



Attaining Sustainable Development Goals (SDGs) Through Indian Knowledge System (IKS)- A Case Study of Sikkim

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Abstract: *The Indian Knowledge System (IKS) encases sustainability and overall well-being; thus, provide us with ideas and solutions to the contemporary global challenges. Integrating IKS with modern scientific approaches helps in environmental preservation, sustainable livelihoods, better health, quality education and ensure ecological balance. This research illustrates how Indian ancient knowledge system promotes sustainable development through a holistic approach. Also, the role of IKS in promoting SDG-2 (Zero Hunger) and SDG-4 (Quality Education), complementing modern sustainable practices, has been discussed. This paper highlights examples from organic farming in the state of Sikkim (associating with SDG-2); and focuses on the Indigenous education system of the Pre-Buddhist Era, Monastic education in Sikkim representing the ancient Gurukul system of education and the CM Shri Model School integrating present day education with sustainability (addressing SDG-4). The study is descriptive type and is conducted depending on secondary data (from various books, journals, websites, etc.). Furthermore, the researcher collected information of types of crops grown, outsourced items, cost of farming and net income of 20 farmers of the villages in Mangan district, North Sikkim; analysing their benefit-cost ratio to find economic viability of organic farming for sustainability. The results indicates that organic farming is viable and that by encapsulating traditional Indian wisdom with contemporary sustainable practices, India can successfully meet its development needs by combating hunger, promoting sustainable organic agriculture and ensuring inclusive equitable quality education.*

Keywords: *Indian Knowledge Systems (IKS), Sustainable Development Goals (SDGs), Zero Hunger, Quality Education, Organic Farming, Monastic Education, Benefit-Cost Ratio.*

Introduction: Indian Knowledge Systems (IKS) encompasses various disciplines including science, mathematics, language, arts, traditional medicine, astronomy, etc. ‘Sustainability’ becomes a part of our cultural heritage for generations; the spirituality of Vedic literature, yoga, the knowledge in Vastu Shastra and Ayurveda, the philosophy of Indian literature, social system, tribal and folk culture - are all closely interconnected with socio-economic and ecological sustainability. (Kaushiva, 2025). The origin of IKS dates back to the Vedic period (1500-500 BCE); both the Vedas and *Upanishads*, are the fundamental texts of Indian civilization. The primary aim of IKS is mainly to preserve and share indigenous knowledge for practical applications in everyday life, bridging the gap between modern knowledge and traditional wisdom to solve modern day problems. Sheikh, (2025) elaborated IKS as integration of *Jnana* (knowledge), *Vijnana* (science), and *Jeevan Darshan* (philosophy). The IKS concept provides a holistic approach to learn and emphasize balance with nature and sustainability. India, as a developing country, plays an important role in

sustainable development and traditional Indian knowledge system helps in this process of attaining sustainability (Pramanick & Mete, 2024).

In 2012, the United Nations Conference on Sustainable Development formulated Sustainable Development Goals (SDGs) in Rio de Janeiro. The concept of SDG was aimed to create a set of universal goals in order to meet with the environmental, political and economic challenges in the global arena. Out of 17 SDG goals, adopted in 2015 by all the United Nations members, SDG-2 (Zero Hunger) and SDG-4 (Quality Education), are crucial to achieve sustainable development by 2030. In this paper, the researcher discusses how IKS can direct these two SDG goals to achieve solutions to contemporary problems by integrating ancient Indian wisdom with modern sustainable practices. This manuscript emphasized the role of IKS in promoting SDG-2 (Zero Hunger) and SDG-4 (Quality Education), in the context of Sikkim state, India. In 2003, Sikkim started the transitional journey towards organic and gradually shifted towards all agricultural production activities through minimizing the use of chemical fertilizers or pesticides; thus became the first fully organic state of India in 2016. Organic farming, using traditional and sustainable agricultural practices, aligns with SDG-2 as the farmers are able to sustain their livelihood and combat hunger through it. Moreover, Sikkim is also the home to more than 200 of monasteries, which being one of the oldest forms of learning, representing ancient Indian Educational System. At present, the implementation of new CM Model school in 2025, aligned towards SDG-4, in order to provide holistic education combining IKS with present day education. The feasible linkages between SDG-2 and SDG-4 became the standpoint to define the presaging sustainable growth of the Sikkim state in forthcoming future.

