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ORGANIC FARMING PRACTICES IN SIKKIM SCHOOLS: A PATH TO EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Abstract

The National Curriculum Framework 2005 under its guiding principles includes the need to make ‘children sensitive to the environment and the need for its protection’ while living in harmony within oneself and with one’s natural and social environment as an important curricular concern (p6). Education for Sustainable Development (ESD) with its emphasis on fostering of ‘competencies that enable students to find sustainable solutions to demanding issues and prevent conflicts’ in their world is seen as a process towards such a goal. In this regard, Sikkim’s initiative towards achieving this broader aim of education has been an ongoing process in schools of Sikkim. This paper presents, from an educational perspective, integration of Education for Sustainable Development (ESD) through practice of Organic farming in government schools in Sikkim. This enables the objective of embedding ESD goals aiming towards development of competencies among learners for sustainable living.

The paper also focuses on how the concept of organic farming and green schools has been incorporated into the school curriculum. The process involving schools and the community to work together through a participatory and collaborative approach is enabling all stakeholders of school education to understand and practice the principles of sustainable development with available resources within their communities.

Keywords: Sikkim; Schools; Integration; Organic; Farming; Sustainable Development.

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1. Introduction

‘To reorient a curriculum to address sustainability, educational communities need to identify the knowledge, issues, perspectives, skills, and values central to sustainable development in each of the three components of sustainability – environment, society, and economy – and integrate them into the curriculum’ (Education for Sustainable Development, UNESCO, 2017).

In 2005, the United Nations launched “The Decade of Education for Sustainable Development (DESD)” emphasizing on the integration of the principles, values and practices for nurturing

sustainable development in education (Sharma. K & Pandya. M, 2015). This effort of the UN about achieving educational sustainability led to imbibing Sustainable Development Goals (SDG) in school curricula which has been equally emphasized and addressed by various education related agencies in India and the world.

The focused discussion here is that the student learning should be directed towards meeting the future challenges of society, environment and economy. Zouari Ahlem and Mohamed Amine Hammas (2014) in their work “Organic Farming: A Path to Sustainable Development” talks about the alignment of Organic farming with sustainable development approach. They argue that learning about Organic agriculture as a factor of sustainable development is fully required for the society, environment and the economy at large. Teaching Organic farming as an element of ESD contributes towards sustainable development which includes learning about not only the farming and food systems but also preparing the children with required capacities needed for responsible future action.

In this regard, the adoption of organic farming in government Schools in Sikkim is in alignment with this objective of ESD. This learning through experiences inside and outside the classrooms for environmental concerns is also in consonance with the principles of UNDESD–2005 and its recommendations.

The heart of this initiative of incorporating organic farming as co-curricular activity in schools of Sikkim is to apply learning ecological principles prioritizing sustainability challenges. It enables working closely with environment, farming and food system stakeholders in designing and implementation of its outputs. The activity of farming contributes to develop important learning skills for autonomous and lifelong learning. Practices from organic farming and other related agricultural farming strategies equips the students to counter with difficult challenges in agro ecology and related practices, including observation, participation, reflection, dialogue, and visioning. These capacities are applied in their life-long learning process which affirms their skills to provide responsible action in a complex and uncertain future.

Institutionalization of Organic farming practices in schools is directly aligned to the basic tenets of ESD enabling self-participation for a sustainable society, fostering competencies and inter connectedness. This initiative undertaken by the Human Resource Development Department, Government of Sikkim also strengthens one of the curricular areas in schools, ‘Work and Education’, listed in NCF 2005 which emphasizes ‘the pedagogic potential of work as a pedagogic medium in knowledge acquisition, developing values and multiple skill-formations’ (NCF, 2005). The declaration made by the Government of Sikkim in 2003 that Sikkim would be a fully organic state by the year 2015 and the Sikkim Organic Mission launched on 15th August 2010 set the road of organic farming in the state (RMSA, HRDD Report on Organic Farming in schools, 2018).

Following this, the Human Resource Development Department (HRDD), Govt. of Sikkim in 2017 under Rashtriya Shiksha Abhiyan (RMSA) initiated the adoption of organic farming in Secondary and Senior Secondary Government Schools in Sikkim. The main objective of the programme being the integration of sustainable learning through hands on experiences and life skills development among students.

