

2015

International
Year of Soils



Food and Agriculture Organization
of the United Nations

**“International Year of Soils:
exploring links between indigenous food
systems, protection of native seeds and
sustainable livelihoods”**

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Next 35 years: Mounting pressures on food production

- 30 % increase in the global population (9.3 billion in 2050);
- competition for land, water and energy resources;
- climate change.

Necessary to review existing food systems: Feeding the World.

NEED FOR SUSTAINABLE FOOD SYSTEMS:

for world food security, for economic and social opportunities, and biodiversity protection.

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of our **food**
comes from
soils



of our global
soils are
degraded

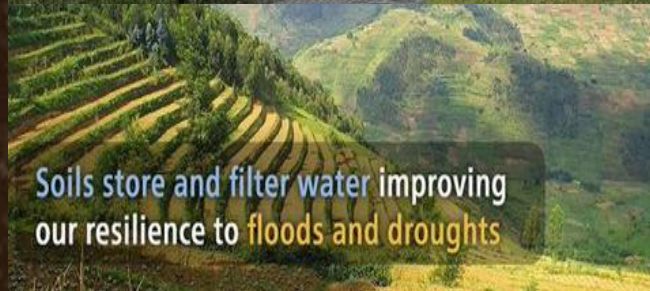
Soils key For Sustainable Food Systems



Soils support our **planet's biodiversity**
and they host a **quarter** of the total



Healthy soils are the basis for
healthy food production



Soils store and filter water improving
our resilience to **floods and droughts**



Soils help to combat and
adapt to **climate change**
by playing a key role in
the **carbon cycle**



Soil health and fertility provide
macro and micro nutrients
necessary for vegetation growth/
food crops



Soils are the key for **regulating**
pest outbreaks and plant disease

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Soils: Why So important?

- Soils host life above them: forests, pasture lands, rivers and water systems
- Soils preserve life in them: microorganisms, roots, water purification systems
- The lack of balance among its elements result in degrading systems that degenerate and eventually are depleted: soil is a relatively slow renewable resource
- When soils degenerate, biodiversity, water and food systems deteriorate

Need for a complex landscape mosaic (territorial management) as the underlying conceptual and geographic basis for maintaining soil fertility and Indigenous Food systems

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Indigenous Peoples Custodians Of Soils



Sustainable soil management
could produce up to 58%
more food ↑



Diverse approaches: Agroecology, agroforestry, conservation agriculture, permaculture.

Many of these practices have been done by Indigenous Peoples for centuries.

Indigenous Peoples practices are holistic and sustainable.

BUT

Displacement, no respect of rights & dispossession.

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Fertility

Resilient ecosystems

Resiliency to external shocks

Maintenance of biodiversity

Medicine

Traditional knowledge

**Indigenous
Peoples'
Food
systems**

Adaptation to climate change

Culture & Traditions

Food production and consumption

Spirituality

Social identity

Diversification of crops & Foods

Solidarity mechanisms

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Kuxur rum Guatemala

- “Kuxur rum” = wet soil in Ch’orti language (Copan Chortí community).
- Agro forestry system with an interaction of local and new management systems.
- Combines the planting of maize and beans with forest species (Madre Cacao, Gliricidia sepium) using conservation agriculture techniques → better moisture kept in the soil.