Statement of the Problem: India is the home to major civilizations which has contributed to make effective progress in the world of science, arts, technology and culture. The scope of indigenous knowledge lies in the understanding of conservation of nature, local ecosystems and is inevitable in creating a sustainable future for all. Sikkim, being the prominent member of seven north east Indian state, is gradually creating an example that we can live a greener and sustainable lifestyle. So, the problem mentioned by the researcher is to link Indian ancient knowledge system to modern sustainable farming practices considering of Sikkim, likely-

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Review of Related Literature: The Indigenous knowledge systems (IKS) preserve the correlation of society with its natural ecosystem and needs to be blended with sustainable development initiatives to reach out to global concerns. Encompassing the richness of IKS will help in the attainment of an equitable, robust, and sustainable future. (Kaushiva, 2025). IKS offer integrative frameworks aligning closely with several SDGs and integrating ancient Indian wisdom with modern sustainability policies can provide more holistic pathways to achieve sustainable development. (Singh & Singh, 2026).

The current pillars for combating poverty (SDG 1) and maintain good health and well-Being (SDG 3) and the degree to which Indian knowledge systems have supported various schemes concludes that regardless of how many decades has passed, India is still dependent on the ancient knowledge and wisdom to reach the goal of sustainable development. (Pramanick & Mete, 2024). The social pillar for sustainable development encompasses equality of gender, better health, quality education, and poverty eradication in order to facilitate holistic and inclusive growth. These components upgrade human capital and improve societal cohesiveness. (UNDP, 2023). Furthermore, Sustainable Development Goal 2 (SDG2), aiming for “Zero Hunger” and with its eight associated targets, stresses the overall development of agriculture. Based on agroecological principles, organic farming in Sikkim ensures food and nutritional security, conserves agro- biodiversity ensures better livelihood and economic prosperity for small and marginal farmers. Innovative techniques of research, shared partnerships and an all-encompassing framework are needed to study this perspective (Batra et al., 2024)

Organic farming in subsistence using locally available resources is not that expensive and it requires institutional backup and monetary support from the respective government. Training is an essential component for adopting organic farming and giving incentives can be really helpful in adopting self-sustainable practices and traditional farming (Bhujel & Joshi, 2021).

Apart from some challenges faced by the hill inhabitants of the Sikkim Himalaya region viz. reduction of climate change impacts in Sikkim, opportunities lie in promoting Sustainable Organic agriculture, upgrading waste management facilities, increasing renewable energy sources and improving climate resilience. Sikkim is dedicated to improve sustainability which ensures a prosperous future for the people and also provides an inspiring example for attaining global sustainable development. (Sarma & Prity, 2025)

Another promising aspect of IKS contains the indigenous education system which fosters lifelong learning. A perception of India's Gurukul system discloses that in the quality of education provided in the ancient Vedic era was high. Gurukul system of education stresses on holistic development, individualized instruction, and a close relationship between the 'guru' and 'shishya.' This tradition was considered holy and pure in Hinduism. (Sevalami, 2019) that was focused on scholastic knowledge and nourishing ethical, moral and spiritual values. Students were trained in traditional arts, handicrafts, weaving, pottery and sculpture skills (SDG 4). In light of this, Sikkim gives insight into how technical and skill-based education has developed as an evolving tool for attaining SDG-4, emphasizing education and the use of skill-based techniques as a vital component of equitable, inclusive and continuous learning. (Nepal & Das, 2025).

Thus, the gap this study intends to cover is the role of IKS in promoting SDG-2 (Zero Hunger) and SDG-4 (Quality Education), along with the examples of how Sikkim is ending hunger and promoting sustainable agriculture through traditional farming. Also, the role of Sikkim in following the ancient Indian educational system and ensuring quality education through contemporary education system is discussed.

Objectives of the Study:

- To assess the role of IKS in promoting sustainable development specially SDG-2 (Zero Hunger) and SDG-4 (Quality Education).
- To explore the prospect of State policy in ending hunger and promoting sustainable agriculture through traditional farming in Sikkim.
- To examine how Sikkim is following the ancient Indian educational system and also ensuring quality education through contemporary education system.