With the aim of creating sustainable education, out of a total 767 government schools among the 4 districts, organic farming was initiated in 34 pilot schools that included Secondary and Senior Secondary Government Schools in Sikkim. The schools were provided with farming tools, seeds and organic composting materials. Technical support was led by the Horticulture and Cash Crops Development Department and Food Security & Agriculture Development Departments. An initial grant of Rs. 7000/- (per school) was provided from HRDD. Various orientations and workshops were also conducted on Organic farming. In October, 2018, the project was extended to 89 more Secondary and Senior secondary schools. Sustainable development through Organic Farming in schools is being extensively carried forward in these pilot schools in Sikkim.

2. Objective of the Study

The main objective of the study is to understand the processes of embedment of principles of Education for Sustainable Development in the practices of Organic farming in Government schools of Sikkim. The study also tries to find out the participatory and collaborative approach adopted by the schools in the process of organic farming for enabling sustainable learning and living.

3. Methods

The source of the data for this study is primary data acquired through questionnaire, interview and school visits. Of the first 34 schools selected, the survey was conducted to 20 pilot schools where organic farming project was initiated by the Human Resource Development Department, Government of Sikkim. Accordingly, questionnaire was administered to these 20 pilot schools to collect the required data and information for the study.

4. Results and Discussion

From the survey study of the 20 pilot schools of organic farming, it was observed that all schools were engaged in various farming activities. The majority of initiatives by schools used internal sources (HRDD) for funding, with all 20 schools drawing external support to develop their initiatives on organic farming. The data collected reveals that all the schools have been producing multiple items and engaging students and teachers directly in the process. The schools use much of their farming products for mid- day meal (MDM) and only nine schools are engaged in marketing the produce.

The following part of the paper gives an insight on the practices of organic farming of selected twenty schools which represents all four districts of the state.

The findings are supported with tables and figures.

Table 1: Year wise Organic Products in the schools of West district

Sl. No	Name of School	Area of Land used for Farming (approx in acres)	Year	Name of the crops / Vegetables grown	Production (in Kg.)	Produce used in MDM (%)	Produce Sold (%)
1	Kripasalyan-Daramdin SSS	1 acre	2017	Potato	300	56.67	43.33
				Lady Finger	80		
				Radish	30		
			2018	Lady Finger	60	40	60
2	Bariakhop-SSS	0.50 acre	2017	Cabbage	15	100	-
				Radish	8		
				Beans	8		
				Pea	5		
				Maize	15		
			2018	Maize	15	100	-
				Radish	10		
				Beans	11		
				Pea	8		
				Pumpkin	5		
				Chilly	2		
3	Lingchom - SSS	0.30 acre	2017	Vegetables	10	100	-
			2018	Vegetables	15	100	-
4	Pelling - SSS 100	1.5 acres	2017	Potato	400	80	20
				Peas	40	100	-
				Beans	40	100	-
				Radish	100	100	-
5	Yuksam - SSS	0.6 acres	2017	Cardamom	12	-	100
				Radish	4.5	100	-
			2018	Tomato	45	95	5
				Cauliflower	10	100	
				Broccoli	12	100	10
				Chilly	3	90	100
				Cardamom	20	-	-
6	Sopakha - SS	0.25acres	2017	Soybean	5	100	-
			2018	Pea, Soybean	4	100	-
7	Hee Yangthang S S	1 acre	2017	Cabbage	30	70	30
				Cauliflower	30	70	30
				Beans	21	100	50
				Radish	12	50	50
				Chilli	5	100	30
				Brinjal	10	50	50
				Tomatoes	8	70	70
			2018	Cabbage	15	70	30
				Cauliflower	20	70	30
				Beans	10	70	30
				Radish	8	100	-
				Potatoes	12	60	40
				Cardamom	10	100	-

Source: Field Survey, October, 2018.

Table 2: Year wise Organic Products in the schools of South district

Sl. No	Name of School	Area of Land used for Farming (approx in acres)	Year	Name of the crops / Vegetables grown	Production (in Kg.)	Produce used in MDM (%)	Produce Sold (%)
1	Bermiok-Tokal - SSS	0.0160 acres	2017	Vegetables	40	100	-
			2018	Vegetables	40	100	-
2	Namchi Girls SSS	0.0045 acres	2018	Coriander Beans Radish	6 14 9	100 71 -	- 29 100
3	Sadam - SSS	0.0272 acres	2017	Beans Pea	5 2	100 100	-
			2018	Beans Spinach	8 8	100 100	-
4	Yangang - SSS	0.04592 acres	2-017	Beans Radish Potato	10 10 10	100 100 100	- - -
			2018	Chilly Squash Beans	30 30 30	100 100 100	

Source: Field Survey, October, 2018.

