**IB Geography – Biodiversity.**

 Sort the following cards into :

1. Why are rainforests important?
2. Why are rainforests being destroyed?
3. What Problems Does Rainforest Destruction Cause?

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| **Timber (hardwoods):** Hardwoods like mahogany and teak that take hundreds of years to grow are still in high demand to make things like furniture. The extraction of these trees can kills trees around them. Also many countries like China are also demanding large amounts of normal timber that are not always taken from sustainable sources. | **Mining:** With an ever increasing demand for the world's natural resources, countries and companies are looking at increasingly isolated locations, places like rainforests and Antarctica. The rainforests are believed to have many resources including metals and fossil fuels beneath their soils. Gold mining can be particular damaging as mercury is used in its extraction and often runs off into rivers. | **Cash crops and agricultural products:** Yam, coffee, rubber, mango, banana, sugarcane, cocoa and avocado were all first discovered in rainforests. |
| **Silting of rivers:** With increased flooding and surface run-off moil soils and silt is washed into rivers, this can not only change local ecosystems (water temperature and clarity) but can also reduce the depth of rivers making navigation harder. | **Breaking of nutrient cycle:** The top soil of rainforests is very thin an receives the majority of its nutrients from rotting flora and fauna. By removing trees you also remove animals and therefore the source of the soils nutrients. With increased erosion the top soil (humus) layer is quickly washed away. | **Silting of seas and oceans:** With the increased frequency of flooding and landslides more silt gets washed into the oceans. The increased amount of silts reduces the transparency of the sea reducing the light reefs receive and the temperature of the water. Increased silt can also block important shipping lanes. |
| **Road building:** Building new roads like Trans Amazon highway from Brazil to Bolivia not only causes deforestation itself, but its also opens up new ares to urbanisation, mining and farming causing further deforestation. | **Source of nutrients to humus layer in soil:**The topsoil in rainforests is very thin and relies on the nutrients provided by rotting plants and animals. Because of the rainforests climate, there is a constant supply of leaf litter. | **Plantations:** Primary products are often seen as an income source for LEDCs, many of who have large areas of rainforest. At the same time with fossil fuels running out, alternative fuels sources are been searched for including biofuels e.g. Palm oil. This has lead to widespread deforestation in countries like Malaysia and Indonesia to plant cops like palm oil. |
| **Hunting:** Hunting takes two forms, one form is for bushmeat to feed families and enough the sale of animals either alive e.g. parrots or dead for their skins e.g jaguars. | **Flooding:** Flash floods become more common after deforestation because there is less interception and less root uptake and transpiration. As such rainwater reaches the ground quick, saturating it and causing surface run-off and potential flooding. | **Medical remedies:** Rainforests have been the source of many of today's drugs, including the basic ingredients for the hormone contraceptive pill, quinine (an anti-malaria drug) and curare (a paralysing drug). |
| **Sandification/desertification:** Because rainforest soil loses its fertility very quickly after deforestation it quickly becomes hard to grow any vegetation on it, leading to sandification and possibly desertification. | **Loss of indigenous homes:** By clearing rainforests you are obviously destroying the homes of indigenous groups. But also moving close to indigenous groups can spread disease and alter local culture and traditions. | **Reduced rainfall:** Deforestation can lead to reduction in local rainfall because less water is intercepted and transpired from vegetation into the atmosphere reducing the formation of clouds and rainfall. |
| **Cattle Ranching:** As the world's population gets bigger and richer, the demand for meat is increasing. To rear the cattle increasing tracts of the rainforest are being cleared to make pastures for grazing. | **Ecotourism:** With people becoming ever more environmentally conscious and looking for increasing adventures, ecotourism to rainforests is increasing. This not only helps protect rainforests, but creates income for locals. Ecotourism is an important income to countries like Costa Rica and Belize. | **HEP:** Many of the world's great rivers flow through rainforests e.g. the Amazon. These great rivers often have the most HEP potential. Unfortunately when a dam and reservoir are built it causes damage during construction, but also floods large areas. |
| **Population growth:** As populations grow, particularly in countries like Brazil, Peru, India and Vietnam that contain rainforests the demand for land increases, both to grow food and to live. | **Urban growth:** With the world population increasing as well as rates of urbanisation increasing many cities like Manuas in Brazil are growing rapidly causing deforestation. | **Subsistence Farming:** Because of the large amounts of poor people that still live in tropical areas, subsistence farming is still widespread. Because rainforest soil loses its fertility quickly after deforestation, the most common form of subsistence farming is slash and burn. With growing populations this method of farming can cause widespread deforestation. |
| **Flood control (interception, transpiration):**Rainforests are an excellent natural measure to reducing flooding. There is leaf cover in rainforests all year so interception continually happens, extending rivers lag time. All vegetation uptakes water and transpires it. | **Photosynthesis:** Tropical rainforests are often referred to as the 'lungs of the earth' and convert large amounts of the greenhouse gas carbon dioxide back into oxygen. It is estimated that the Amazon rainforest alone produces about 20% of the earth's oxygen. | **Control of soil erosion:** The root systems of trees and shrubs hold the very thin soil of rainforest in place. If trees are removed then both erosion of topsoil and landslides are more likely |
| **Reduced photosynthesis:** As more and more trees are removed the rate of photosynthesis reduces, releasing more carbon dioxide into the atmosphere and contributing to the greenhouse effect. | **Landslides:** By removing trees and vegetation, you are making the soil less stable. Combine this with saturated ground and the likelihood of floods increases. | **Home to indigenous groups:** Although the number of indigenous groups and people have declined rapidly since colonisation in South America, it is estimated that there are still over 200,000 people that consider the Amazon their home - some groups are still uncontacted |
| **Biodiversity:** Although rainforests cover only 7% of the world's land mass, it is estimated that they could contain up to 50% of the world's biodiversity. This is potentially up to 15 million species. | **Biodiversity loss:** Because all the species that live in the rainforest are not known it is hard to calculate species loss. However, scientists believe that 1 mammal or bird extinction can be extrapolated to approximately 23,000 extinctions. |  |