

INDIGENOUS FOODS AND THEIR NUTRITIONAL VALUE: EVIDENCES FROM SOUTH ASIA

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ABSTRACT

The indigenous knowledge contains vital information that helps in answering various challenges facing today's world. However, the knowledge erodes rapidly. When the loss of this knowledge negatively affects the lives and health of traditionally living rural communities, a drive to conserve indigenous knowledge becomes essential. Existing indigenous knowledge about various foods and food habits may play a significant role in answering the emerging food security and malnutrition issues across the world. The present study attempts to investigate the various indigenous foods and traditional food habits that exist across South Asia, especially in countries like India, Bangladesh, Nepal, Bhutan etc. It also tries to assess the nutritional values of these foods and how it may help in attaining the SDG 2 in these countries. This study argues that the transfer of indigenous knowledge on traditional foods and food habits will ensure their availability and utilisation for resource-poor rural communities.

KEYWORDS

Indigenous Knowledge, Foods and food habits, South Asia, Sustainable Development Goal

INDIGENOUS FOODS AND THEIR NUTRITIONAL VALUE *Evidences from South Asia*

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SDG 2 : The Global Status

Target 2.1: End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture

- The absolute number of people living in chronic food deprivation increased
- In 2016: ~ 520 million people in Asia > 243 million in Africa
- From 2014-2016, 1 in 9 people in the world suffered from severe food insecurity
- Prevalence of food insecurity slightly higher among women

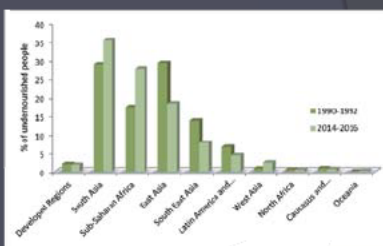


Fig. 1: Regional and distribution of undernourished people in the world from 2000-2016 *

(*Source: The state of food security and nutrition in the world, FAO 2017)

(*Source: The state of food security and nutrition in the world, FAO 2017)

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SDG 2 : The Global Status

Target 2.2. by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

- 155 million children <5 years of age are suffering from stunted growth ⇔ 130 million in 2025
- 45% of 6.9million child deaths annually linked to malnutrition
- >2 billion people suffer from hidden hunger*

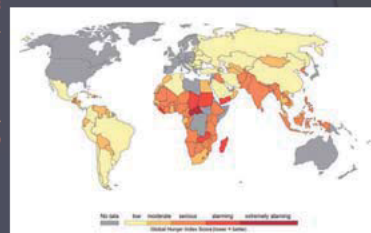


Fig. 3: Distribution of Global hunger based on Global Hunger Index

(Source: International Food Policy Research Institute, 2016)

(*Source: The state of food security and nutrition in the world, FAO 2017)

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SDG 2 : The Status of South Asia

- South Asia bears about 40 percent of the global burden of child stunting.
- The prevalence of stunting in the poorest households is 2.4 times higher than the prevalence in the richest.
- Hunger levels are "alarming" in Afghanistan, Pakistan and India
- Afghanistan and India are among the top ten countries with severe hidden hunger levels



Fig. 5: % distribution of underweight children in South Asia (Source: FAO 2017)

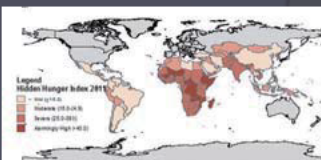


Fig. 6: % distribution of underweight children in South Asia (Source: FAO 2017)

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Major causes of Food Insecurity and Dietary Transition

- **Income:** Reform in economic system brings about changes in food system
- **Urbanization:** A marked increase in the intake of energy-dense foods, a decrease in physical activity, and a heightened level of psychosocial stress
- **Globalization and trade liberalization:** a huge inflow of processed food products which has remarkably transformed the scenario of food market and people's food choices.
- **Climate Change:** Climate-related events reported to increase food insecurity, in terms of both availability and access.
- **Conflicts:** Food insecurity and malnutrition are found to be more prevalent in conflict affected areas

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Indigenous Food Systems

- There is a shrinking diversity in major food crops in national diets.
- Macronutrients and micronutrient content in diets are ignored in most national food security programmes.
- Many of the plant varieties and animal have traits that allow them to adapt to local environments and climates, resist pests and diseases and satisfy local cultural preferences.

"Indigenous" food signifies food naturally existing or originating in a place or country rather than arriving from another place.

