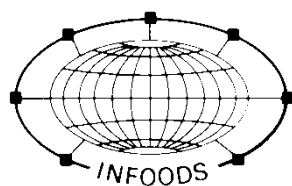


# FAO / INFOODS Reports

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## Nutrition Indicator for Biodiversity - Food Composition

### Global Progress Report 2012



**FAO/INFOODS**  
Report on the  
Nutrition Indicator for Biodiversity  
  
Food Composition  
  
Global Progress Report 2012

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## **1. Introduction**

FAO in collaboration with Bioversity International and the other parties is leading the Cross-Cutting Initiative on Biodiversity for Food and Nutrition, which has been established to measure, investigate and promote biodiversity and nutrition (FAO, 2008, 2010).

Nutritional Indicators for biodiversity are needed to address the diversity of plants, animals and other organisms used for food, covering the genetic resources within species, between species and provided by ecosystems. Two indicators have been developed at these levels, addressing nutrient composition and consumption of underutilized, wild foods and foods below subspecies level: The Nutrition Indicator for Biodiversity - 1. Food Composition was launched in 2008 (FAO, 2008) and reporting is done on a yearly basis. The Nutrition Indicator for Biodiversity - 2. Food Consumption was developed in 2009 (FAO, 2010) and reporting is done every second year. Detailed information on both Indicators and previous progress reports are available on the FAO/INFOODS website (INFOODS, 2013; Stadlmayr, Nilsson, Medhammar, Burlingame, & Charrondière, 2011) and on the website of the Biodiversity Indicators Partnership (BIP, 2013).

This report on the Nutrition Indicator for Biodiversity on Food Composition (in the following referred to as the Indicator) is aimed at presenting a global report covering the period from 2008 to 2012 as well as the annual progress in 2012 regarding availability of food compositional data for biodiversity.

## **2. Definition of the Indicator on Food Composition**

The Indicator is a count of the number of foods with sufficient descriptions on taxonomic rank below species with at least one value for a nutrient or bioactive component (FAO, 2008). Regarding wild and underutilized foods, information is considered satisfactory when described at the species level. For the term 'underutilized foods', a reference list of underutilized species contributing to the Indicator was developed and is available at the INFOODS webpage (INFOODS, 2013).

In the following, the term 'biodiverse foods' is used for foods that meet the criteria for contributing to the Indicator.

## **3. Purpose of the Indicator**

The purpose of the Indicator is to provide a means of appreciating the extent to which compositional data has been collected and reported to FAO for foods contributing to the Nutrition Indicator for Biodiversity on Food Composition. It reflects the amount of effort by FAO and collaborators in collecting these data, while it does not reflect the extent to which data have been generated internationally. We know that many more data on food biodiversity have been generated in different countries or were included in some reference food composition databases, but as they were not always published and/or reported to FAO, they are not included in the reporting for the Indicator.

## 4. Methods

Data to be reported for the Indicator on Food Composition are either collected by FAO interns and consultants or are sent by members of the INFOODS (International Network of Food Data Systems) network. In previous years, mainly data from food composition tables and databases, which have been reported by the countries, and data resulting from specific searches contributed to the Indicator. Specific searches have been carried out for the following food groups:

- fish and shellfish, worldwide
- milk from underutilized species and breeds
- potatoes
- underutilized roots and tubers
- edible insects
- African fruits

For the global reporting in 2012, the majority of data were obtained by FAO interns and consultants from peer-reviewed articles, using search engines Scopus and ScienceDirect. Specific searches were conducted for:

- rice, worldwide
- quinoa, worldwide
- edible insects, worldwide (continued from 2011)
- vegetables and fruits, worldwide
- beef races, worldwide

Until 1 February 2013, data from Bangladesh, Brazil, Cameroon, China, Guatemala, Mexico, Portugal, Slovenia, South Africa and USA were provided. Some of them could not be included because some countries included foods which do not count for the Indicator (e.g. processed foods) or in a format which did not allow for easy data retrieval.

