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Indigenous Technical Knowledge (ITK) - Relevance In The Present Day Farming With Suitable Case Studies

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Introduction

Indigenous Technical Knowledge (ITK) is the actual knowledge of a given population that reflects the experiences based on tradition and includes more recent experiences with modern technologies. Indigenous agricultural practices (IAPs) are an unwritten body of knowledge. There is no systematic record to describe what they are, what they do and how they do what they do, how they can be changed, their operations, their boundaries and their applications. It is held in different brains, languages and skills in as many groups, cultures and environments as are available today **(Atte, 1989).** Hence, there is immense pressure on the people of India to collect, preserve, validate and adopt IAPs so as to reduce dependence on external inputs, to reduce the cost of cultivation and to propagate eco-friendly agriculture **(Sundramari and Ranganathan, 2003).**

A number of terminologies referring to the same phenomenon have resulted: *indigenous knowledge systems, indigenous technical knowledge, ethno science, local science, traditional science, people science, and village science.*

Conceptual analysis of ITK-__Indigenous technical knowledge (ITK) refers to the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area.

- Accumulated information and Use of local/indigenous materials
- Response to day-to-day situations and scientific validity needs to be established
- Product of informal research or experimentation, cost effective and less capital intensive
- Usually communicated over generations by word of mouth

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- Unique to a culture and plays important role in resource conservation
- Location specific, contributes to sustainability and may or may not have scientific base
- Recognition brings pride to farming community

Integration of ITKs with Scientific Knowledge- Farmers comparative vis-à-vis scientists includes: The experience and discipline from actual farming system and its physical, social and economic development, continuous observation of changing processes of natural resources, freedom to make progressive change, managing and adapting sequences, unrestricted by rapid experimental design, development and adaptation of technology for diverse local condition and the understanding, development and management of technology with many elements and linkages.

Scientists comparative competence vis-à-vis farmers usually include high precision, breeding, biotechnology, developing package technology for uniform and widespread conditions and access to knowledge and other needy inputs.

Documentation and validation of ITK: *Document* the ITKs -(Survey/ RRA/ PRA/ Observations documentary evidences); *Validate* the ITKs/ Assess the ITKs for Scientific Logic - (Survey/ Lab analysis/ On Farm Testing); *Refine* the ITKs for increasing its applicability on wider scale- (Input to research/ On Farm Research/ Farmers Participatory Research/ Lab studies); *Patent* the valid and refined ITKs- (Guard & Legalize the ITKs/ Ensure ownership to local community) and *Promote* the use of validated and refined ITKs (Use media mix/ Integrated Indigenous Networks, Publicize & reward).

Sources of ITK:

- Farmers, community members, especially elders are the best source of ITK
- Folklore, songs, poetry and theatre: people's values, history and practices (often not written & need to be recorded).
- Community records -some indigenous forms or record-includes writings, paintings and carvings

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- People working with communities-extension functionaries -village panchayat sarpanch.
- Secondary sources include published and unpublished documents, databases, videos, photos, museums and exhibits.

Quantification of ITK:PRA tool "matrix ranking" combined -semi-structured interview to elicit numerical data from experienced farmers designed through preliminary discussions with farmers-data set from all the farmers can then be subjected to statistical analysis.

ITK Resource Platforms : Honeybee Network, FAO-AGRIS Memory banking protocol, UNESCO-MOST, Nuffic-CIRAN, FARMESA and TNAU Agritech Portal.

Relevance of study and appreciation of ITK- ITKs may have scientific basis and its technologies could be transferred to other similar farming situations;Documentation and screening of ITK is necessary before the valuable information is lost forever;it may be an alternative, a substitute or a complement to modern technology; it may generate ideas for future research. It is often easier to secure adoption of ITK than modern technology

Scientists now recognize that indigenous people have managed the environments in which they have lived for generations, often without significantly damaging local ecologies. Many feel that indigenous knowledge can thus provide a powerful basis from which alternative ways of managing resources can be developed. Indigenous knowledge technologies and know-how have an advantage over Science in that they rely on locally available skills and materials and are thus often more cost-effective than introducing exotic technologies from outside sources. **(International Institute of Rural Reconstruction , 1996).**

The Convention on Biological Diversity of 1992 acknowledged the contribution traditional knowledge can make in protecting species, ecosystems and landscapes, and therefore included laws pertaining to its access and use. Indigenous people and local communities have since long resisted the use of art and crafts, traditional symbols and designs; the use or modification of traditional songs; the patenting of traditional uses of medicinal plants; and the copyrighting and distribution of traditional stories. Indigenous people can provide valuable input about the local environment and how to effectively manage its natural

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resources.

Case Study -1 A study was conducted in Muswishi area, Zambia, with the objective of assessing indigenous technical knowledge (ITK) and relating this knowledge to integrated pest management (IPM) in maize production. Eighty-nine percent of respondent farmers never used any chemical pesticides. However, 22% used natural products to manage insect pests. The most widely used natural plant products were *Swartziamadascariensis* Desv, *Tephrosia vogelli* Hook.f, *Euphorbia tirucalli* L, wood ash and cow dung. Farmer's own assessment indicated that the integration of ITK into IPM technology led to increased maize yields (> 37.5%).

Case Study : 2 A study was conducted to collect and document the ITK and their application in pest management from indigenous communities in western mid hill of Nepal. A total sample size of seventy-five respondents from the indigenous communities of Magar, Newar in Tanahun and Kaski districts of Nepal were interviewed with a semi structured questionnaire. Among the respondents, there were 10 commercial farmers, 32 semi commercial farmers and 33 subsistence farmers. From the survey, the result revealed subsistence farmers and semi commercial farmers usually make the most use of the ITK and is seldom used by the commercial farmers. Use of ITK was found to be 85% in subsistence farmers, 60% in semi commercial farmers and 10% among commercial farmers

Conclusion:

Implications for extension in ITK include recognize Farmers Wisdom' in a larger perspective and recognize farmers as active partners and not as beneficiaries. Move beyond 'Documentation' to 'Validation' 'Refinement 'and 'Integration' into agricultural research and development. Finally promote 'consortium of famers' and amalgamation of indigenous and western knowledge would be most promising. In this context, it has a value and relevance in itself. Indigenous knowledge can be preserved, transferred, or adopted and adapted elsewhere. The development process interacts with indigenous knowledge.

Planners and implementers therefore need to decide which path to follow. Rational conclusions are based on determining whether indigenous knowledge would contribute to

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solve existing problems and achieving the intended objectives To foster such a transfer a sound understanding of indigenous knowledge is needed.

An elderly woman in northern India was selecting seeds for storage while being interviewed by a researcher about the impacts of modern agriculture. She commented, *"It takes a sharp eye, a sensitive hand, and a lot of patience to tell the difference between these seeds. These are not the things that are honoured any more."Source:* ***Zweifel (1997).***

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