



Food production systems across the forest-agriculture continuum

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Contribution of forests to the achievement of SDG2: Forests and Food Security
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FOREST-TREE-LANDSCAPE CONTINUUM



Managed forests

Shifting cultivation

Agroforestry


Single species tree crop production

Forests and tree-based systems are part of broader economic, political, cultural and ecological landscapes that typically include a mosaic of different food production systems and other land uses.



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IUFRO Managed forests, woodlands and parklands



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IUFRO Managed forests, woodlands and parklands

- Diverse practices to manipulate forest structure to enhance production of desired plant and/or animal food species;
- Practiced worldwide, on state, communal, open access and private forest lands;
- When practiced sustainably, maintain forest cover, and conserve biodiversity and capacity of forests to deliver ecosystem services;
- Numbers of people benefitting and proportion of forests managed for food largely unknown;

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Shifting cultivation

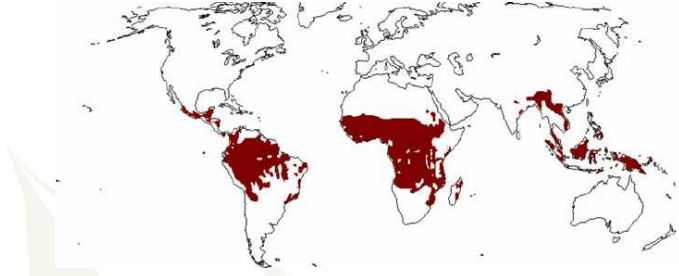





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Shifting cultivation

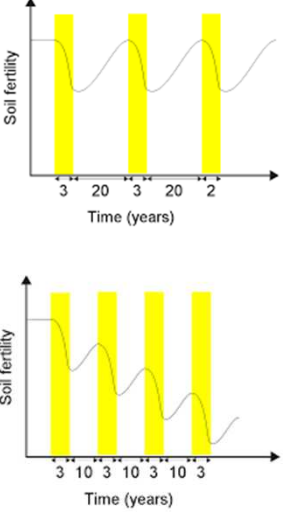



- Formerly practiced worldwide, now largely restricted to tropical and subtropical regions, on communal, open access and State lands;
- When sustainably managed, diversified production on lands unsuited for more intensive crop production, biodiversity conservation benefits.
- Widely varying estimates of forest area involved, and numbers of practitioners (up to 500+ million).

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Shifting cultivation: *sustainability issues*



Soil fertility

Time (years)

3 20 3 20 2


3 10 3 10 3 10 3

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Agroforestry



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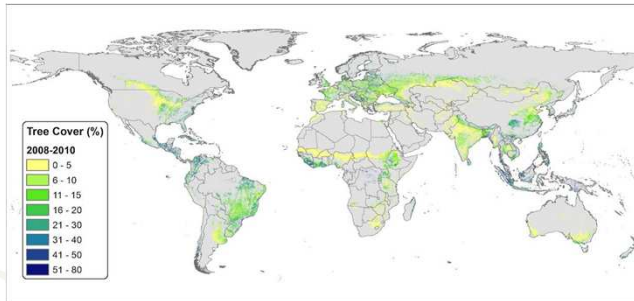


Agroforestry

- Broad array of systems involving management of tree crops (for timber, food, fuel, fodder), agricultural crops and/or livestock;
- Well suited for sites that are marginal for intensive field crop and livestock management with high potential to prevent or reverse land degradation;
- Practiced worldwide in tropical, subtropical and temperate regions, mainly on private and communal lands.



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Percentage of land area and population living in agricultural areas with greater than 10% tree cover in 2008-2010 (adapted from Zomer et al., 2014)

Region	% land area	% population
North America	42.4	66
Central America	96.1	95
South America	65.6	74
Europe	45.0	46
North Africa/Western Asia	11.0	13
Sub-Saharan Africa	30.5	39
Northern and Central Asia	25.3	23
South Asia	27.7	34
Southeast Asia	79.6	73
East Asia	47.5	57
Oceania	33.3	80
Global average	43.4	46
Change since 2000-2002	+3.7	+5



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Tree crops





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Tree crops

- Hundreds of species domesticated (since antiquity) primarily for fruit and nut production
- Managed on large, medium or small scales, primarily on private and communal lands, for both subsistence and market economies.
- Significantly contributions to the food security and nutrition of producers and consumers as well as farm incomes.

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Conclusions

Forests and tree-based systems have historically played a major role in supporting livelihoods as well as meeting the food security and nutritional needs of people worldwide;

Forests and tree-based systems are part of broader economic, political, cultural and ecological landscapes that typically include a mosaic of different food production systems and other land uses.

These systems offer advantages over permanent (crop) agriculture given their adaptability to a broader range of environmental and socio-economic conditions;



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Conclusions

Most forests and tree-based systems we see in the world today are underpinned by the accumulated traditional knowledge of indigenous and local communities;

Agricultural and forest scientists, extension agents and development organizations are increasingly recognizing the importance and relevance of forest and tree-based food systems;

Despite their widespread use, particularly in food-insecure regions, the data needed for decision-makers to make informed choices is often limited.



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<http://www.iufro.org/science/gfep/forests-and-food-security-panel/report/>



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