

Part 8 Information Section**Table 1: Some of the world's most important plants and the main countries that grow and sell them. ([click link to plant photographs](#))**

Important food crops	The countries that grow the most of these plants	How much do they grow in a year? (in metric tonnes)
Bananas	India Brazil) China Ecuador Out of 130 countries	16,450,000 6,518,250 5,826,521 5,609,460
Sugar Cane	Brazil India European (15) China Out of 108 countries	386,232,000 289,630,016 105,744,868 92,370,000
Wheat	China India USA Russian Fed. Out of 123 Countries	86,100,262 69,320,000 63,589,820 34,030,000
Maize	USA China Brazil Mexico Out of 163 countries	256,904,992 114,175,000 47,465,900 19,652,416
Potatoes	China Russian Fed India USA Out of 157 countries	66,813,331 35,900,000 24,000,000 20,821,930
Cocoa	Côte d'Ivoire Ghana Indonesia Nigeria Out of 63 records	1,225,000 475,000 426,000 380,000
Rice	China India Malaysia Bangladesh Out of 119 countries	166,417,000 132,013,000 52,078,832 38,060,000
Palm oil <i>(from oil palm fruit)</i>	Malaysia Indonesia Nigeria Thailand Out of 42 recorded countries	13,354,000 10,200,000 910,000 620,000
Citrus fruits (oranges, lemons)	Oranges Brazil USA	16,935,512 10,473,450

	Mexico Spain Out of 112 countries Lemons and limes Mexico India Argentina Spain Out of 95 countries All citrus Brazil USA China Mexico	3,969,810 3,091,400 1,824,890 1,370,000 1,200,000 1,065,700 19,215,512 13,771,120 12,544,695 6,475,411
Sunflowers	Russian fed. Ukraine Argentina China Out of 70 countries	4,870,620 4,200,000 3,714,000 2,000,000
Soya beans	USA Brazil Argentina China Out of 92 countries	65,795,340 51,532,344 34,818,552 16,500,368
Spices (pepper, chilli, cinnamon)	Chillies and peppers China Mexico Turkey Spain Out of 150 countries Pepper Viet Nam Indonesia Brazil India Out of 31 countries Cinnamon China Indonesia Sri Lanka Viet Nam Total Countries 10	11,534,871 1,853,610 1,760,000 994,200 90,000 67,099 62,984 51,000 47,000 39,000 12,200 6,000
Tea	India China Sri Lanka Kenya Out of 45 countries	885,000 800,345 303,230 290,000
Coffee	Brazil Viet Nam Costa Rica Indonesia	1,970,010 771,200 731,126 702,274

	Out of 83 countries	
Other important plant crops		
Cotton	China USA India Pakistan	5,200,000 3,967,810 2,100,000 1,690,000
Rubber	Thailand Indonesia India Malaysia China Out of 34 countries recorded	2,615,100 1,792,000 694,000 589,366 550,000

Drug	Source	Use
Atropine	Atropa belladonna (Belladonna)	Pre-medication for anaesthesia
Caffeine	Camellia sinensis (Tea)	Stimulates central nervous system
Camphor	Cinnamomium camphora (Camphor tree)	Decongestant; relieves aches and pains
Cocaine	Erythroxylum coca (Coca)	Local anaesthetic
Codeine	Papaver somniferum (Opium poppy)	Pain killer; cough suppressant
Colchicine	Colchicum autumnale (Autumn crocus)	Anti-tumour agent
Digitoxin	Digitalis purpurea (Common Foxglove)	Increases the efficiency of the heart
L-dopa	Mucuna deeringiana (Velvet bean)	Treat symptoms of Parkinson's disease
Menthol	Mentha spp. (mint)	Decongestant
Morphine	Papaver somniferum (Opium poppy)	Pain killer
Quinine	Cinchona ledgeriana (Yellow cinchona)	Anti-malarial; treat cramps
Reserpine	Rauwolfia serpentina (Indian snakeroot)	Treat high blood pressure
Scopolamine	Datura metel (Reared thornapple)	Pre-medication for anaesthesia
Strychnine	Strychnos nux-vomica (Nux vomica)	Stimulates the central nervous system
Thymol	Thymus vulgaris (Common thyme)	Anti-fungal

Table 2 Important drugs derived from plants (Source WWF)

Biome	Total Area (km²)	Area undisturbed (%)	Area Partially Disturbed (%)	Area Human Dominated (%)
Temperate broadleaf forests	9 519 442	6.1	12.0	81.9
Evergreen sclerophyllous forests	6 559 728	6.4	25.8	67.8
Temperate grasslands	12 074 494	27.6	32.0	40.4
Subtropical and temperate rainforests	4 232 299	33.0	20.9	46.1
Tropical dry forests	19 456 659	30.5	41.1	45.9
Mixed mountain systems	12 133 746	29.3	45.0	25.6
Mixed island systems	3 256 096	46.6	11.6	41.8
Cold deserts/semi-deserts	10 930 762	45.4	46.1	8.5
Warm deserts/semi-deserts	29 242 021	55.8	32.0	12.2
Tropical humid forests	11 812 012	63.2	11.9	24.9
Tropical grasslands	4 797 090	74.0	21.3	4.7
Temperate needleleaf forests	18 830 709	81.7	6.4	11.8
Tundra and Arctic desert	20 637 953	99.3	0.7	0.3

Table 3 Amounts of disturbance by humans on different ecosystems, based on Gaston and Spicer, 1998.