Table 3: Year wise Organic Products in the schools of North district

Sl. No	Name of School	Area of Land used for Farming (approx in acres)	Year	Name of the crops / Vegetables grown	Production (in Kg.)	Produce used in MDM (%)	Produce Sold (%)
1	Phodong - SSS	0.0045 acres	2017	Beans	7	100	-
				Spinach	5	100	-
			2018	Beans Bitter-gourd Chilly	7 5 5	100 100 100	- - -
2	Eklavya Model Residential School	1 acre	2017	Spinach Potato Radish Beans Cherry pepper	10 20 5 15 1	100 - - - -	- 100 100 100 100
			2018	Peas Coriander Radish	2 10 3	100 100 100	- - -
3	Lingthem - JHS	0.5 acres	2018	Squash Beans Cardamom	10 6 6	100 100 -	- 100
4	Sonamchoda Lepcha Memorial - SSS	1 acres	2017	Tomato	300	50	50
			2018	Tomato	80	50	50

Source: Field Survey, October, 2018.

Table 4: Year wise Organic Products in the schools of East district

Sl. No	Name of School	Area of Land used for Farming (approx in acres)	Year	Name of the crops / Vegetables grown	Production (in Kg.)	Produce used in MDM (%)	Produce Sold (%)
1	Khamdong SS	0.0688 acres	2017	Vegetables	40	100	-
			2018	Vegetables	45	100	-
2	Tumin - SS	1 acre	2017	Maize Soya-bean	15 7	100 -	- 100
			2018	Vegetables	20	50	50
3	Sichey - SS	0.120 acres	2017	Beans Radish	10 12	100 100	- -
			2018	Pumpkin	18	100	-
4	Enchey - SSS	0.25 acres	2017	Radish Potato	15 15	5 5	95 95
	Penlong SS	0.0367 acres	2017	Squash Beans	20 20	100 100	- -
			2018	Radish Potato	5 10	100 100	- -

Source: Field Survey, October, 2018.

The study highlights that there is an involvement of teachers, students and various agencies in the process of organic farming in the schools. Other than Human Resource Development Department, the Department of Horticulture & Agriculture- Govt. of Sikkim and Spice Board – Govt. of Sikkim were directly engaged in the process. These agencies supported the schools with the training and workshops, orientations on organic farming and other essentials items required for farming like; seeds, saplings, water tanks, farming tools and greenhouse shed. Local community members like farmers, Self Help Groups and SMC Members have been extending their support in the form of manual labour in the preparation of farming beds, assisting the schools in other necessary tasks etc. This involvement of all the stakeholders and community in the process is reflective of the collaborative approaches in the activities which encompass the ESD components of participative learning with social responsibility.

The following figures below elicits the direct involvement of students, teachers, community and other stake holders in the process of organic farming activity in schools.