Methodology: The study is descriptive in nature. The research is conducted depending mainly on secondary data. For checking the viability of organic farming in Sikkim to promote zero hunger, the researcher collected data from TSP (Tribal Sub Plan) Annual Report of 2023-24 of ICAR Research Complex for NEH Region, Umiam, Meghalaya. Information regarding - types of crops grown, outsourced items, cost of farming, total gross income, net income of 20 farmers of the villages of Mangan District in North Sikkim are collected, and benefit-cost ratio is analysed. Information about attaining quality education is collected from secondary sources like journals and websites.

Results and Discussions:

A. Role of IKS in promoting sustainable development specially in ensuring SDG-2 and SDG-4: The IKS contributes in attaining SDGs in various ways related to ensuring a world free of hunger and providing quality education for all by 2030:

Zero Hunger (Goal-2): End hunger, achieving food security, improved nutrition and promoting sustainable agriculture: India's ancient agricultural practices include organic farming, mixed cropping and

crop rotation promotes soil fertility and biodiversity, and paves the way to sustainable food production in India. The “Vrikshayurveda”, an ancient Indian text on “the science of plant life” is primarily focusing on sustainable agriculture. The book delves into the necessity of sustainable and eco-friendly farming practices, reducing dependency on chemical pesticides and fertilizers (Sheikh, 2025).

Besides food production, agriculture has provided income to rural population. But there is a risk to Indian agricultural sector due to climate extremities in many areas. This threat can be reduced by sustainable agriculture. Sustainable livelihood practices like organic farming, handicrafts, small-scale cottage industries can improve rural economies by creating more employment opportunities, thereby increasing purchasing power of rural people. Promoting traditional Indian diets can help overcome malnutrition and help in improving overall health due to its diverse and nutritionally rich properties. Indigenous food systems can contribute to achieve food security, providing better nutrition and dietary diversity. For example- Indigenous people of India grow Moringa tree, which offers edible leaves, flowers, tubers, seeds and nuts that are rich in nutritional value and have high antioxidant property. Indigenous food systems like traditional agro forestry help in environmental conservation. For example- intercropping can cut down soil erosion and can reduce water loss.

Quality Education (Goal-4): *Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all:*

1. **Ancient Indian Texts:** Emphasizing the significance of ancient texts like Ramayana, Mahabharata, and Bhagavat Gita, IKS embraces spiritual, moral ideologies and traditional values.
2. **Gurukul system:** In this system, the shishu live with their Guru in ashrams; where Gurus were the guides helping students for their intellectual and moral development. Personalized education was provided, focussing on **experiential learning and holistic development**, which is also the need of the present day.
3. **Holistic well-being:** IKS stresses on self-discipline, meditation, and yoga, which are important for both physical and mental well-being of students and teachers in present day also.
4. **Women education:** Since ancient times, right from the time of the Vedas, women were given importance in educational fields, showing equity and inclusivity of opportunities. For example-Gargi and Maitreyi, mentioned in the Brihadaranyaka Upanishad, are known for their major contributions to philosophical debates, exhibiting their active participation in education.
5. **Vocational education:** IKS emphasized on skill-based, experiential learning, engaging learners with indigenous arts, traditional crafts, and community-based services. Integration of IKS in modern curricula induces creativity, hands-on-learning, and analytical skills for problem-solving, thus, creating opportunities for employment.
6. **Modern Relevance:** By bridging modern scientific methodologies with traditional wisdom, IKS promotes innovation and creativity, fostering a more inclusive and interdisciplinary academic environment (Sharma & Baliya,2025). IKS encourages addressing contemporary societal problems by researching about nature, environment, logic, psychology, neuroscience, sustainable development, etc. The inclusion of IKS emphasized in the National Educational Policy (NEP) 2020, incorporates subjects like Ayurveda, Sanskrit, Yoga in modern curricula of schools and universities. Institutions like the IIT Delhi, IIT Roorkee and IIT Bhilai are researching about and incorporating IKS into modern curricula, thus promoting inclusive and equitable education. The IKS Division under the Ministry of Education aims to develop Vision 2047, bringing together leading thinkers and documenting a roadmap for the establishment of Bharatiya Gyan Parampara. (Indian Knowledge Systems, (n.d.).)

