

India's Ancient Wisdom of Mixed-Crops and Inter-Crops Farming

May the farmers be happy, healthy, and wealthy. — Parashara



MEENAKSHI LEKHI
FORMER MINISTER OF STATE FOR EXTERNAL AFFAIRS, GOVT. OF INDIA



Dr. SOPHIA LISAM
SENIOR RESEARCH FELLOW, BHARAT KI SOCH



every ecological zone. In the misty hills of Nagaland, the Chakhesang tribe perfected the Ruza farming system (often documented as Zabo). A 2024 study in the *Indian Journal of Traditional Knowledge* describes this as an integrated system where water-harvesting ponds, terraced rice fields, fish, livestock and mixed crops function as a single living organism. On the semi-arid Deccan plateau, farmers paired deep-rooted pigeon pea with shallow-rooted millets, so plants drew nutrients from different soil layers without competing. In Odisha and Madhya Pradesh, local communities sowed a dozen different tubers, cereals and legumes together in a single clearing. In Kerala and Bengal, coconut groves hosted black pepper vines, yams and vegetables. This was sophisticated risk management not primitive agriculture.

There are two distinct cropping methods documented across India. First, *mixed cropping or broadcasting*, in rainfed areas like Rajasthan and the Deccan Plateau, farmers mixed seeds of before sowing, the goal was survival. If rainfall was scarce at least one crop would endure. This was the farmer's insurance policy. Second, *spatial intercrop-*

ping, farmers arranged plants in specific row or strip patterns to manage sunlight, water and root depth. In Kashmir farmers intercropped fruit trees with saffron and vegetables. Traditional farmers across India also recognised symbiotic relationships without understanding the chemistry. Pairing legumes with cereals kept the soil fertile. Marigold or certain herbs planted alongside vegetables repelled pests. These were empirical discoveries tested over centuries.

The Moringa tree grew naturally on farm edges for generations as one remarkable example of this wisdom. Dravidians cultivated it in every home yard. The *Ain-i-Akbari*, written 400 years ago, listed it as a commercial oilseed crop. India once exported Moringa oil to the West for perfumes and cosmetics. Research published in *Acta Horticulturae* (2021) confirms the oil remains stable for up to twelve months. Every part of the tree found use: tender pods turned into *achar* and *chutni*, leaves cooked as *sabji* and seeds prepared as medicine. Ayurveda values Moringa (*Shigru*) for diabetes, asthma and cardiac disorders. We cut these trees in the name of modernisation. Their loss is not just a plant but a practical logic.

Lessons for a Climate-Uncertain Century

Contemporary agronomy is rediscovering what traditional farmers always knew. Study in the *Indian Journal of Agronomy* (2024) found that barnyard millet intercropped with green gram produced 25% more food per unit of land than either crop alone. Cotton intercropping in Gujarat has reported gains as high as 44%. These are not marginal gains. They are transformative.

The mechanism is simple. Diverse plant communities use light, water and soil nutrients more completely than single species. Legumes fix nitrogen for neighbouring cereals. Deep roots access minerals shallow roots cannot. Pest cycles are disrupted because the host plant is never alone. A mixed field never fails entirely. If one crop wilts, another stands.

India must feed over 1.4 billion people under unpredictable monsoons and rising temperatures. The industrial model of monocultures has proven brittle. When a pest or dry spell strikes a monoculture, the entire harvest vanishes. When it strikes a mixed field, something survives. The lesson from Khirsara 4,200 years ago is the lesson for tomorrow: diversify or perish.

This is not a call to abandon modern agriculture but to integrate it. Science and tradition are co-authors of the same solution. The Indian Council of Agricultural Research and the Rain Forest Research Institute now recognise traditional farming systems as a priority for climate-resilient agriculture. The need of the hour is simple. We must relearn indigenous intercropping and mixed cropping.

Fable with Moral

Savitri's Dharma

(Mahabharata, Vana Parva)

Long ago, King Ashvapati of the Madra kingdom performed rigorous austerities to honour Goddess Savitri and was blessed with a radiant daughter, also named Savitri. She grew into a maiden of exceptional beauty and inner strength. When no suitor dared approach her, she set out to choose her own husband. After a year's journey, she selected Satyavan, son of the exiled blind king Dyumatsena, who lived in a forest hermitage. The heavenly sage Narad warned that Satyavan was destined to die exactly one year later. Undeterred, Savitri declared she had chosen once and would not choose again. The marriage was solemnised with joy.



As the fateful day approached, Savitri undertook the triratna vow of fasting and prayer. On the destined morning, she accompanied Satyavan into the forest under the pretext of seeing the blooming woods. While chopping wood, Satyavan was suddenly overcome by exhaustion and a splitting headache. He lay down with his head on Savitri's lap and breathed his last.

Before Savitri appeared, Yama, the majestic God of Death, in his terrifying yet luminous form. He tied Satyavan's soul in his noose and turned to leave. Savitri rose and followed him steadfastly.

Yama commanded, "Return, Savitri! Perform your husband's last rites. You cannot follow the dead."