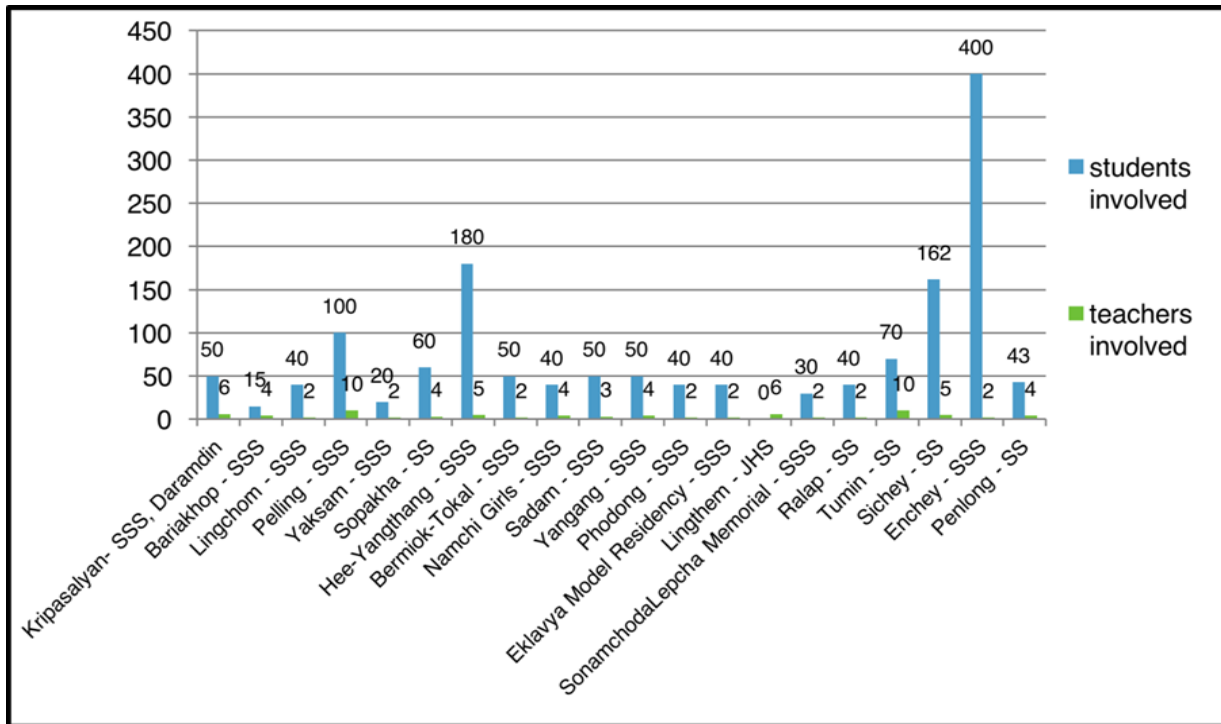


Figure 1: Number of teachers and students engaged in organic farming in selected schools
Source: Field Survey, October, 2018.

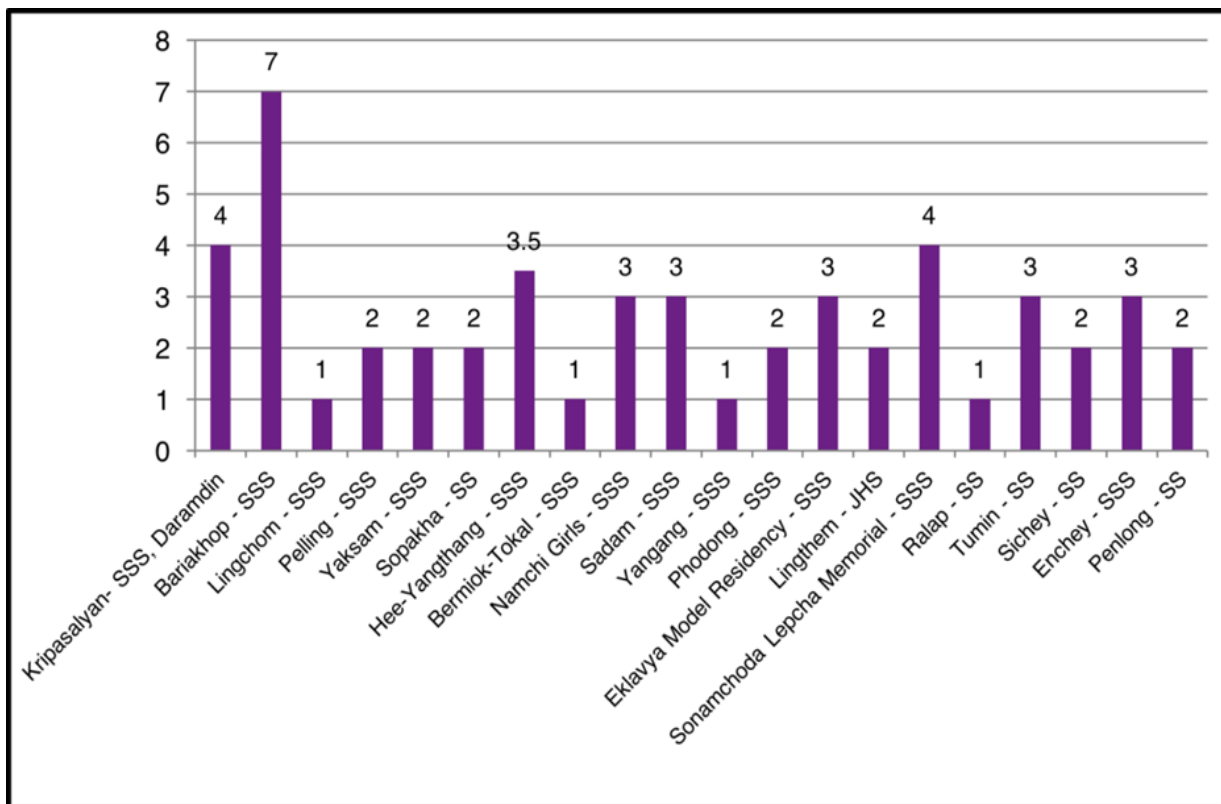


Figure 2: Time spent (in hours) in farming activity per week
Source: Field Survey, October, 2018.

