

So, how does this unnatural, fast loss of diversity happen?:

- Habitat loss; All species have specific nutritional and environmental needs. The more specific and localized these needs, the greater the vulnerability of species to loss of habitat (i.e. the place where the species naturally occurs) to agricultural land, livestock, roads and cities.
- Invasion of non-native species; Species that are complete stranger in certain areas and that are introduced either accidentally or on purpose can cause great havoc in their new environment, due to lack of predators or competition for food resources for instance. It can cause domino effects by wiping out certain species on which other species again depend for survival in a different way.
- Climate change affects the distribution of species; Due to changing temperatures and rainfall patterns species that were comfortable in a certain area will now feel less comfortable there. Some more mobile and well distributed species will manage to shift their natural habitats to other areas, others will die out. Considering species co-exist and are dependent on each other, these shifts can have great effects on local biodiversity.
- Other significant threats are pollution, which brings ecosystems out of balance and weaken organisms (reproductive) health, and over-exploitation, i.e. harvesting more than the system can naturally recover from, like over-fishing, over-hunting and over-harvesting. ◀

About ABCIC

ABCIC's vision is that biodiversity is conserved and sustainably utilized thereby contributing to poverty alleviation, socio-economic development and environmental conservation in Africa.

Our mission is to promote and facilitate the adoption of innovations and technologies for biodiversity conservation and utilization by institutions and rural communities in sub-Saharan Africa for sustenance of livelihoods, income generation, food security and environmental conservation.

We implement our mandate through applied research, technical advice and strengthening of African institutions involved in biodiversity conservation and use, value chains and capacity building. We develop strategic partnerships and work in close collaboration with a network of partners for synergy and making the best use of competitive advantages.

ABCIC would like to thank CIC Insurance Group for funding the development of this brochure



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What is biodiversity?



Why is it so important?

How can we use it?

What is threatening biodiversity?

Biodiversity is ...

... the variety of life forms on earth. Biodiversity is short for biological diversity, and includes the variety of all living things; the different plants, animals and micro organisms, the genetic information they contain and the ecosystems they form.



Biodiversity refers to the genetic diversity, species diversity and ecosystem diversity at the same time.

- **Genetic diversity** is the variety of species, the difference *between* them, and the differences *within* species. Each individual has a unique collection of genes or genetic composition present in all its cells. Genes define to what extent the organism is different from or similar to another organism, whether visible or hidden. This diversity is a very important resource and is the potential of a species to adapt to new circumstances and it can also be used as raw materials for developing new crop varieties.
- **Species diversity** refers to the variety of species present. Even species diversity is not

always easy to see, it needs careful study: did you know for example that 99% of the animal species are invertebrates (animals without backbones) and most of them are insects? Insects play a very important role in ecosystems, as pollinators, decomposers, scavengers and as a source of food for other species. Also, many species live underground, in water or inside other organisms.

- **Ecosystem diversity:** An ecosystem is a community of organisms interacting with each other and their environment; it is a complex unity. Ecosystem diversity is the variety of ecosystems in an area: a large ecosystem like a forest can have smaller ecosystems within it, like a pond.



Why is biodiversity important?

Ecosystems provide us with all kinds of things, for free, such as:

- **Ecosystem services** (e.g. protection of water resources, soils formation and protection, nutrient storage and recycling, pollution breakdown and absorption, contribution to climate stability, resilience (recovery from unpredictable events))

- **Biological resources** (e.g. food, timber, medicines, cosmetics, ornamental products, as well as species and genetic diversity that are a source of breeding materials and valuable for future "use")
- **Social services** (e.g. cultural value, tourism and educational value)

Biodiversity boosts ecosystem productivity. By conserving biodiversity, we are preserving a whole range of services and resources. Many of these services and resources have such value or are so complex, that we would not even know where to start if we were to replace them.

What is threatening biodiversity?

According to the World Conservation Union (2011) just over 1.7 million species are known, i.e. those species are described and labeled by scientists. However, estimates of the number of species that actually exist range between 10 and 30 million. Whether 10 or 30 million species, the fact is that a large part of biodiversity is still unknown to us. What we do know is that biodiversity is threatened by unnatural, fast loss of diversity and extinction of species.

