



Biodiversity for Food and Medicine



Facts

CBD Focal Area: Ecosystem integrity and ecosystem goods and services

CBD Headline Indicator: Biodiversity for food and medicine

Key Indicator Partners: TRAFFIC and IUCN/SSC Medicinal Plants Specialist Group

Data Available: Global time series (Red List Index for animals used for food and medicine: 1978 onwards), Global Baseline (Medicinal plants using the Red List), Regional and national case studies (2009/2010 data with some historical data from 2000)

Development Status: Ready for global use (Red List Index) and national use (Accessibility Index)



Reason

Many terrestrial animal and plant species are used by humans for food and medicine. These species make significant contributions to diet and healthcare, particularly in developing countries. An estimated 50,000–70,000 plant species are used in traditional and modern medicine. Many of the wild species used for food and medicine are threatened with extinction, some due to over-exploitation, or different pressures such as habitat loss, disease or a combination of factors. Regardless of the causes, the diminishing availability of these resources affects supply and demand and thus threatens those depending on wildlife resources for income, health and well-being.



Status

The Biodiversity for Food and Medicine Indicator has been developed by TRAFFIC in collaboration with the IUCN-SSC Medicinal Plant Specialist Group and with assistance from the IUCN Species Programme and BirdLife International.

Two indicators were developed to investigate the use of wildlife for food and medicine and the impacts on ecosystem integrity and ecosystem goods and services.

RED LIST INDEX (RLI)

This indicator provides a measure of change over time in the conservation status of animals used for food and medicine and a baseline for the conservation status of medicinal plants. Plants harvested for food have not been included; apart from medicinal use, collection of data on harvest for other purposes is not as advanced as for terrestrial animals.

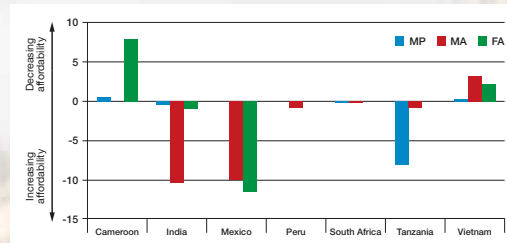
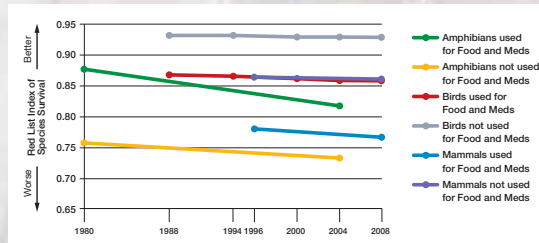
A Red List Index (RLI) for birds, mammals and amphibians used for food and medicine has been produced. This uses data from repeated assessments of the status of each species for the IUCN Red List, and illustrates overall trends in the extinction risk over time.

ACCESSIBILITY INDEX

To complement the global approach based on the IUCN Red List, primary data from selected countries were collected to investigate how the accessibility of species used for food and medicine is changing over time for poorer people. Price data has been collected for food and medicine 'baskets' from markets in eight countries, representing Latin America, Africa and Asia, regions chosen for their high biodiversity. 'Baskets' represent commonly used wild food (animals) and medicinal (plants and animals) products, with different species selected for each country. Price data were collected from vendors at the markets for a standard unit of the goods (for example, a kilogramme, or an individual). In addition to current price for each product, vendors were asked to recall the price in 2000. Current and historical prices for locally relevant marker products (such as staple food products, for example rice, maize, domestic meat, and generic/manufactured medicines, for example aspirin) were also obtained for each country, in order to compare prices and/or affordability of these with those of the wildlife products. Other sources of published data for the selected countries were obtained for income.



The Indicator



Draft Red List Indices showing the proportion of species expected to remain extant in the near future without additional conservation action for all species, species used for food and/or medicine or not used for these purposes for: amphibians, birds and mammals.

Source: RLIs produced using IUCN Red List data with assistance from IUCN Species Programme and BirdLife International.