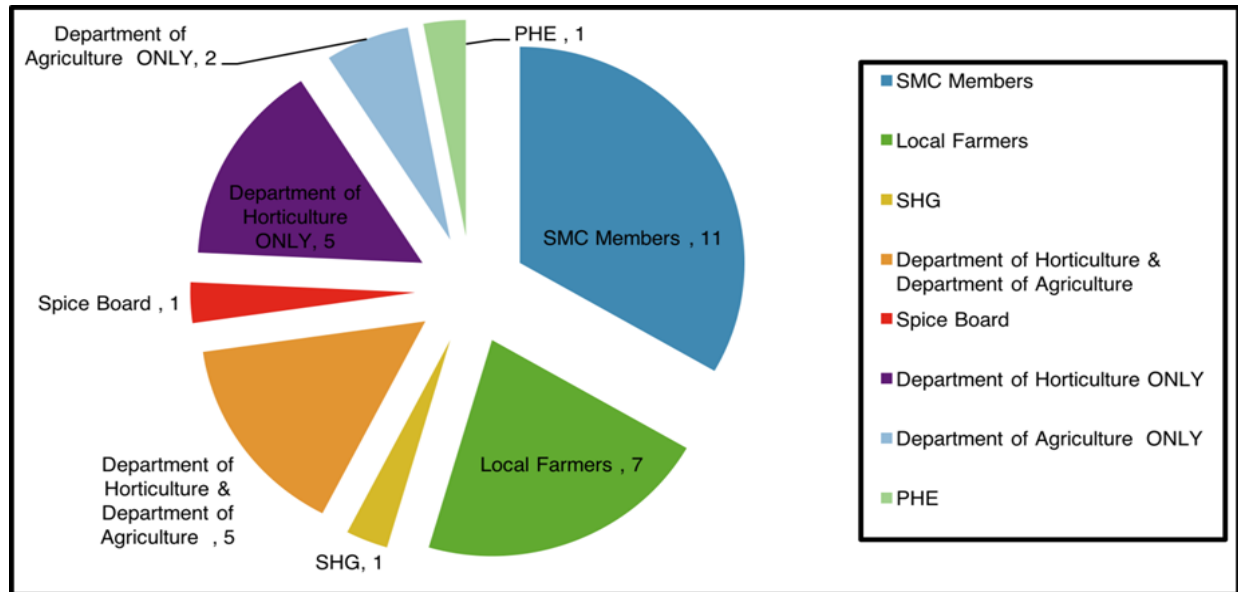


Figure 3: Agencies involved in organic farming in schools

Source: Field Survey, October, 2018.

Adding on to the present study on integration of organic farming in government schools in Sikkim, development of school curriculum for vocational education to align the practice of Organic Farming under the vocational subject of Organic Agriculture has also taken shape.

In continuation to the initiative of institutionalizing Organic Farming, HRDD has also proposed the development of curriculum for classes IX and X on Organic Farming as a new Vocational Trade to be introduced in government schools. In this regard, a working group under the guidance of SCERT Sikkim has initiated preliminary work with PSS Central Institute of Vocational Education, Bhopal (NCERT, MHRD) to work on designing curriculum on 'Organic Agriculture'. The subject will be taught at the secondary level of government schools of Sikkim under Vocational Course.

With this, Organic farming which is based on the principles of Health; Ecology; Fairness and Care will inevitably contribute to the objective of ESD which in turn aims to reorient education towards the meeting of sustainable development goals. In addition, the inclusion of Organic farming in the curriculum will also help facilitate a 'closer integration of learning and work' for all Sikkimese learners in their local environment.

5. Conclusion

The above study is an indicative of the Sikkim schools being inclusive of Education for sustainable development with the role of the schools, community and the governing bodies together working towards the objective of transforming education to shape a more sustainable world. The study reflects on the experiential education where students of all ages enjoy active learning and connectedness with practice. The incorporation and practice of organic farming/agriculture at school level allows spurting motivated learners. There is a total chance to apply the learning's in action leading to sustainable living. The idea of student-based organic farming education is not

just about teaching organic, ecological, or sustainable farming principles, rather it is more about connecting people of all fields and ages to work together. The education shift to organic agriculture for sustainable development develops an understanding of interconnectedness which experiences the principles of common ownership of living together for sustainability.

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