A Jharkhand Point of View on Creating Skill Modules for Organic and Natural Farming Based on the Indian Knowledge System (IKS)

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Abstract

Organic and natural farming, based on India's ancient farming knowledge, is becoming more and more popular as a long-term alternative to farming that uses a lot of chemicals. The National Education Policy (NEP 2020) stresses the importance of including the Indian Knowledge System (IKS) in school curricula. This makes it very important to provide skill-based modules for agriculture. This article suggests IKS-based skill modules for organic and natural farming, with a particular emphasis on the tribal and indigenous farming methods of Jharkhand. The programs combine theoretical knowledge with hands-on experience by using Vrikshayurveda, local seed conservation, soil and water management, and forest-based agroecology. Birsa Khad, Sarna agroforestry systems, Dobha water harvesting, and millet-based cropping are all examples from Jharkhand that show how traditional knowledge may be used to make farming more sustainable and robust to climate change. There are problems including not enough record of tribal methods, not enough educated teachers, and limited institutional backing. However, successful state programs show how to scale up. Adding IKS to skill education can change the way people learn about farming, improve the lives of people in rural areas, and make India a world leader in sustainable agriculture.

Keywords : Indian Knowledge System, Organic Farming, Natural Farming, Skill Education, Vrikshayurveda, Jharkhand, Agroecology, NEP 2020.

Introduction

India has a long history of farming and agriculture that includes centuries of indigenous knowledge written down in scriptures like Vrikshayurveda and used by tribal and farming people in many different environments. Jharkhand, which is mostly made up of tribes, has a lot of traditional ecological knowledge when it comes to organic farming, managing rainwater, and saving seeds. The NEP 2020 stresses the importance of combining IKS with skill-based education. This brings together old knowledge and new scientific methods to help agriculture that can last through climatic changes.

Objectives

1. To examine indigenous knowledge pertinent to organic and natural farming, focusing on Jharkhand.

2. To create skill-based frameworks that include IKS in farming education.

3. To show institutional procedures, best practices, and problems that come up while using IKS-based modules.

Methodology

- A qualitative, desk-based methodology was adopted, encompassing:
- Examination of governmental policies (NEP 2020, NITI Aayog reports, Jharkhand State Agriculture Department).
- Vrikshayurveda is a classical text.
- Case studies from tribal groups in Jharkhand and other Indian states .
- Reports from FAO, ICAR, BAU Ranchi, and other agricultural universities
- Thematic coding and content analysis for curriculum-relevant areas: soil fertility, water management, seed systems, pest control, and community involvement .

Skill Modules Based on IKS: A Look at Jharkhand

Module 1: The Basics of IKS and Agroecology

This module teaches students the basics of Vrikshayurveda, which is the study of plant health, soil fertility, and ecological balance. Students look at how to arrange crops based on the Panchanga so that farming activities fit with the seasons and the moon cycles. In Jharkhand, agroecological ideas are put into perspective by tribal home gardens, cropping along the edges of forests, and systems that grow more than one crop. These systems show how soil, seed, and biodiversity all depend on each other.

Module 2: Managing Soil Fertility in Indigenous Ways

Students learn how to make and use natural fertilisers such Jeevamrit, Panchagavya, Amritpani, and Birsa Khad, which is a way to compost utilising cow dung, biomass, and forest waste. Hands-on instruction on farms in Jharkhand shows how to recycle biomass, vermicompost, and manage agricultural residue. This improves soil fertility without using synthetic pesticides.

Module 3: Biodiversity and Seed Systems

This lesson stresses the need to protect local millet types (including Kodo, Kutki, Marua, and Sanwa) and other native seeds. Learners are taught how to gather, treat, and store seeds using old-fashioned methods like bamboo silos and clay pots. Tribal groups in Jharkhand, such the Munda, Oraon, and Santhal, have communal seed banks and seed exchanges on farms that are good examples of how to learn.

Module 4: Managing Water for Native Peoples

In Jharkhand's rain-fed landscapes, it's very important to use water-saving methods. Students learn how to build and take care of small check dams, Dobha systems for collecting rainwater,

and contour bunds for keeping soil moisture. To show how to manage water sustainably and use micro-irrigation in line with ecological principles, traditional systems like Johad and Zabo are also used.

Module 5: Controlling Pests and Diseases

Students look into natural and plant-based ways to get rid of pests. Training includes making herbal extracts like neem and dashparni ark, as well as traps for native insects. The focus is on ecosystem-based pest management, which uses natural predators and a wide variety of plants, as is done on tribal farms in Jharkhand.

Module 6: Integrated Farming Systems Using Indigenous Knowledge Systems

This module brings together the care of crops, trees, and animals. Students learn about agroforestry, multi-tier cropping, and home gardening, as well as tribal shifting farming methods that are adapted to be more environmentally friendly. Integrating livestock improves nutrient cycling, and examples from Jharkhand, including mixed cropping in forests and intercropping millet, show how ecosystems may bounce back.

Module 7: Starting a Business and Adding Value

The last module is all about turning what you know into money. Students learn how to get organic certification (PGS-India), how to make new products, and how to connect with the market. The tribal cooperatives and farmer producer organisations (FPOs) in Jharkhand are real-world examples of how to add value to and sell naturally farmed goods. They help keep the environment healthy while also making money.

Help from Institutions:

- ICAR, KVKs, and BAU Ranchi all help with scientific proof, curriculum support, and field training.
- The Jharkhand State Agriculture Department supports projects that encourage natural farming and record indigenous knowledge.
- Community institutions and tribal cooperatives make it easier for people to learn by doing and make sure that local knowledge is shared.

Problems

- Insufficient documentation and scientific validation of indigenous knowledge.
- Not enough certified teachers who know both IKS and current teaching methods.Different districts don't always favour natural farming.Difficulties with organic certification and access to markets.

- Need for standardised curriculum frameworks that can be changed to fit local agroecologies.

Conclusion

Adding IKS to skill modules is a long-term, culturally appropriate, and climate-resilient way to farm in Jharkhand. Modules that combine Vrikshayurveda, local soil and water management, seed conservation, and forest-based agroecology offer experiential learning pathways that improve farmers' lives and their care for the environment. With help from institutions, teacher training, and policy alignment, these modules can be expanded to make Jharkhand—and India as a whole—a global example for sustainable organic farming.

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