It has been noted that the definition and inclusion criteria for the Indicator were not always unambiguous, which raised confusion and overestimation of data availability. Therefore, the following changes and clarifications have been made for the reporting in 2012:

- 1) If data are reported for the same country for the same variety/cultivar/breed or wild/underutilized food for the same part, maturity stage and gender, it will be counted only once, regardless of any additional dataset on differences due to region, season, agricultural features, storing, processing, etc.
- 2) Those parts of foods for which there is no evidence that they are consumed by humans, will not count for the Indicator, e.g. potato flower or kiwi skin.
- 3) Data are counted separately if the following information is specified: different stages of maturity, different genders or cross-breeding varieties (if analysed individually).
- 4) To avoid over-counting but to enable recording shifts towards more components analysed from previously reported foods for the Indicator, it was decided, when possible, to sum up the number of analysed components assuming that the components are available per food. As this was often not the case (except for those data collected and reported in the FAO/INFOODS Food composition Database for

Biodiversity - BioFoodComp) (FAO/INFOODS, 2012), the highest number of components per food should be taken for the reporting.

- 5) If foods are analysed in a single composite sample with different varieties, it should not be counted, even though the name of each variety is provided because the composition per variety cannot be identified.
- 6) In many cases, the variety of fish/seafood is not provided. In such cases where variety name is not provided, only those indicated as being from the wild should be counted.
- 7) Some animal foods were added to underutilized foods list, such as eggs (duck, goose, ostrich, quail and turkey) and meat (donkey and horse). The list of underutilized foods is being updated and a new version will be available by 2013.

When discrepancies in data reporting were detected, they were updated, whenever possible, according to the original source. This explains differences in values compared to previous reports.



## 5. Global reporting of the Indicator on Food Composition between 2008 and 2012

The overall number of foods counted for the Indicator on Food Composition has reached 14370, out of which 1275 foods were added in 2012.

### a. Distribution of the Indicator reported between 2008 and 2012 by continent

Figure 1 shows the development of the Indicator from 2008 until 2012. Most of the 14370 foods were from Asia (4652) and America (3414), followed by Africa (2501), Europe (2290) and Oceania (1046). The category 'other' refers to global databases, whereas 'unknown' refers to the foods for which the origin is not indicated.

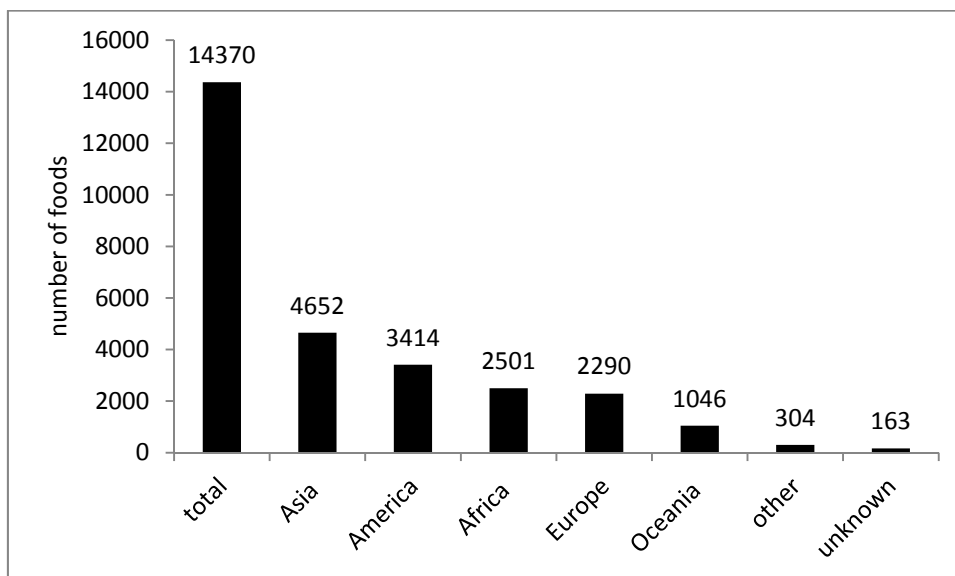


Figure 1: Number of foods reported for the Indicator categorized by continent (2008-2012)

### b. Yearly contribution of the Indicator since 2008 by continent

The yearly increase of the Indicator from 2008 to 2012 is shown in Figure 2. In 2008, the baseline report counted 5519 foods. In the following years, between 835 and 5186 foods were added annually: 5186 foods in 2009, 835 foods in 2010, 1555 in 2011 and 1275 foods in 2012. The figure indicates that the total amount of foods counted for the Indicator is steadily yet unequally increasing, which is due to the amount of time devoted to collect data for the Indicator. Also, different data searches for specific targets were conducted in different years. The most extensive search for data was conducted in 2008 and 2009, which reflected the high amount of data found in those years. For example, in 2011 specific search for starchy roots and tubers in Africa was conducted, which explained the comparatively high amount of data found in Africa that year.