B. To know how Sikkim is ending hunger and promoting sustainable agriculture through traditional farming:

In January 2016, Sikkim was declared to be India's first fully Organic State by Prime Minister Narendra Modi. National Programme for Organic Production has declared approximately 75,000 hectares of agricultural land in Sikkim to be certified as organic.

Initiatives taken by the State:

1. Gradually chemical fertilizers were banned and replaced by organic plant nutrients.
2. Other composts were replaced by production of organic manure.
3. Many soil testing laboratories and bio fertilizer production unit were formed, and organic certification programs were introduced.
4. To conserve natural resources, gazing of animals is now prohibited in the reserve forest.
5. Banning plastic bags, cutting down on manufacturing and waste of plastics.
6. Various plantation drives which included planting fruit bearing trees were introduced by the State Green Mission.
7. Sikkim is a radiant example of how people can live a more environment friendly, sustainable and greener lifestyle.

Table 1: Data of 20 farmers of Mangan district of North Sikkim (TSP annual report 2023-24)

Sl. no.	Name	Village	Types of crops grown				Outsourced items	Cost of farming (in Rs.)	Total gross income (in Rs.)	Net income (in Rs.)	B:C ratio
			Livestock	Crop	Fruits	Spices					
1	Mrs. Chungmit Lepcha	Hee Gyathang, Lower Dzongu	Cow, pig, chicken, goat	Maize, soybean, millet, sugarcane, barley, buckwheat, tapioca, Seasonal Vegetables, fodder	Guava, tree tomato, mandarin orange, banana	Turmeric, ginger	Rice, salt, oil, sugar, wheat	8000/-	31,000/-	23,000/-	2.87
2	Mr. Pempa Tshering Lepcha	Sangdong, Lower Dzongu	Cow, pig, chicken, goat	Soybean, Maize, seasonal vegetables fodder, yam,)	Guava, peach, mandarin, tree tomato, banana	Ginger, large cardamom	Rice, wheat, salt, sugar, oil, turmeric	80,000/-	2,60,000/-	1,80,000/-	2.25
3	Mr. Mingma Lepcha	Sangtok, Lower Dzongu	Cow, goat, chicken	Maize, soybean, millet, sugarcane, wheat, buckwheat, seasonal vegetables, fodder	Guava, peach, plum, banana mandarin, tree tomato	large cardamom, Ginger	Rice, sugar, oil, salt, turmeric	10,000/-	3,61,000/-	2,61,000/-	2.61

4	Ms. Tshering Chukit Lepcha	Hee Gyathang, Lower Dzongu	Cow, chicken	Maize, soybean, millet sugarcane, rice bean, wheat, buckwheat, perilla, seasonal vegetables, fodder	Guava, mandarin, peach, passion fruit, tree tomato, banana.	Large cardamom	Rice, oil, sugar, salt, turmeric, ginger	10,000/-	31,000/-	21,000/-	2.1
5	Mrs. Gyamit Lepcha	Lingdong, Lower Dzongu	Cow, chicken	Maize, millet, soybean, sugarcane, rice bean, buckwheat, perilla, wheat, fodder, seasonal vegetables	Guava, pineapple, mandarin orange, tree tomato, passion fruit, banana.	Cardamom, turmeric, ginger	Rice, salt, sugar, oil	35,000/-	1,45,000/-	1,10,000/-	3.14
6	Mr. Samroo UgenPalz or Lepcha	Hee Gyathang, Lower Dzongu	Cow, pig, goat, chicken	Millet, maize, fodder, seasonal vegetables	Plum, kiwi	Large cardamom	Rice, oil, wheat, salt, sugar, ginger, Turmeric	40,000/-	205000/-	1,65,000/-	4.13
7	Mrs. Ongmu Lepcha	Shagyong, Lower Dzongu	Cow, chicken	Maize, buckwheat, fodder seasonal vegetables	Guava, plum, fig, pineapple, mandarin, tree, tomato, banana	Turmeric, ginger	Rice, wheat, oil, salt, sugar	14,000/-	32,000/-	18,000/-	1.28
8	Mr. Sonam Tshering Lepcha	Sangtok, Lower Dzongu	Cow, chicken, goat, duck	Maize, millet, barley, soybean, rice bean, sugarcane, upland rice, buckwheat, jobs tear, quinoa, perilla, wheat, fodder), seasonal vegetables	Guava, pineapple, mandarin, peach, Passion fruit, tree tomato, banana, plum	Ginger, turmeric	Oil, salt, sugar	15,000	46,000	31,000	2.06
9	Mr. Kenzang Lepcha	Shagyong, Lower Dzongu	Local cow, chicken	Maize, soybean, rice bean, sugarcane, buckwheat, perilla, fodder grass, seasonal vegetables	Guava, peach, tree tomato, banana, plum	Ginger, turmeric	Rice, wheat, oil, sugar, salt	6,000/-	17,000	11,000	1.83
10	Mrs. Phurkit Lepcha	Gor, Lower Dzongu	Chicken	Maize, millet, wheat, soybean, sugarcane, rice bean,	Guava, mandarin, peach, tree tomato, banana	Cardamom, ginger	Salt, sugar, oil, turmeric	1,68,000/-	56,000/-	3,92,000/-	2.33