Savitri replied calmly, "My lord, where my husband goes, I must follow. This is the eternal law of marriage and dharma."

Impressed by her resolve and wisdom, Yama offered her a boon, asking her to choose anything except Satyavan's life. Savitri requested the restoration of her father-in-law

Dyumatsena's eyesight. Yama granted it and urged her to return. She continued walking behind him, engaging him in profound discourse on dharma, righteousness, and duty. Pleased by her flawless logic, eloquence, and devotion, Yama granted her another boon: the return of Dyumatsena's lost kingdom. Then a third, her father Ashvapati would be blessed with a hundred sons.

Still, Savitri persisted. She argued that a wife's place is beside her husband and that true dharma demanded his life be restored so she could fulfil her worldly duties. Yama, deeply moved by her intelligence, purity of love, and unyielding spirit, finally relented. He unbound Satyavan's soul from the noose and returned it to his body, blessing Savitri for her extraordinary devotion.

Satyavan awoke as if from deep sleep. Hand in hand, the couple returned to the hermitage. Soon, Dyumatsena regained his sight and kingdom, fulfilling all the boons. Savitri's love and wisdom had conquered death itself, proving that steadfast devotion and righteous determination can alter even fixed fate. Her story remains an eternal symbol of marital love and spiritual strength.

Moral of the Fable

Unwavering devotion, righteousness, and determination can overcome any obstacle.

Did you know?

Long before British enterprises established commercial tea plantations in Assam during the 1830s, the region's indigenous Singpho tribe had already mastered the art of tea cultivation and brewing. For centuries, the Singphos harvested wild tea leaves (*Camellia sinensis* var. *assamica*) that grew naturally in the fertile Upper Brahmaputra Valley.

To process their harvest, they perfected a unique and sustainable method: stuffing fresh tea leaves tightly into hollow bamboo tubes and roasting them over an open fire. Once dried and aged, this traditional technique yields a deeply organic, smoky, and full-bodied tea known locally as *Phalap*.



When Scottish explorer Robert Bruce, accompanied by Assamese nobleman Maniram Dewan, observed the Singpho chief Bessa Gaum drinking this distinctive beverage in 1823, it sparked the discovery that would later revolutionize global tea history. Today, *Phalap* remains a prized cultural treasure, standing as a living testament to Assam's ancient agricultural heritage.

Wisdom Word Search

L O U U B A L K P T K L L
I E A L I B O E A H A O O
Y L I Q L C I I O A P U U
P U O T A J L N I M K K P
M E M U H J G I A A P H U
A A N S M E L R N K O A K
M O T G E I U K A L T O O
A J M W B L W O F U S B U
L K Q N G A H U K P L A P
E T H E I L O U K H O N G
I W J S H N S L B I U G K
L O U N G A A K E S H E I

WORDS TO FIND

Ethei-Loukhong, Kei, Khong, Loungaak-Eshei, Lou-Khaoba, Loumi, Loupuk, Lou-uba, Maru, Pengba

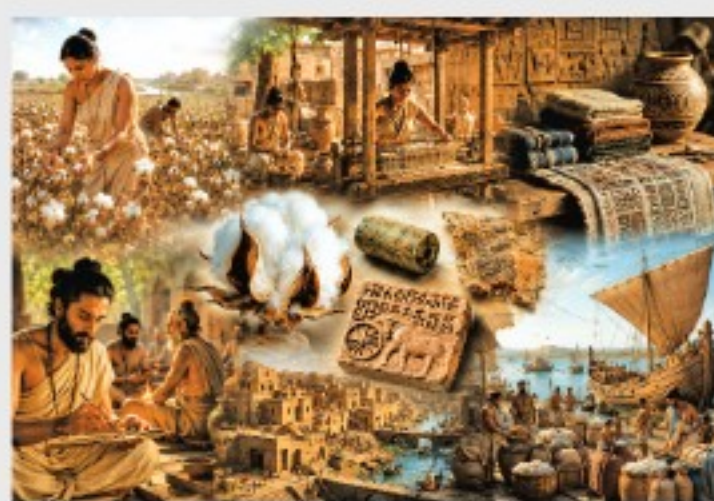
ETHEI-LOUKHONG - Irrigation; a traditional water-diversion system within paddy fields, where Ethei refers to channeling water and Loukhong to the interconnected pathways across the fields.
KEI - Granary; a storage space for preserving harvested grains and ensuring food security.
KHONG - Canal; a water channel used for irrigation and agricultural sustenance.
LOU-KHAOBA - Harvesting; the gathering of mature crops marking the culmination of the agricultural cycle.
LOUMI - Farmer; a cultivator whose labour sustains agrarian life and food production.
LOUNGAAK-ESHEI - Agricultural folk songs traditionally sung in paddy fields, often associated with crop protection, pest control and collective farming practices.
LOUPUK - Paddy field; cultivated wetland dedicated primarily to rice farming.
LOU-UBA - Agriculture/Farming; the practice of cultivating land for food and livelihood.
MARU - Seed; the source of cultivation symbolising continuity, regeneration, and sustenance.
PENGBA - Weeding; the removal of unwanted plants to protect crop health and productivity.