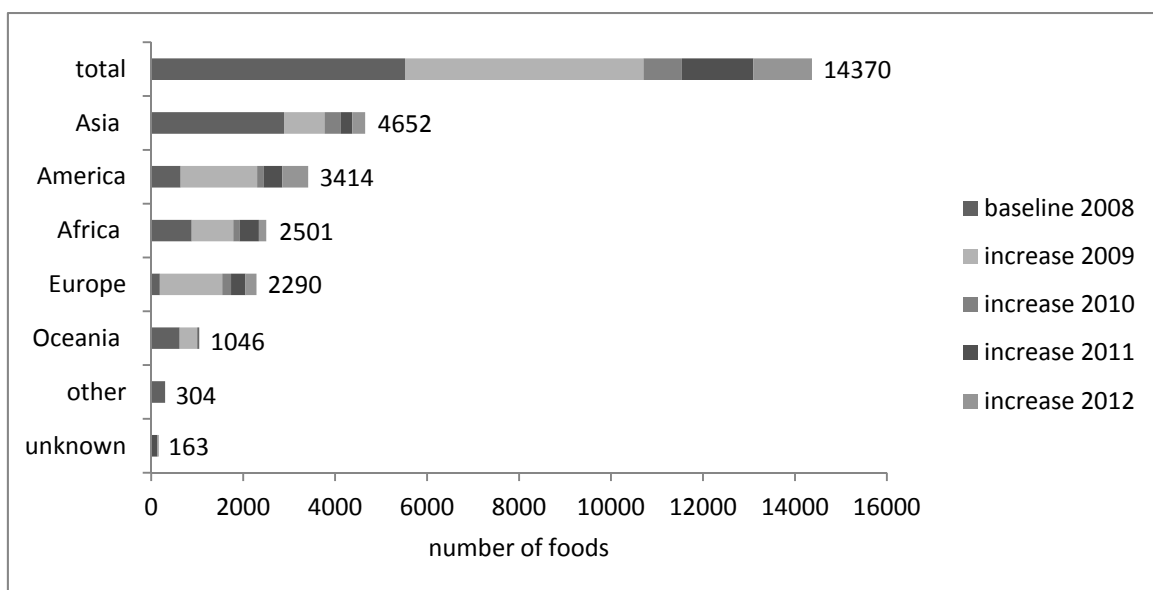


Figure 2: Yearly increase of the number of the foods counted for the Indicator categorized by continent (2008-2012)

## 6. Global reporting of the Indicator on Food Composition in 2012

### a. Distribution of newly reported biodiverse foods in 2012 by continent

In 2012, a total of 1275 foods were counted for the Indicator, as shown in Figure 3. Most of the data were found in America (563) and Asia (278), followed by Europe (239), Africa (158), unknown (28) and Oceania (9). Specific searches were conducted for rice, quinoa, fruits, vegetables and insects (continued from 2011). A considerable amount of data for quinoa and rice was available in America and Asia, respectively, since these two continents are the most important areas of production and consumption.

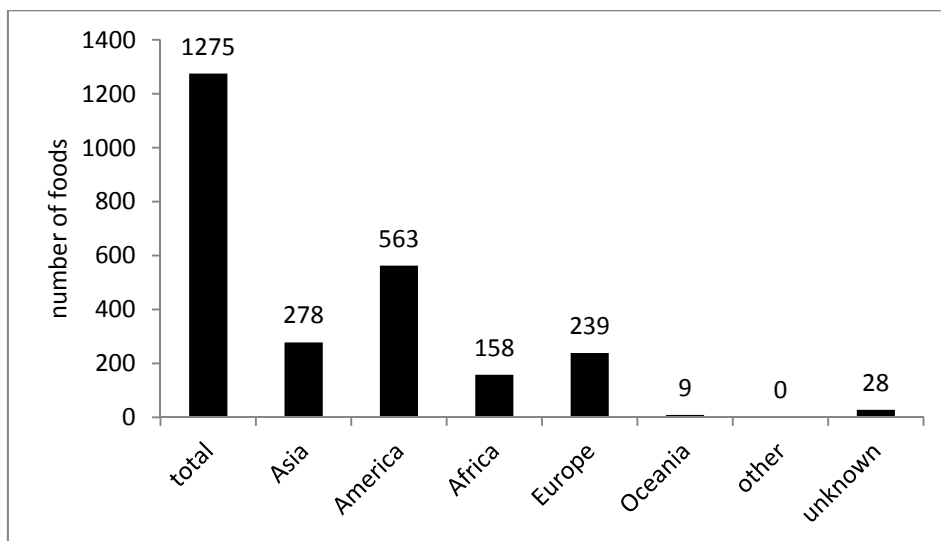


Figure 3: Distribution of the number of biodiverse foods reported in 2012 by continent