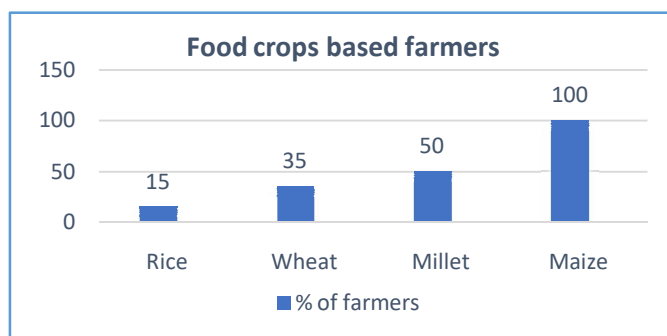
				buckwheat, upland rice, barley, perilla, job's tear, seasonal vegetables, fodder							
11	Mrs. Ongmit Lepcha	Lingdong, Lower Dzongu	Cow, chicken, goat, pig, duck	Maize, millet, barley, soybean, buckwheat, sugarcane, rice bean, upland rice, perilla, wheat, fodder, seasonal vegetables	Mango, guava, mandarin, peach, tree tomato, banana, plum	Cardamom, ginger, turmeric	Salt, sugar, oil	15,000/-	32,000/-	17,000/-	1.13
12	Mrs. Tsheringkit Lepcha	Taryong, Lower Dzongu	Pig, cow, chicken	Chilli, brinjal, maize, millet, fodder, seasonal vegetables	Guava, plum, mandarin, tree tomato, banana	Cardamom, ginger	Rice, oil, wheat, salt, sugar, turmeric	10,000/-	2,22,000/-	1,22,000/-	1.22
13	Mr. Dorjee Lhendup Lepcha	Shagyong, Lower Dzongu	Cow, chicken, goat, pig, duck	Maize, millet, soybean, sugarcane, buckwheat, fodder, seasonal vegetables	Litchi, guava, pineapple, peach, mandarin, plum, passion fruit, tree tomato, banana	Ginger, cardamom	Rice, salt, wheat, oil, sugar, turmeric	14,000/-	3,64,000/-	2,24,000/-	1.60
14	Mrs. Dawa lhamu Lepcha	Gnon, Lower Dzongu	Cow, chicken, goat	Maize, soybean, buckwheat, perilla, sugarcane, seasonal vegetables, fodder	Mango, guava, banana, tree tomato, mandarin, pineapple	Cardamom, ginger, turmeric	Wheat, rice, oil, salt, sugar	14,000/-	31,000/-	17,000/-	1.21
15	Mrs. Maya Pradhan (Lepcha)	Lingdong, Lower Dzongu	Pig, cow	Maize, fodder, seasonal vegetables	Guava, papaya, orange, banana	Ginger, turmeric	Rice, wheat, oil, salt, sugar	6000/-	1,73,000/-	1,13,000/-	1.88
16	Mr. Samten Lepcha	Sangtok, Lower Dzongu	Local cow	Maize, soybean, sugarcane, rice bean, fodder, seasonal vegetables	Guava, tree tomato	Ginger, turmeric	Rice, wheat, salt, oil, sugar	8000/-	22,000/-	14,000/-	1.75
17	Mr. Ongden Lepcha	Gor, Lower Dzongu	Cow, chicken, pig, duck	Maize, soybean, sugarcane, rice bean, fodder, seasonal vegetables	Guava, tree tomato	Ginger, turmeric	Rice, oil, wheat, salt, sugar	8000/-	2,21,000/-	1,41,000/-	1.76