Note: These terms come from Manipuri, one of India's 22 scheduled languages.

Marvels of India

COTTON: BHARAT'S GIFT TO THE WORLD

World's Oldest Cotton Cotton features significantly in Bharat's agricultural legacy. Metallurgical analysis of a copper bead recovered from a Neolithic burial in the Indian subcontinent revealed mineralised threads identified as cotton, making these fibres the earliest known example of cotton. This was confirmed by a research paper in the *Journal of Archaeological Science* (2002).



A Native Species, A Civilisational Crop

The species cultivated in the Sindhu-Saraswati Valley - *Gossypium arboreum* - is indigenous to the Indian subcontinent and distinct from the cotton introduced by Europeans in the 16th century. Sites such as Mohenjodaro, Harappa, Lothal and Dholavira have all yielded indirect evidence of textile impressions, dye residues etc., testifying to a sophisticated, organised textile economy.

Cotton, Trade and Food Security

Cotton's role extended beyond clothing. As Sven Beckert notes in his book titled "Empire of Cotton: A Global History" (2015), Harappan farmers were the first to spin and weave cotton and the Vedas also mentioned cotton spinning and weaving. The Harappans sailed the Arabian Sea and the Persian Gulf, trading animal hides, gems and fabrics. Cotton was central to this commerce, generating surpluses that ensured food security.

Bharat's Civilisational Signature

Herodotus, the ancient Greek historian, described Indian cotton as "exceeding in beauty and goodness". Across millennia, cotton is not merely a crop; it is Bharat's civilisational signature.

QUIZ Agriculture & Food Security

Questions	Option A	Option B	Option C	Option D
1. Who was the 'Sitadhyaksha' in the Mauryan Empire?	Superintendent of Agriculture	Superintendent of Forest Produce	Superintendent of Pastures	Superintendent of Storehouses
2. Why was the Sudarshana Lake built by the Mauryans in Junagadh, and later repaired by dynasties like the Shakas?	To provide safe bathing spot for people	To increase city's aesthetic beauty	For irrigation and water storage	For extinguishing nearby forest fire
3. Which of them was a type of mechanical water wheel, used for drawing water from a tank/well to irrigate agricultural fields?	Taccavi	Chachar	Araghatta	Ghatika
4. Which of these cities was known as a cotton hub during the Tamil Sangam period?	Kaveripattinam	Uraiyur	Vellore	Arikamedu
5. Which of these dynasties introduced the Paik System, that was pivotal in getting labour for agricultural management?	Ahom	Pala	Sena	Gauda

ANSWERS: 1 - A, 2 - C, 3 - C, 4 - B, 5 - A

panchatantra

The Brahmin and the Gold Coins



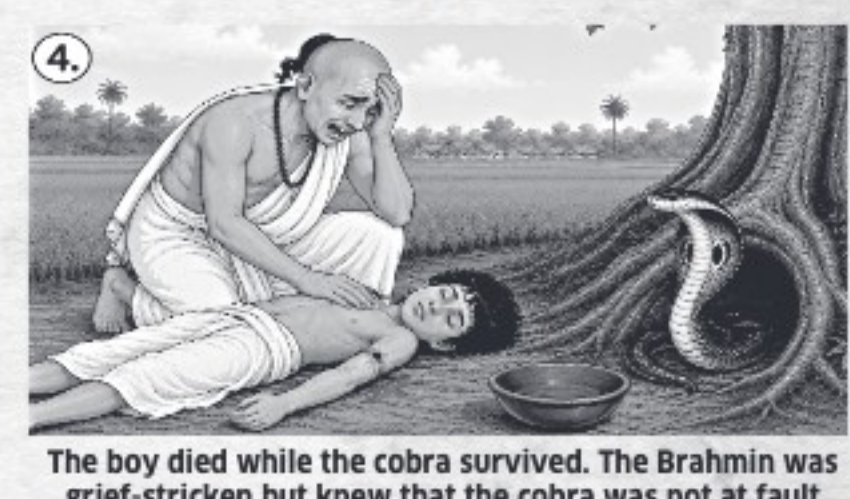
1. A kind Brahmin daily offered a bowl of milk to the cobra who lived in a burrow at the base of a tree, next to a field.



2. Soon the Brahmin's prayer for prosperity were answered by the cobra with a shiny gold coin everyday



3. When the Brahmin's son saw the gold coin, he thought there must be more in the cobra's burrow. He waited for the cobra to emerge and hit him with a stick. The cobra fought back and bit the boy



4. The boy died while the cobra survived. The Brahmin was grief-stricken but knew that the cobra was not at fault



5. The Brahmin again went to the same spot to offer the cobra milk and prayers. The cobra emerged and confronted the Brahmin. "Your greedy son is dead but you still come here for the gold coin. I have no affection left for you, my heart is broken. Go away and never come back



6. The cobra gave the Brahmin a parting gift, a big sparkling diamond. The Brahmin walked back home, lamenting the loss of both, his son as well as the blessings of the cobra.



7. **MORAL OF THE STORY:** Greed destroys common sense and leads to downfall