of spray equipment is insufficient or non-existent
- Operators of spray equipment are unskilled or with little knowledge about the principles of pesticide application

## The Reality in the field:

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### Spray equipment of low quality on the market

- Unsafe design
- Leaking
- Poor durability
- Lack of quality control



## Consequences:

- Health hazards for operators and rural population
- Incorrect, inefficient and patchy applications featuring:
  - Bad practices
  - High number of applications
  - Waste of pesticides, environmental contamination
  - High risk of residues

➤ **Pesticides create hazard for humans and environment**

➤ **Increasing cost of production**







## Conclusions

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- Testing procedures should be unified and protocols standardized in order to be useful
- Countries should take actions for the benefit of the national consumers as well as to secure export markets
- Private sector and public sectors have to find a common procedure & move forward together
- Should private sector should play a more active role in handling testing?

# Thank you for your Attention!

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