18	Mrs. Chungmit Lepcha	Lingthem, Lower Dzongu	Cow, chicken	Maize, soybean, wheat, fodder, seasonal vegetables	Guava, kiwi, peach, plum, mandarin, grape, passion fruit, tree tomato	Cardamom, ginger, turmeric	Rice, wheat, salt, oil, sugar	10,000/-	35,000/-	25,000/-	2.5
19	Mrs. Yangden Lepcha	Lingthem, Lower Dzongu	cow, chicken, pig	Maize, Soybean, sugarcane, wheat, buckwheat, barley, fodder, seasonal vegetables	Guava, peach, mandarin, plum, passion fruit, tree tomato	Cardamom, ginger, turmeric	Rice, salt, sugar, oil	5000/-	13,000/-	8000/-	1.6
20	Mrs. Chanmu Lepcha	Noom, Upper Dzongu	Cow, chicken, goat	Maize, soybean, sugarcane, buckwheat, quinoa, perilla, seasonal vegetables, fodder	Guava, tree tomato, pineapple, mandarin	Cardamom, ginger	Rice, oil, wheat, salt, turmeric, sugar	17,000/-	42,000/-	14,000/-	1.47

Data Analysis:

1) Food crops - Rice, maize, millet and wheat-based farmers:

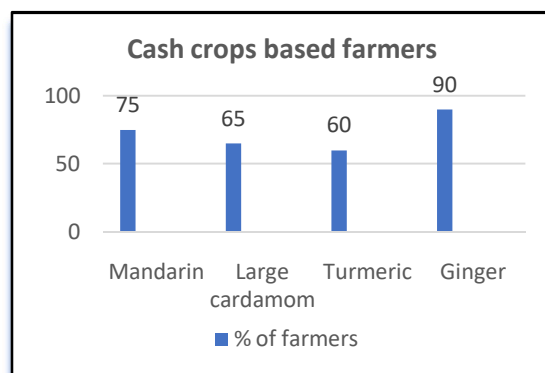
Crops	No. of farmers	Percentage (%)
Rice	3	15
Wheat	7	35
Millet	10	50
Maize	20	100
Total	20	100



Among food crops - 15% of the farmers are rice based, 35% are wheat-based, 50% are millet based and all i.e., 100% produce maize.

2) Cash crops – Mandarin, large cardamom, turmeric, ginger-based farmers:

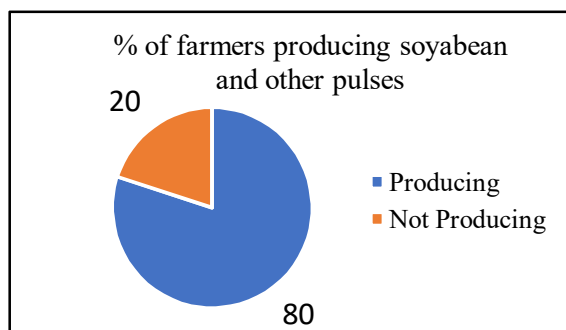
Crops	No. of farmers	Percentage (%)
Mandarin	15	75
Large cardamom	13	65
Turmeric	12	60
Ginger	18	90
Total	20	100



Among cash crops – 75% of the farmers produce mandarin, 65% produce large cardamom, 60% produce turmeric and 90% farmers produce ginger.