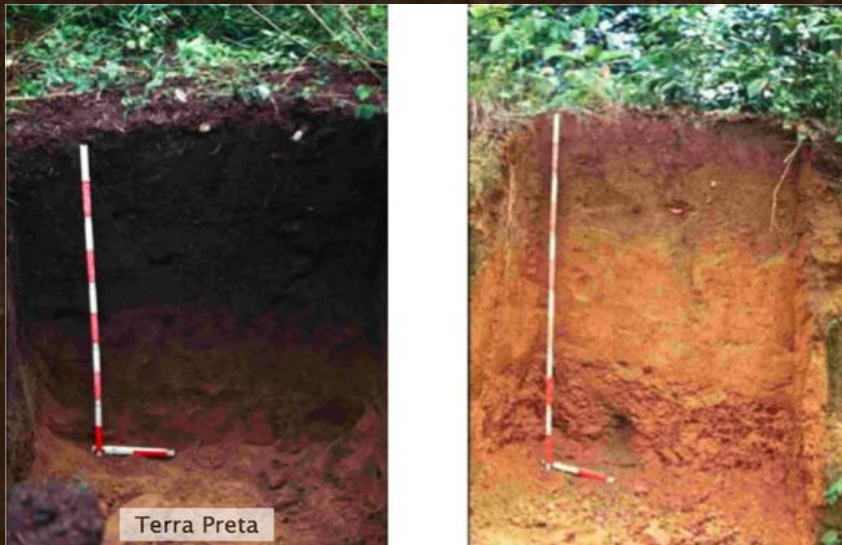


Terra Preta

Brazil



- Originated in the Amazon basin at least 2500 years ago.
- Technique of using charcoal to improve the fertility of soils.
- Highly fertile until today, even with little or no application of fertilizers (despite this region has thin layered fertile soils).



Cross section of soil 1 meter deep comparing terra Preta with nearby Oxisol of the type that is normally find in the Amazon basin

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Linking Biodiversity, Food and Nutrition:

- Convention on Biological Diversity (CBD)
- Commission on Genetic Resources for Food and Agriculture (CGRFA)
- ICN2 (2014) – recommendation 9: Strengthen local food production and processing, especially by smallholder* and family farmers, giving special attention to women's empowerment, while recognizing that efficient and effective trade is key to achieving nutrition objectives.

* **indigenous peoples** mentioned specifically

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Biodiversity and Nutrition



Nutrition is promoting a **diverse diet**: eating different foods

- inter-species biodiversity
- Intra-species biodiversity
 - varieties, cultivars and breeds
 - but also wild, neglected and underutilized foods

Reason for importance:

differences in nutrient content **between** species are as high as **within** species (up to 1000 times)



difference between nutritional adequacy and inadequacy

Food composition & indigenous food

Interspecies	Energy (kcal)	Protein (g)	Dietary Fibre (g)	Iron (mg)	Folate (DFE mcg)
Quinoa* raw	354	14.1	7.0	4.6	184
Rice* white, polished, raw	x 1 365	x 2 7.1	x 9 1.3	x 4 1.2	x 23 8

* USDA data in per 100 g edible portion on fresh weight basis.

Intraspecies	β -carotene content (mcg/100 g)	Banana intake in Philippines (g/d/p)	Vitamin A intake through banana in (mcg RE/d/p)	RDI for vitamin A covered by banana intake (%)
Banana Cavendish	26	93	4	0.7 almost no intake
Banana Utin lap	8508	93	1319	220 <u>adequate</u> intake



Food composition & indigenous foods



- Few data available on micro and macro nutrient content of indigenous foods: **Need for more evidence to influence Policy debate**
- FAO is undertaking analysis (macro & micro) of different Indigenous Foods
- Nutrition yield/Hectare???? Open debate
- FAO database FAO/INFOODS Food Composition Database for Biodiversity – BioFoodComp

<http://www.fao.org/infoods/infoods/food-biodiversity/en/>

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Bread fruit



Agave



Chili peppers



Quinoa



Millet



Yam



Turmeric



Mango



Rice



Insects

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Indigenous food heritage & markets



- Link to the market (while respecting culture) through :
 - Geographical indications: Warana of the Satere Mawé in Brazil
 - Product labelling (and certification) linked to a territory and people : Ethnic label “Dawé” for Mapuche community for quinoa (kinwa)
 - Heritage system recognition : link with GIAHS
 - Sustainable marketing strategies : marketing channels for products originated in agro-ecology systems
 - diversity of sustainable market channels,
 - valuation of product (how the price is established, how fair is the system),

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Why Indigenous Seed systems?



- 7000 plant species used as food in the world, BUT only 150 species are commercial ; 103 species provide 90% of food; and 3 species (wheat, rice and maize) produce 56% of all the calories consumed by humans.
- Overall food diversity supply in markets and commercial agriculture much lower than in indigenous food systems (also wild products)
- Commercial agriculture is reducing the genetic variability and the number of species used, Indigenous populations are maintaining priceless genetic variation and underutilized species that may be the future for feeding the planet.

