



# Biodiversity or Agrobiodiversity - a guide for SRTP Users

## What is Biodiversity?

Biodiversity (also called Agrobiodiversity when linked to agriculture) is "**The number of different species of organisms in a particular environment**", from mammals and birds to bacteria, plants and fungi. It also refers to diversity at the level of genes, species and habitats and the finely balanced relationships that have evolved between them.



*Image source: [Peabody University](#)*

## Why is it important?

Biodiversity is fundamental to the ecological services that all species, including humans, rely on for survival.

Reducing biodiversity may affect our future supplies of food, water, wood and fibre, increase risks of flooding and climate change, and reduce our quality of life. Yet biodiversity has been declining at an increasing rate over the past century as a result of human impacts. The decline has proven almost as difficult to quantify accurately as it is to reverse.

## How does it impact on our business?

Companies both depend on and impact on biodiversity through using natural resources directly or indirectly. The '**business case for conserving biodiversity**' rests on three broad issues:

- **Sustainability:** we need to understand the ecosystem services we rely on and preserve them for future use, to avoid any risk of failure in the supply of resources we obtain from them, and others depend on.
- **Meeting stakeholder expectations:** we need to avoid reputational risks that arise when a company fails to manage biodiversity well. This will bring benefits in terms of stakeholder relations, staff recruitment and retention, investor confidence, share value, and access to markets, finance, and resources such as land.
- **Regulatory compliance:** a proactive approach to biodiversity conservation allows us to stay ahead of the regulations with a lead-time for planning any necessary changes.

## **International focus**

The 1992 “Rio Earth Summit” was attended by 152 world leaders which led to the signing of conventions on biological diversity and desertification, the results are brought together through the Convention On Biological Diversity. ([www.cbd.int](http://www.cbd.int))



*Image : Open source*

## **What can a company do?**

([click here](#) for a Glossary of terms and Key concepts)

The best starting point for all suppliers is the Countries profiles page on the Convention On Biological Diversity website. This site links to all signatory countries and will give you an overview of the current situation in your origin.

All signatories are expected to at least have a Biodiversity Action Plan (BAP) listing key BAP species in the country. Check what your country is doing here - <http://www.cbd.int/countries/>

Companies can contribute positively to biodiversity in several ways. In all cases top level endorsement and commitment, and realism in targets and allocation of resources will be essential. Companies may need support from Government services, universities or conservation organisations, or consultants with appropriate ecology or conservation skills.

Habitat and landscape conservation are becoming increasingly important in agriculture and it is easy to be confused by the proliferation of schemes and initiatives, however a systematic approach will help companies make a difference.

**Companies can improve their biodiversity performance on the SRTP programme by:**

1. Developing a clear written **policy** that recognises and sets out terms for addressing the issues.
2. Carrying out an **assessment of biodiversity risks and opportunities** for the complete production and processing cycle. (Biodiversity Risk Assessment) (Sample pro forma at: [www.leafc.com/downloads.htm](http://www.leafc.com/downloads.htm) )
3. Developing a **biodiversity action plan**, based on the findings of the biodiversity risk and opportunity assessment.
4. Reviewing and improving performance on **Integrated Crop Management** where it impacts on biodiversity.
5. Identify key **biotic indicators** in the growing and processing areas. These should be cross referenced to any key species identified in the countries Biodiversity Action Plan (if available) (<http://www.cbd.int/countries/>)
6. Identify **Local Environmentally Sensitive Sites** – are these being monitored by someone else? – can the company get involved?
7. Instigate **monitoring of biotic species and other impacts** on biodiversity.



Image source: [Ben:Flickr](#)

*Remember Indicators of biodiversity impact do not have to be species of plants, animals and micro-organisms, they can be linked to activities highlighted in the other sections of Agronomy such as erosion and leaching control methods, IPM implementation, water turbidity etc.*

8. Develop **policies** for the **protection and enhancement of habitats** in growing areas and **begin habitat monitoring**.

*Leafc have made a habitat monitoring package available for download here: [www.leafc.com/monitoring.htm](http://www.leafc.com/monitoring.htm) . This package will need some changes to make it relevant to your country's situation.*

9. **Collate, review, analyse data** to create a report **and publish findings** on the company's effect and impact on regional biodiversity.

## **Glossary of Terms and Key concepts**

A number of concepts are important to understand in the context of biodiversity conservation.

**Ecosystem:** a functional unit consisting of all the living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size - a log, pond, field, forest, or the earth's biosphere - but it always functions as a whole unit.

**Ecosystem Services:** Beneficial functions that are performed by natural ecosystems, such as maintenance of hydrological systems, protection of the soil, breakdown of pollutants, recycling of wastes, nutrient cycling, production of resources such as food, fibre and timber, and regulation of climate.

**Indigenous, native or local species** occur naturally in a particular geographic region or habitat type. For example, eucalyptus trees are indigenous to Australasia, but are planted and sometimes naturalised (reproduce without the need for cultivation) in other parts of the world, where they would be described as non-native, exotic or introduced species.

**Endemic species:** are only found naturally within a given geographical area or habitat type. For example, some tropical forest frog species are endemic to areas of only a few kilometres.

**Indicator species:** are considered to be good measures of the health of an ecosystem. Once identified for a site, they can reduce the amount of monitoring required, though they are no substitute for comprehensive monitoring. For instance, worms can be good indicators of the quality of soil and absence of pollutants. Aquatic insects such as dragonfly larvae are good indicators of the cleanliness of flowing freshwater. Native tree species are poor short-term indicators of change, but provide a useful guide to the former composition of natural forest in agricultural areas.

**Keystone species**, as the name suggests, have a significant influence on many other species within an ecosystem. Their loss could have serious knock-on effects, so it is important to recognise them and ensure they are incorporated in monitoring.

**Invasive species** become problematic when introduced to an area where they do not naturally occur. In this new habitat, they may become dominant, often wiping out native species. Invasive species have been introduced deliberately - e.g. as pets or garden plants, and more recently as biological control agents - or inadvertently through the increase in global transport. IPM bio-control agents are chosen for their ability to eradicate other species, and can create more problems than they solve. National regulations exist to assess and licence those that can be used.

**High biodiversity value areas:** areas where there are high levels of biodiversity, of endemism, rarity or fragility of ecosystems and species. These may or may not lie in protected areas and may include areas of sensitivity for cultural or reputation reasons. They may be legally protected at a local or national level, or may be defined by recognised conservation organisations

**Protected Area:** An area of land or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means.

**Environmentally sensitive sites:** a general term covering protected areas and areas of high biodiversity value, but also sites such as river banks where there is a high risk of negative impacts.

**Hazard:** Something with the potential to cause harm.

**Risk:** The chance of harm being caused by a hazard.

**Risk Assessment:** A structured and systematic procedure for identifying hazards and evaluating likelihood and consequence in order to prioritise decisions to reduce risks to a tolerable level.