3) Farmers producing Soybean and other pulses (rice bean, French bean):

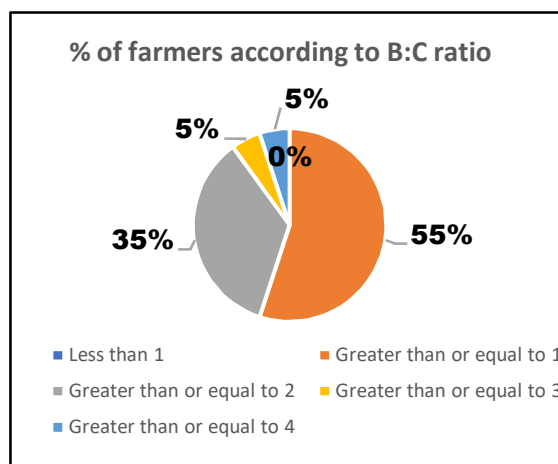
Soyabean and other pulses	No. of farmers	% of farmers
Producing	16	80
Not producing	4	20
Total	20	100



80% of the farmers produces soybean and other pulses like rice bean and French beans, 20% of the farmers does not produce soybean or any other pulses.

4) Benefit-Cost ratio of agricultural production of farmers:

Benefit-cost ratio	No. of farmers	% of farmers
Less than 1	0	0
Greater than or equal to 1	11	55
Greater than or equal to 2	7	35
Greater than or equal to 3	1	5
Greater than or equal to 4	1	5
Total	20	100



55% of farmers are having Benefit- Cost ratio ≥ 1 , 35% have B:C ratio ≥ 2 , 5% have B:C ratio ≥ 3 and 5% have B:C ratio ≥ 4 . **Findings:**

1. Maize based cropping system dominated in the field whereas; rice-based systems were less in number. Maize used as both food and fodder. Therefore, most of them need to outsource rice and wheat for their daily consumption.
2. Salt, sugar and oil are outsourced for daily consumption.
3. Most of the farmers produce and sell cash crops like mandarin, large cardamom, turmeric and ginger for their seasonal earning and better livelihood.
4. 80% of the farmers are producing Soybean and other pulses (rice bean, French bean) for proper nutritional security. 20% households are having protein deficiency due to absence of soybean and pulses.
5. High B: C ratio indicates more purchasing power. Here, 10% farmers are having more purchasing power than the rest, 35% having average and 55% having less purchasing power.

6. Most farmers having BC ratio >1 which indicates that organic farming is viable for the farmers in the Sikkim Himalaya region, i.e., organic farming with traditional organic inputs, is a profitable option.

C. To Examine How Sikkim Is Following The Ancient Indian Educational System And Also Ensuring Quality Education Through Contemporary Education System: IKS emphasizes on equity and inclusion, lifelong-learning, and assuring equal participation of women and marginalized groups in all aspects including education. Sikkim, with its literacy rate at 81.42% (according to 2011 census), has given highest priority to its education sector. The state's education evolving from traditional form of learning to more structured and modern system- from Pre-Buddhist influence to Monastic education to Modern day institutions as follows:

1. **Indigenous education (Pre-Buddhist era):** Before the advent of Buddhism, the indigenous people of Sikkim, the Lepchas, Bhutias and other tribal communities had their own conventional system of education. Education in this time was mainly dependent on oral instructions, storytelling, cultural transmission passing their rituals, customs and traditions. Knowledge was transmitted from one generation to the next which included- farming practices, craft-based and traditional knowledge of herbal medicines. They stressed on spiritual education in form of rituals and meditation.

The Lepchas worshipped the spirits, forests, rivers, mountains and the natural products of their surroundings, having their own distinct literature, script and language of their own. Over the time, these uncomplicated nature worshippers have converted either into Buddhism or Christianity(Lepcha, 2017).

2. **Monastic education:** Buddhism, in Sikkim, became dominant during the advent of Guru Padmasambhava around the 9th century. Since his advent, and with other Tibetan Buddhist missionaries, many monasteries were constructed one after another (Acharya, 1998).Gonpas (meaning "solitary place") or monasteries are centres for worship, meditation, learning and are considered as sacred. Serving as religious schools and abode for monks and nuns (lamas), monasteries play a key role in Sikkim's education system. The Monastic education can be a representation of the Gurukuls of the Ramayana and Mahabharata periods also, the Nalanda and Vikramshila Universities in ancient Bihar, were well developed Buddhist monastic universities where both Hindus and Buddhist scholars acquired higher knowledge (Acharya, 1998).