Change in percentage of GDP per capita for 10% poorest used to purchase baskets of goods (medicinal plants (MP), medicinal animals (MA) and food animals (FA)), 2000–2010, indicating affordability.

How to interpret the indicator:

RED LIST INDEX (RLI)

The IUCN Red List Index (RLI) measures trends in the overall extinction risk of species-groups, as an indicator of trends in the status of biodiversity. Decreasing RLI values (a downwards sloping line) means the expected rate of extinctions (i.e. biodiversity loss) is increasing, i.e. that the rate of biodiversity loss is increasing. A horizontal graph line (i.e. unchanging RLI values) means that the expected rate of biodiversity loss is increasing. An upward trend in the graph line (i.e. increasing RLI values) means that there is a decrease in expected future rate of species extinctions, i.e. a reduction in the rate of biodiversity loss.

ACCESSIBILITY INDEX

This indicator provides information on "How the accessibility of species used for food and medicine to poorer people is changing through time" and looks at the relative affordability of wild sourced products compared with generic/staple products. A downward bar indicates the percentage of GDP required for a basket of goods has reduced since 2000 and an upward bar demonstrates products have become less affordable.



Current Storyline

RED LIST INDEX (RLI)

'Many of the wild species used for food and medicine are threatened with extinction, some due to over-exploitation, some to different pressures e.g. habitat loss, or a combination of factors. Of the 9,956 known extant bird species, 14% are thought to be used for food and/or medicinal purposes. Of all bird species 12% are classified as threatened but of those used for food and medicinal purposes 23% are threatened. Similarly mammal species used for food and medicines (22% of all known mammal species) are more threatened on average than those not utilised in this way. In contrast to the birds and mammals, amphibians used for food and medicine appear overall to be less threatened than amphibians not used for these purposes. However, the conservation status of these species is declining more rapidly than that of amphibian species not used for food and medicine.'

Just 3% of the world's well-documented medicinal flora has been evaluated for global conservation status. The proportion of medicinal plants flora considered to be threatened appears to have remained relatively stable (ca 40% to 45%) between 1997 and 2008. This stability however may be the artefact of a number of variables. The conservation status of medicinal plants is alarming if this pattern is maintained by assessment of a larger and more representative sample of medicinal plant species.'

ACCESSIBILITY INDEX

Whether people are able to access wild foods and medicines is a function of their price and affordability, which in turn depends on resource availability and other factors influencing supply and demand. In terms of affordability, all but two of the sampled countries' wild products were apparently becoming increasingly affordable to the poorest 10% of the population, particularly so for animal products in Mexico and medicinal animals in India. Medicinal plants in Tanzania were found to be becoming increasingly more affordable. However, wild food animals have decreased in affordability in Cameroon, despite wild meat remaining cheaper than domestic meat, whereas in Tanzania wild meat has remained at an almost constant level of affordability. In Viet Nam, where wild meat is considered more of a luxury product and its sale is illegal, it has seemingly decreased in affordability in the past 10 years. For the other countries, sampled wild products are becoming relatively more affordable even though global indicators show that in general animal species that are used for food and medicine are becoming more threatened.



National Use

RED LIST INDEX (RLI)

This indicator focuses on the global status of species used for food and medicines. National RLIs for utilized species can be calculated either by disaggregating the global indices, or by repeatedly assessing extinction risk at the national scale. Many countries have compiled national red lists (generally for all vertebrate species) which form the basis of the latter approach (see www.nationalredlist.org), but so far few have done this twice or more using consistent methods. As they increasingly do so, however, many more national RLIs will become available which can be disaggregated for utilized and non-utilized species.

Information on producing national RLIs can be found in the 2010 BIP publication, *IUCN Red List Index – Guidance for National and Regional Use*, available from the 2010 BIP website (www.bipindicators.net/guidancedocumentsforationaluse).

ACCESSIBILITY INDEX

This indicator is primarily focused at the national scale as data has been collected in eight countries. Regional trends may also be identified if the countries selected are assumed to represent Africa, Asia and Latin America.

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