**b. Distribution of newly reported biodiverse foods in 2012 by number of components provided**

The majority of foods found for the Indicator in 2012 were reported with 2-9 components (553) and 10-30 components (547), while fewer foods with only one component or over 30 components (see Figure 4) contributed to the Indicator. This pattern was similar to the pattern observed in the previous year. Additionally, as in previous years, most of the components belonged to one or two component groups (e.g. mineral or amino acids) rather than covering a wide range of different nutrients.

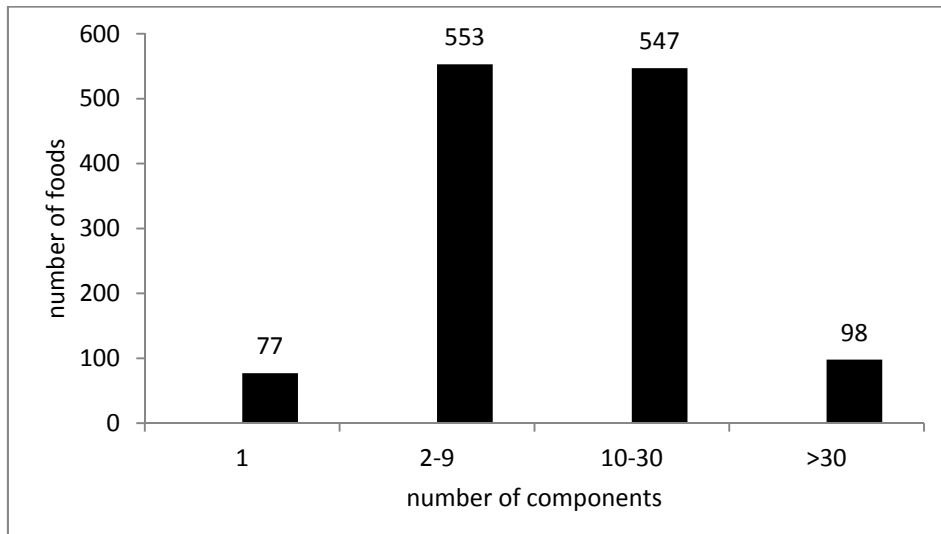


Figure 4: Distribution of newly reported foods in 2012 by number of components provided

## **7. Compilation into the FAO/INFOODS Food Composition Database for Biodiversity - BioFoodComp**

The compositional data obtained in 2012 for the Nutrition Indicator for Biodiversity – 1. Food Composition were compiled in the FAO/INFOODS Food Composition Database for Biodiversity, version 2.0 - BioFoodComp2.0 (FAO/INFOODS, 2012) or are being compiled in later updates, which can be accessed through FAO/INFOODS webpage (INFOODS, 2013). The current version (BioFoodComp2.0) contains more than 6400 food entries, covering various food groups. Only about half of the foods contributing to the Indicator were compiled into BioFoodComp2.0, due to lack of time or unavailability of data at FAO (only available in the country, where the data were collected). However, all foods in BioFoodComp2.0 were counted for the Indicator. The BioFoodComp will be updated yearly and it is expected that many of the foods counting for the Indicator will be gradually entered into the database.

## **8. Conclusion**

The collection of Nutrition Indicators for Biodiversity – Food Composition suggests that there is an increasing recognition of the importance of food compositional data for foods taxonomically identified below species level. The total amount of data on the Indicator on food composition is yearly and steadily increasing, especially those at the variety/breed/cultivar levels and on underutilized foods. However, a broader range of foods with wide coverage of components still need to be analysed and reported in order to mainstream biodiversity into nutrition activities. It is hoped that compositional data on wild foods and foods in specific regions, such as Oceania, will grow and become more accessible.

If more time were allocated to the collection, reporting and compilation of the composition data for food biodiversity, the Indicator and the BioFoodComp would grow faster and more users could benefit from the reported and compiled data.

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