Monasteries, for example- the Rumtek Monastery and Pemayangtse Monastery, are still main the centres for education, where monks and nuns receive training in Tibetan language, religious texts and scriptures, philosophy, meditation practices and Buddhist rituals. Monastic education, much like the Gurukul system, promoted a sense of community and discipline. Embedded in the act of morality, self-realisation, and social harmony, it stressed on close guru-shishya relationship, holistic living, experiential learning, and the blend of intellectual, physical and spiritual development (Pathak & Saxena, 2025). In Sikkim, monastic schools are still the major centres for learning. Even, the present-day residential educational institutions in Sikkim are the modern products of this system.

3. **Modern Educational developments:** Establishment educational institutions by government of Sikkim, promoting equal accessibility and education for marginalized communities including girls. Namgyal Institute of Tibetology playing an important role to preserve and promote Tibetan Buddhism and their culture; Sikkim Manipal University (SMU) is a major centre for technical and professional offering programs in engineering, medical, health sciences, humanities and management; and Sikkim University, providing quality education for the bachelors, masters and research students. Emphasis is now given on preserving local languages like Bhutia, Nepali and Tibetan language along with Hindi and English. State Literacy mission and Sarva Siksha Abhiyan giving special focus on tribal and remote rural areas, and emphasis on vocational and technical education includes tourism, agriculture, handicrafts, hospitality and polytechnic.

4. **CM Shri Model School: cultivating future leaders with mountains, merits and yoga with the sunrise.** In 2025, through the legislation of Model School Act, the Chief Minister's Model School has been started by the government of Sikkim. The school, situated at Assam Lingzey, East Sikkim, is a fully residential school starting from class 6 up to class 12, working towards "holistic education". Other government schools will be considering it as "lighthouse" as it is working to produce upcoming leaders. Its vision is to incorporate education with culture, innovation and sustainability in Sikkim and generate a centre of excellence by nurturing meritorious students who are selected on basis of scholarship examinations.(Chettri, 2026). Emphasis is given on punctuality, discipline, soft skills, fitness, teacher mentorship, concepts like peer tutoring. Everyday routine will include physical training, scientifically designed curriculum along with yoga for both physical and mental health. Students are asked to pursue their hobbies and to take one vocational subject like electrician trade, carpentry, thanka painting etc.; similar to craft-based education in ancient Indian education system.

They have included AI and VR, computer, debate, drama, dance, craft, music and others, and planning to introduce bakery, cooking, pottery and also coding. The school is trying to incorporate National Education Policy (NEP) and bring STEM education. (Kumar, 2026). Teaching in this model school goes beyond the classroom. For example, industrial visits for students, getting touch with it is to attend workshops, and also teach financial literacy by opening bank accounts for every student. Enrolling students in scouts and guides to impart discipline, self-reliance and patriotism in them. These schools strengthen the entire education system of the state and thus often referred as a mini-Sikkim. Thus, the CM Model school integrates present day education with sustainability by combining vocational training and principles of NEP with AI, VR, ITI visits, workshops and also emphasizing on yoga, meditation, self-discipline and holistic education.

Conclusion: The Indian Knowledge System is providing an age old and established approach to sustainability by balancing economic development with environmental preservation and well-being of people. By integrating traditional wisdom and practices with modern scientific interventions, India is rising towards the 2030 Agenda of Sustainable Development embracing environmental sustainability, economic growth and social progress. IKS - encompassing Ayurveda, Yoga, Vedic sciences, folk traditions and sustainability – works towards achieving SDGs related to combating hunger, fostering sustainable agriculture and providing equitable quality education.

Sikkim is a top performing state in achieving SDGs showing a balanced development in contributing to Zero hunger and Quality education. Its ancient indigenous knowledge, monastic education and new developing model school system exemplifies multidisciplinary and inclusive education along with moral development and experiential learning. Thus, Organic farming of Sikkim promotes sustainable agriculture, conserve inherent soil fertility and facilitate resilient crop production in order to attain village level self-sufficiency and achieving food & nutritional security.

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