(Kuhnlein, 1996)

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Indigenous Food Systems

Qualities of Indigenous food systems

- Dietary Diversity
- Sensory Qualities and Dietary Structures
- Nutritional Qualities



A traditional food processing tool to de-husk paddy, *Dheki*

Indigenous food systems are not only vital for human sustenance but also constitute a treasure of knowledge that contributes to well-being and health, environmental sustainability and cosmic balance of the ecosystem which could be harnessed for the benefit of all human kind (Kuhnlein, 2010)

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Indigenous Food and South Asia: Examples (1)

- Widely grown in India and other South Asian countries
- Rich in micronutrients – β -carotene, folic acid, calcium, iron and vitamin C
- Largely grown in home gardens and also used for fencing
- Ethnic fermented food of the Himalayas
- Rich in iron, calcium, sodium and potassium
- With limited or no access to leafy vegetables during off-season, mountainous people rely on the fermented leaf products



Moringa oleifera^a



Gundruk^b

^(a)Source: <http://www.jatrophafeed.com/moringa/about-plant.php>

^(b)Source: Senapati et al, 2016

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Indigenous Food and South Asia: Examples (2)

- Ethnic fermented soybean food in eastern Himalayas
- Cheap source of protein, free amino acids, minerals, folic acid and vitamin B complex. Also, reported with antioxidant properties
- *Kinema* making is protected as hereditary right – mostly from mother to daughter
- Large trees found in the dry deciduous forests of India
- Rich in sugar and protein, also contain – calcium, iron, phosphorus, potassium and vitamin B complex
- Largely used for making beverage



Kinema^a



Madhaca longifolia^b

^(a)Source: Tamang et al, 2009; Tamang, 2015

^(b)Source: Yadav et al, 2012

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Water Stress and Indigenous Food

- Purulia, a rural district in India, is mostly tribal dominated, largely illiterate, drought-prone, remote and inaccessible with depleting natural resources and low intensity of cultivation.
- Focus Group Discussion with village women, elders and farmers to identify the major coping and adaptation strategies to water stress, low productivity and drought situation.
- Prevalence of coping strategies
- Reliance of indigenous people on local natural resources remain unchanged

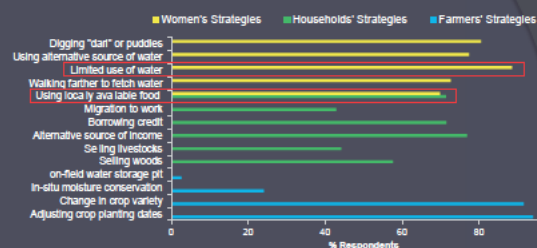


Digging puddles on river bed



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Water Stress and Indigenous Food



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Research Status on Indigenous Food

Search Engine: SCOPUS

Keywords: "Indigenous Foods" AND India, "Traditional Foods" AND India, "Local Foods" AND India

Publications: Only peer-reviewed articles in English

Time Period: 1987 – 2017

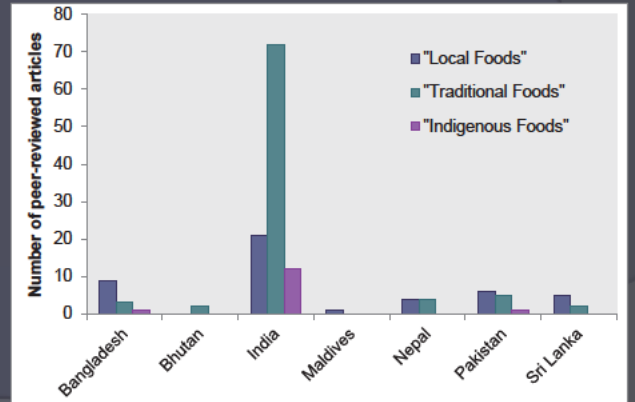
"Indigenous Foods": 160

"Traditional Foods": 1896

"Local Foods": 2387

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Research Status on Indigenous Food



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Conclusions and way forward

Research status on indigenous food is far from satisfactory in South Asia that calls for further exploration and conservation.

Documenting local food systems for scientific identifications and nutrient composition is essential.

Research and development to enhance yield and quality parameters; domestication of indigenous plants and animals including reproduction/multiplication

Support *in-situ* farm conservation as *ex-situ* collections cannot replicate the evolutionary processes and cultural practices.

National food security strategies should demonstrate awareness and support for the role of traditional foods to address food security issues

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THANK YOU

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