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Indigenous Seed Systems



- Free access; seed exchanges through solidarity among community's members.
- Agronomic of indigenous peoples = formal seed sector: observation, selection, evaluation, multiplication and distribution of seeds.
- Indigenous' farmers contribute to 4 main functions of seed systems: seed conservation; agricultural production; seed selection and multiplication; and seed supplying for community members and outside.
- **Unfortunately, legislations in some countries forces seed certification: turning informal seed system in illegal seed system**

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FAO's approach

- **FAO Multidisciplinary Working group on Indigenous Food Systems**
 - Outcome of meeting IPS-FAO on 2-3 February 2015
 - Need for + partners: institutions, researchers, indigenous local communities
- **Focus:**
 - Evidence on Nutritional value (Food Composition)
 - Consumption trends of indigenous food and value of food systems holistic approach (food, medicine, Solidarity, biodiversity, spirituality, climate change)

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FAO & IIPPs Working together



- FAO calls on indigenous peoples to participate in the International Year of Soils : need to place in the debate the importance of the linkages of different elements around soils - Holistic view of Indigenous peoples
- Importance of counterbalancing the introduction of processed foods to replace Indigenous diets all over the world: HEALTH RISKS.

Working together II

- Joint work in identifying indigenous foods relevant for each of the 7 regions.
- FAO working on nutrient analysis to build the evidence on indigenous peoples value of their food systems
- Need to look together at indigenous seed systems for the future

Indigenous peoples

"FAO considers indigenous and tribal peoples, with their wealth of ancestral knowledge, key strategic partners in the fight against hunger. Their voices must be heard in order to find together a new balance between human needs and the needs of the planet, new mechanisms able to guarantee environmental and social justice, and new models of food production, distribution and consumption to relieve the pressure on natural resources and ensure to future generations the resources they will need to feed themselves."

FAO Director-General, José Graziano da Silva



- Documents
- Projects
- Map
- Events
- News
- Videos

FAO and indigenous peoples

FAO is one of the leading organizations for its expertise in natural resources management, including food systems. Given the inextricable relationship which exists between nature and indigenous peoples' livelihoods, FAO plays an important role in protecting the environment and those who depend on it for survival. Many FAO projects relate to indigenous peoples even if indirectly, in their promotion of biological and cultural diversity as the underpinnings of food and livelihood security as well as quality of life.



Who are indigenous peoples?



This map shows data on indigenous peoples' population for 69 countries. When presence of indigenous peoples is evident in a country but lacks the population estimate, it is indicated with NA (not available). The data shown are rough estimates from diverse sources. FAO is not responsible for their accuracy. (Global estimate of indigenous peoples: 390 000 000 – 430 000 000. Last update: 31/03/2015).

Currently there are more than 390 million self-identified indigenous peoples in some 70 countries around the world. They have made relevant contributions to the world's heritage thanks to their traditional understanding of ecosystem management. However, indigenous peoples are among the world's most vulnerable, marginalized and disadvantaged groups in the world. Although they account for less than 5 per cent of the global population, they comprise about 15 per cent of all the poor people in the world. To date, there is no universally accepted definition of indigenous peoples. The diversity between regions and countries, and the differences in background, culture, history and conditions have proved extremely difficult for the development of one single definition at the international level applicable to all indigenous communities. In accordance with international consensus, FAO will abide by the following criteria when considering indigenous peoples:



- Priority in time, with respect to occupation and use of a specific territory;
- The voluntary perpetuation of cultural distinctiveness, which may include aspects of language, social organization, religion and spiritual values, modes of production, laws and institutions;
- Self-identification, as well as recognition by other groups, or by State authorities, as a distinct collectivity; and
- An experience of subjugation, marginalization, dispossession, exclusion or discrimination, whether or not these conditions persist.



[Report of the Meeting between Indigenous Peoples and FAO \(2-3 February 2015\)](#)



Timeline UN/FAO & Indigenous Peoples



FAO Links

- [Governance of tenure](#)
- [Forest and Farm Facility](#)
- [Globally Important Agricultural Heritage Systems](#)

UN System Link

- [United Nations Permanent Forum on Indigenous Issues](#)
- [Special Rapporteur on the Rights of Indigenous Peoples](#)
- [Expert Mechanism on the Rights of Indigenous Peoples](#)
- [State of the World's Indigenous Peoples](#)

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GRACIAS

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<http://www.fao.org/partnerships/indigenous-peoples/en>