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## Harmonizing Sustainability: Harnessing Indigenous Technical Knowledge (ITK) apropos Agriculture and Allied Sectors

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### Abstract

Indigenous knowledge refers to a unique, traditional, local knowledge developed and exists around a specific culture and in a particular geographic area. Previously, no written format or scientific database was available for the ITKs. So, it is communicated from ancestors to the next generation through an oral method of communication. Recently, developments in scientific knowledge have suppressed the ITKs, but they cannot be completely ignored. Most farmers in the country still believe in ITKs for the sustainable development of agriculture and allied sectors. This article focuses on various ITK methods used by the farming community.

**Keywords:** *Agriculture, Animal Husbandry, Culture, Fishery, Indigenous Technical Knowledge.*

### Introduction

Indigenous Technical Knowledge (ITK) is the expertise, practices, and wisdom that have been developed and passed down through generations within indigenous communities. It is the knowledge accumulated over time from one generation to another by word of mouth.

This knowledge is often rooted in deeply understanding local ecosystems, climate, and cultural contexts. Though ITK is specific to a certain culture or community, it serves as the base for a variety of other activities, such as agriculture, animal husbandry, fisheries, health care, food preparation & preservation, education, and environmental maintenance since long (Patel et al., 2016). The progress in scientific knowledge and the evolution of modern practices have gained traction, leading to the replacement of ITK-based practices (Das et al., 2003). However, ITK-based practices continue to be employed by many farms, especially in resource-constrained farming environments, often without a clear understanding of their scientific rationale (Das et al., 2004). Sometimes, scientific approaches are also plagued by the lack of indigenous knowledge involvement. The idea of sustainability in the Indian agricultural context has sparked attention towards indigenous technical knowledge, which encompasses the utilization of natural products to address issues related to agriculture and related activities using natural methods. So, the knowledge accumulated over generations includes practices well-adapted to local environments and can contribute to sustainable agriculture.

### **Characteristics of Indigenous Technical Knowledge**

- ITK is the knowledge stored in people's minds and activities, communicated via., songs, stories, dances, proverbs, cultural practices, beliefs, values, rituals, etc.
- ITK is shared orally through examples in specific cultures.
- ITK is location-specific, cost-effective, and uses waste and byproducts.
- It is eco-friendly, using locally available materials, less capital intensive, economically affordable and sustainable.
- It provides minimum risks to end users through a basis for problem-solving strategies to end users.

### **Role of ITKs in Agriculture**

#### **Fertility of Soil**

- Green manuring crops such as sesbania, sun hemp, green gram, black gram, and cluster bean are grown and ploughed into the field to improve soil fertility.
- Before field ploughing, Sheep and goats are penned to know soil fertility status.

### **Seed Germination**

- Ash is utilized on seedbeds and in Onion fields before sowing and planting to enhance bulb quality and promote growth.
- For better germination of cotton and pulse, seeds are dipped into cow dung slurry and dried in the shade before sowing.

### **Water Management**

- When trees of karamba (*Carissa carandas*), wood-apple (*Feronia alephantum*), and meegon karapincha (*Clausena indica*) yield a higher quantity of fruit than usual at the start of the season, it indicates a potential for increased rainfall during the year.
- If wasps enlarge their nests and spiders create larger webs following the initial two or three showers of the season, it suggests the likelihood of reduced rainfall in that year.

### **Weed Management**

- Coriander seeds are mixed with Sorghum seed before sowing to control Striga weed.

### **Insect-pest Management**

- Termites can be controlled while residues of Tobacco or Neem leaves are buried in the soil.
- Neem leaves and 'Kanjanamkorai' plants are used to control storage pests in paddy.

### **Role of ITKs in Animal Husbandry**

- A bandage prepared by jowar mixed with yellow soil and kerosene benefits Mouth and Foot disease in cattle.
- For any external injuries or skin disorders, a mixture of turmeric powder and Neem leaves is used on the cattle body.
- Applying warm compresses using bags filled with salt and boiled tamarind leaves is a traditional method to alleviate sprains and inflammation in livestock.
- The Dikkamani (*Gardenia resinifera*) leaves and Bendval (*Dendrophthoe falcata*) seeds are ground together into a mixture administered to animals to effectively treat constipation within a single day.
- To cure bloat, animals are given a mixture of Neem leaves and Spices of mango pickles (afara).

### **Role of ITKs in Fisheries**

- Fishes are preserved by salting followed by sun drying.



- To maintain water alkalinity in the pond, banana stems are put in the water.
- For preservation and transportation, preservatives such as Saw dust and ice are used in packing boxes.
- The regular Lime spray rectifies the green colouration of pond water.
- Thorny bushes are kept in the pond during summer to shelter the fish and enhance their growth.

### Conclusion

Indigenous Technical Knowledge is stored in people's minds and shared among the community. Though it has no scientific relevance, people have followed the practices for a long time. Several ITKs are helpful in agriculture, animal husbandry and fishery sectors. It is important to validate such techniques and make Policy reforms needed for the local ecological knowledge. Creating suitable markets for indigenous and organic products and enhancing the production of such techniques lead to sustainability in the long term.

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