Factors affecting current levels of biodiversity

(based on McNeely et al. 1995)

Immediate causes:

- Exploitation of wild living resources, including hunting and wildlife trading
- Expansion of agriculture, forestry and aquaculture
- Expansion of transport systems and building
- Habitat loss; especially coral reefs, wetlands, primary forests, and coastlines – all vulnerable and with great biodiversity.
- Species introductions
- Pollution of soil, water and atmosphere
- Global climate change

Underlying causes

- Changes in social organisation, including loss of indigenous cultures
- Growth of human population
- Patterns of natural resource and energy consumption – often involving the pressures of tourism, now the world's biggest industry
- Global trade
- Economic systems that fail to value the environment and its resources
- Inequality in ownership, management and flow of benefits from the use and conservation of biological resources.

Main environmental agreements

- Convention on Biological Diversity (CBD) 1992
Agreed by over 170 countries, at the Earth Summit in Rio de Janeiro
- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), 1973.
Agreed by over 130 countries. This bans trade in certain species and regulates trade in other endangered species. Wildlife trade is estimated at \$20 billion per year, including illegal trade of approximately \$5 billion.
- Convention on Wetlands (Ramsar Convention), 1971.
Agreed by over 100 states. The only convention covering a specific eco-system, including marshes, swamps, peat land, lakes, shallow marine waters etc. These areas are important as fish and bird breeding grounds.
- Convention on Migratory Species (Bonn Convention), 1979.
Agreed by about 50 parties to protect 55 migratory animals.

Other conventions include those on The Law of the Sea, Climate Change and Desertification. The World Heritage Convention protects some of the most significant natural sites e.g. the Great Barrier Reef in Australia. There are several hundred Biosphere Reserves designated by **UNESCO*** and the European Network of Biogenetic reserves as adopted by the Council for Europe. Most countries have their own protected sites.

The total global land area (excluding Antarctica) protected is about 7%. Farmland takes up about 38%.

Glossary

Agro-chemicals	Chemicals such as fertilizers, pesticides and herbicides which are used to improve farming productivity.
Biodiversity	The variety of living things that exist in nature, from the largest animals and plants to the tiniest micro-organisms. Bio=Life, Diversity = Variety.
Climate change	Long term variation in climate conditions, (animal) such as temperature, humidity which may or may not be affected by human activity.
Consumer	An organism which eats others organisms to get their food energy.
Energy	The ability to do work.
Economy	The system or range of economic activity or management of resources in a country, community or region.
Extinction	When the last individual of a plant or animal of a species has died.
Fair Trade	Positive relationships that are built between the farmers and workers in developing countries (the producers), and the businesses and people who buy their products in other parts of the world (the consumers). This makes sure that farmers and workers get a decent rate of pay and working conditions, when they produce crops and goods.
	There are four conditions that are considered when setting up a fair trade relationship:
	* Producers receive a guaranteed price for their goods and the security of long-term trading contracts.
	* Working conditions for the producers meet agreed levels of health and safety.
	* Producers, their workplace and the environment are not exploited.
	* Education and training opportunities are set up for producers, especially women and children.
Food Chain	A group of organisms which are related.
Folklore	Traditional beliefs, myths, tales and practices of people, transmitted orally.
Germination	The moment when the first root pushes out of a seed.
Habitat loss	A habitat is an environment or area, where a particular group of plants or animals live. Habitat loss is when this environment is irreversibly damaged or removed (for example, through pollution, flooding or building).
Human Rights	The Universal Declaration of Human Rights was signed by the United Nations in 1948. It isn't a law but is a set of guidelines for what all human beings should be entitled to. It was written by an international committee and looked at what all human beings should be entitled to, regardless of their nationality, colour, religion, or wealth. For example, that all people should be free of slavery. (ref: Peace Child International: Stand Up for Your Rights).
Myth	A traditional, old story to explain the natural world or how the local culture works.
Photosynthesis	The process that plants use to make sugar and oxygen from carbon dioxide, water and sunlight.
Pollination	For seeds to be able to develop, pollen from a flowers male part (the anther) must get to a flowers female part (the stigma). This process is called pollination. Some pollen is carried by the wind or water, but most is carried on the bodies of insects, bats or birds.
Primary Source of Information	Information or research that is gathered first hand; for example, through doing scientific experiments, interviews and surveys.
Producer	An organism such as green plants, which makes its own food energy.
Product	Something that is made or manufactured (other uses of the word might be the result of an event or process, or in maths - the number resulting from multiplication).
Secondary Source of Information	Information that is gathered from records of an event, or research that someone else has done (for examples, the internet, books, newspapers and film).

Seed	A seed holds the cells that will create a new plant. It also contains a supply of stored food and is wrapped in a protective coating. Seeds can only develop when pollination has happened.
Seed Dispersal	Spread of seeds from parent plant, to colonise new areas. Seeds are adapted for dispersal by wind, or by animals which may eat and then expel them or inadvertently carry them on their bodies.
Species	A group of organisms that can breed together to produce new fertile organisms.
Sustainability and sustainable development	Meeting the needs of the present generation without harming the ability of future generations to meet their needs; sustainable development balances the needs of the natural environment with the social and economic needs of a community. Sustain + ability = the ability to sustain things as they are.
Trade	Buying and selling for profit.
UNESCO	United Nations Educational, Scientific and Cultural Organisation.



Gardens for Life

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