

Environmental and Social Risk Assessment in pesticide use



Pests attacks in planted forests affect productivity and the supply of wood, fiber, and energy

The global population is expected to reach 8.6 billion by 2030, and 9.8 billion by 2050 (UN). This rapid growth will boost demand for forest-based products, which are essential in our daily lives - from paper and packaging to wood up through fiber and renewable energy. Planted forests to productive purposes represent only 7% of global forested areas, which is the equivalent of 278 million hectares (FAO, 2015). However, they are responsible for providing 33% of the wood traded worldwide.

To meet the growing demand for forest products, plantations must be more productive and managed sustainably. In other words, we must continue to use a model that produces more with fewer resources – aiming to achieve the balance, maintenance and conservation of environmental services.

One way to ensure forest productivity is to protect them from attacks by pests that cause economic, social, and environmental damages.



Pest is any type of competing weed, insect, or pathogen (virus, fungus, or bacteria) that affects the growth and development of plants or plant parts.

In tropical regions - like most part of Brazil - the climate is propitious to the spread of pests, providing the ideal habitat to their multiplication and thereby more intense attacks and consequent damages.

To minimize these damages, adoption of Integrated Pest Management (IPM) is critical. IPM responsibly combines different techniques to protect forest plantations against pests. These techniques are based on monitoring, assessment of the real need for control, and careful selection of the method to be used, including pesticides.





Healthy forest

Social, environmental, and economic benefits provided by a healthy and well-managed forest.



Social

- ✓ Generates jobs and income throughout the entire production chain, from the forests to the industry;
- ✓ Includes small and medium-sized local producers in the production chain through forest partnership programs;
- ✓ Development of local communities;
- ✓ Social projects in the areas of health, education, culture, and quality of life.



Environmental

- ✓ Conservation of natural forests and biodiversity;
- ✓ Restoration of degraded areas;
- ✓ Generation of environmental services such as carbon stock and sink, conservation of soil and water resources, nutrient cycling, and ecological corridors.



Economic

- ✓ Highly productive forests utilizing Integrated Pest Management (IPM).

Diseased forest

Social, environmental, and economic damages caused by forest pests attacks.



Ant



Virus



Fungus



Bacteria



Competing Weeds



Termite



Beetle



Caterpillar



Social

- ✗ Reduced supply of wood - the raw material for forest-based products - and consequent increase in prices;
- ✗ Fewer jobs and lower income.



Environmental

- ✗ Soil degradation;
- ✗ Less carbon captured and stored.



Economic

- ✗ Up to 50% productivity loss when compared with healthy forests.

Environmental and Social Risk Assessment is an important approach for ensuring safe use of pesticides

Environmental and Social Risk Assessment (ESRA) was recognized in 2014 by the FAO as an efficient way of assessing and minimizing the risks of using pesticides.

When pesticides are necessary, the ESRA analyzes the risks they may pose to human health and the environment based on related legislation, weather conditions, doses, and the application method and site.

This approach is based on internationally-recognized technical and scientific knowledge, and its use should be encouraged.

With ESRA, the hazard and exposure are analyzed for each pesticide in an integrated manner that considers local characteristics to ensure that their application is done in an efficient, effective, and secure manner.

HAZARD x EXPOSURE = RISK

The hazard is related to the toxicological properties of the pesticides, which cannot be changed. Just like any medication, if pesticides are misused they can pose a risk to humans and to the environment.

Exposure is how the pesticide is used: the formulation and dosage of the product, use of Personal Protective Equipment (PPE), climate conditions, equipment, and the site, frequency, and application method.

Risk is the interaction between hazard and exposure. To minimize the potential risk, in addition to assessing the toxicological properties (hazard) of a pesticide, it is essential to use the substance correctly (exposure) in accordance with proper management practices.

The first alternative to minimize risk is to reduce the hazard: namely, to change the pesticide. If this is not possible, it is essential to reduce exposure.



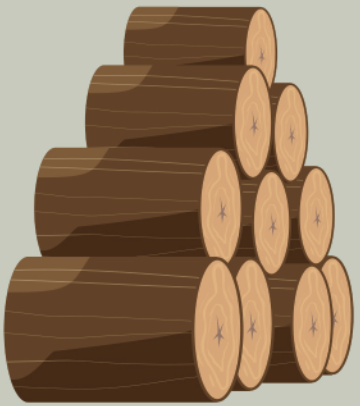
Pesticides can pose low risks if used correctly



Benefits of Environmental and Social Risk Assessment



- + Wide-ranging assessment that considers not only the hazards of the product, but also the site and application method;
- + Risk assessment based on real-life local or regional conditions where the product is applied;
- + Clear mapping based on real data on the potential risks to human health and the environment;
- + Guarantees ongoing implementation of the best management practices to minimize exposure to humans and the environment;
- + Continuous improvement of treated areas by the means of monitoring;
- + Generates data that make pesticides use more transparent;
- + Ensures forest productivity and continuity of the social and environmental benefits that forests provide;
- + Incorporates and applies scientific concepts to pesticide use.

A stack of several logs, showing the cross-sections of the wood, symbolizing forest-based products.

By using the Environmental and Social Risk Assessment in the application of pesticides, planted forests will continue to meet the demand for forest-based products ensuring the safety of people and the environment.