

## Cultivating knowledge: the importance of integrating agriculture and farming education in Indian schools

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*Amidst climate change and sustainability concerns, the imperative for agricultural education arises from the renewed focus of modern society, nature, agriculture and nutrition. Spanning primary to tertiary levels, this education encompasses diverse subjects. Elementary education instils fundamental concepts, while vocational programmes groom students for agricultural careers. At the college level, the emphasis shifts to teaching and research. Integrating agriculture into Indian schools yields multiple advantages, including enhancing fundamental life skills, nutrition comprehension, environmental consciousness and STEM education. Consequently, students are equipped with indispensable knowledge and skills, paving the way for a sustainable future in the ever-evolving world.*

The growing significance of nature, agriculture and nutrition in contemporary society, spurred by climate-change crises and sustainability imperatives, emphasizes the critical role of agricultural education. Agricultural education encompasses the instruction of agricultural practices, natural resources management and land stewardship. At the advanced level, its primary aim is to equip students for careers in the agricultural sector. The curriculum of agricultural education covers a wide array of subjects, including horticulture, land management, crop husbandry, agricultural science, small-animal care, machine shop courses, health and nutrition, livestock management and biology. Agricultural education is integrated into educational systems in other countries at multiple levels, spanning primary, secondary (encompassing middle and high schools in the United States), tertiary (including vocational schools and universities) and adult education. Elementary agricultural education finds a place in public and private schools, covering fundamental topics such as the growing of plants and animals, soil farming and conservation practices. Vocational agriculture programmes prepare individuals for careers in areas like production, marketing and conservation within the agricultural sector. College-level agricultural education focuses on training individuals to teach or conduct research, thereby advancing the fields of agriculture and food science. Additionally, general education endeavours to educate the public about matters pertaining to food and agriculture.

### **Importance of integrating agriculture and farming education in Indian schools**

Elementary students greatly benefit from genuine learning opportunities that revolve

around community-based subjects. Such experiences inspire and engage them, fostering the development of inquiry skills, practical application of academic knowledge, and establishing connections between their learning and the world outside their classroom. Specifically, introducing the study of food, agriculture, and natural resources in elementary classrooms can transform learning into a vibrant and meaningful experience, breathing life into their education. Recognizing this, the Indian Prime Minister, Narendra Modi, announced a significant educational reform in 2020 with the National Education Policy (NEP). This Policy aims to introduce agricultural education at the middle-school level in India. The decision reflects the recognition of the importance of agriculture in India's economy and the need to provide students with knowledge and skills in this crucial sector.

Indeed, integrating the food, agriculture and natural resources system holds significant importance for students on several fronts. Students encounter this system in their daily lives, whether through the food they eat, the clothes they wear, the homes they live in, the energy they use, or their interactions with the natural world. However, many students lack a comprehensive understanding of critical aspects such as making healthy food choices, the origins and production processes of food and renewable energy, and the broader environmental impact of their choices and behaviours. Certainly, a few issues are as globally crucial as ensuring adequate food supply, promoting proper food utilization and imparting knowledge about the components of the agricultural industry. This knowledge is paramount, considering the importance of food security, sustainability and responsible consumption in today's world. Thus, regardless of their future

career aspirations or whether they reside in urban, suburban, or rural areas, it is imperative that all students receive education about food, agriculture and natural resources. Furthermore, since food is a common denominator for all children, it is a compelling entry point to engage their interest in agriculture and foster their understanding of these critical subjects.

Integrating agriculture and farming into school curricula can yield numerous benefits, for students and society. Here are compelling reasons why including agriculture and farming in education can be invaluable.

### *Basic life skills*

Integrating agriculture and farming education in Indian schools provides students with fundamental life skills essential for personal development and resilience. Through hands-on experience, students learn the intricacies of cultivating crops and raising livestock, imparting them with practical knowledge on how to grow for their sustenance. This skill set is invaluable, especially during food scarcity or emergencies when self-sufficiency becomes crucial. Students gain the ability to nurture and sustain life, fostering a sense of independence and resourcefulness that extends beyond the classroom and into their daily lives. These foundational life skills empower them to be more self-reliant and adaptable in a rapidly changing world.

### *Nutrition education*

Integrating agriculture and farming education in Indian schools goes beyond cultivating crops; it cultivates a deep understanding of nutrition and its connection to overall well-being. Students delve into the origins

of food production, gaining insights into the nutritional value of various crops and the significance of a balanced diet. This knowledge helps them to make informed and healthier dietary choices. They develop a greater awareness of the importance of incorporating diverse and nutrient-rich foods into their diet. In doing so, students develop healthier eating habits and advocate for improved nutrition in their communities, ultimately fostering a culture of well-being and health awareness.

#### *Environmental awareness*

Integrating agriculture and farming education in Indian schools is pivotal in nurturing students' environmental awareness. It imparts a comprehensive understanding of the intricate relationship of agriculture with the environment and emphasizes sustainable practices. Through this education, students gain valuable insights into how agricultural activities impact ecosystems, soil health and water resources. This knowledge fosters a deep commitment to environmental stewardship, instilling in students a sense of responsibility and a desire to preserve and protect the natural world for future generations. In essence, it cultivates environmentally conscious citizens poised to make informed choices that contribute to a more sustainable and harmonious co-existence with nature.

#### *STEM education*

Integrating agriculture and farming education in Indian schools enriches STEM (science, technology, engineering and mathematics) education by infusing real-world relevance. Agriculture inherently spans multiple STEM disciplines, including biology, chemistry and agronomy. By incorporating agricultural concepts and practices into the curriculum, STEM subjects become more engaging and relatable for the students. They witness the practical application of scientific principles in crop cultivation, soil analysis and animal husbandry, making abstract scientific concepts tangible and fostering a deeper appreciation for STEM.

This approach not only stimulates curiosity but also encourages critical thinking and problem-solving skills within the context of agriculture. It equips students with a holistic understanding of how science and technology intersect with everyday life, preparing them for STEM-related careers while nurturing a lifelong fascination with these subjects. It also helps students understand the global food demand and supply scenario as geo-political contexts affect them and inculcate a sense of interconnectedness and an appreciation of the 'One World – One Health' concept. Ultimately, it enhances India's potential for innovation and scientific advancement.

#### **Conclusion**

Integrating agriculture and farming education in Indian schools transcends the cultivation of future farmers. It equips students with essential life skills, encourages healthier dietary choices, nurtures environmental awareness and prepares them for careers in the agricultural sector. In a world that will be further challenged by climate change and its consequences, this approach benefits individuals personally, contributes to India's economic growth and addresses pressing issues like food security and sustainability. It is an investment in a more self-sufficient, health-conscious and environmentally responsible citizenry while bolstering the nation's economy. In essence, integrating agriculture education is a transformative step towards a brighter and more sustainable future for India.

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