

Maintaining Ecosystem and Biodiversity

- It is important that biodiversity is maintained at a high level to make stable ecosystem.
- The increasing human population and the activities of humans (including **waste production, peat bog destruction, deforestation** and our contributions to **global warming**) are causing a **reduction** in global and ecosystem-level biodiversity
- These activities are considered as **negative** human interactions with ecosystems
- There are some programmes to minimise the human destruction and maintain ecosystem and biodiversity

1. **Breeding programmes:**

- **They are in place to preserve endangered species.** As habitats have been lost, humans are attempting to repair some of the damage.
- Animals such as the Arabian oryx and the panda have been kept alive by breeding programmes in zoos.
- Here, animals are looked after well and helped to breed to keep their species alive and are protected from being hunted too.

2. **Habitats Protection:**

- National parks and nature reserves are made in order to protect certain endangered habitats like mangroves.
- **Hedgerows and field margins are replanted.** When farmers grow only one type of crop, hedgerows and field margins are replanted as they provide a great habitat for many organisms. This increases biodiversity.

3. **Preventing Global warming:**

- Reduction of deforestation has led to carbon emissions and production of greenhouse gases.
- Reducing deforestation has led to an increase in the numbers of certain habitats. This has increased biodiversity.
- By reducing carbon emissions and production of greenhouse gases, there could be a reduction in global warming e.g. renewable sources of energy can be used instead of burning fossil fuels.

4. **Reducing Waste materials:**

- Recycling resources has reduced the amount of waste in landfill, which reduces land pollution.
- Reducing sulphur dioxide pollution. This reduces acid rain and can be done by burning coal with less sulphur dioxide in power stations or removing some of the sulphur dioxide before it is burnt or by preventing sulphur dioxide being released from chimneys by installing 'scrubbers'.

Conflicting Pressure effect: How Biodiversity is maintained

- There are many conflicting pressures on maintaining biodiversity. Some examples include:

1. The cost of programmes:

- Protecting biodiversity can be very **expensive**.
- Eg. the land used for field margins could be used by farmers to grow crops and sell them – governments sometimes pay farmers a **subsidy** to make up for the lost money.
- It costs money to check that programmes designed to maintain biodiversity are actually being followed

2. Protecting food security:

- Land that is **protected** to maintain biodiversity could instead be used for **farming** – this can cause **conflict** in areas where there are food shortages.
- Sometimes organisms seen as a **threat** by farmers (eg. locusts and wolves) are killed to protect crops and livestock – this can negatively affect food chains / biodiversity and can cause **conflict** when species that are **already under threat** due to hunting or habitat loss are involved (eg. lions in parts of Africa)

3. The development of society:

- Increasing amounts of land are required to **sustain the increasing human population**.
- Eg. land required for new **housing developments** or for new **agricultural land** in developing countries.
- This high demand means that land with **undisturbed habitats** and high biodiversity is **increasingly being used** for development.

4. The effect on local Economy:

- Protecting Biodiversity may come at a cost to local people livelihood.
- Eg, reducing the deforestation is great for biodiversity but the people who were employed in the tree-felling industry could be left in-employed
- This effect the local economy if people move away for the work.

Biodiversity Benefits

BUILDING MATERIALS
Most of the raw components come from natural process

FIBRES AND TEXTILES
Textile industry worth >\$1000 billion
>25% fibres produced are natural

MEDICINES
>75% of our most important medicines come from natural sources

ENVIRONMENT MAINTENANCE AND POLLUTION REMEDIATION
Ecosystem services are valued at >£103 trillion a year

PSYCHOLOGICAL IMPROVEMENT AND ENJOYMENT
Revenue from tourism and nature activities

FOOD AND DRINK

ENZYMES – INDUSTRY PROCESS, COSMETICS ETC

PESTICIDES AND PLANT GROWTH REGULATORS