

Lesson Learned of Organic Agricultural policy of Sikkim State, India to Thailand

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Abstract

This study is a qualitative research paper to investigate the organic agricultural policy of Sikkim State and the Republic of India. The research utilizes government reports, documents and the policies of Sikkim and India. Sikkim officially announced it was the first to achieve its goal of 100 percent organic status, and the first in the world to become an organic state. There are three notable remarks of transformation to organic state: (1) Sikkim is a decentralized state in India and has independent policy-making; (2) continuous and comprehensive organic promotion of the Republic of India since 2000; and (3) continuous and comprehensive organic promotion of Sikkim state since 2003. Lessons learned from Sikkim which can be applied to Thailand include (1) potential areas or priority zones of organic agriculture in Thailand should be identified; (2) policy formation and policy implementation of organic agriculture of both central and provincial government should be relevant, and financial decentralization is essential to meet the provincial context that has been declared the potential areas or priority zones of organic agriculture; and (3) a ministry/office should be established to have responsibility of direct promotion of organic agriculture.

Keywords: Organic Agricultural Policy of Sikkim State, Organic Agricultural Policy of The Republic of India, Lesson Learned of Organic Agricultural Policy

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ตลอดบทเรียนนโยบายเกษตรอินทรีย์ของรัฐสิกขิมประเทศอินเดียเพื่อปรับใช้ในประเทศไทย

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รับวันที่ 30 สิงหาคม 2565 ส่งแก้ไขวันที่ 1 พฤศจิกายน 2565 ตอบรับตีพิมพ์วันที่ 23 พฤศจิกายน 2565

บทคัดย่อ

งานวิจัยนี้เป็นการศึกษาเกี่ยวกับนโยบายเกษตรอินทรีย์ของรัฐสิกขิมและสาธารณรัฐอินเดียโดยใช้ระเบียบวิธีวิจัยเชิงคุณภาพผ่านเอกสารชั้นต้น อาทิ เอกสารต่างๆ ของรัฐบาลสิกขิม รัฐบาลสาธารณรัฐอินเดียและบทความวิจัยพิบูลฯ รัฐสิกขิมเริ่มมีการประกาศการทำเกษตรอินทรีย์อย่างเป็นทางการในปี 2546 และในปี 2559 รัฐสิกขิมได้ประกาศว่าเป็นรัฐแรกของโลกที่เป็นเกษตรอินทรีย์ 100 เปอร์เซ็นต์ การศึกษารั้งนี้สามารถถอดบทเรียนที่สำคัญจากการศึกษานโยบายด้านเกษตรอินทรีย์ของสาธารณรัฐอินเดียและรัฐสิกขิมที่นำไปสู่การเปลี่ยนรัฐสิกขิมให้เป็นรัฐที่ทำเกษตรอินทรีย์เต็มรูปแบบได้ 3 ประการ คือ (1) การกระจายอำนาจของรัฐบาลสาธารณรัฐอินเดียไปสู่รัฐบาลระดับรัฐ (2) นโยบายส่งเสริมด้านเกษตรอินทรีย์อย่างต่อเนื่องและคร่าวงจร ของรัฐบาลกลางที่หนุนเสริมเกษตรอินทรีย์ในรัฐสิกขิม และ (3) นโยบายส่งเสริมด้านเกษตรอินทรีย์อย่างต่อเนื่องและคร่าวงจรของรัฐสิกขิมตั้งแต่ปี 2546 บทเรียนที่อาจมาปรับใช้กับประเทศไทยได้แก่ ประการแรก การศึกษาสภาพพื้นที่และจัดแบ่งโซนพื้นที่ที่มีศักยภาพในการทำเกษตรอินทรีย์ เพื่อทำให้ส่งเสริมและสนับสนุนสอดคล้องกับสภาพบริบท ประการที่สอง กำหนดนโยบายเรื่องเกษตรอินทรีย์ที่สอดคล้องกับระหว่างนโยบายของรัฐบาลกลางกับนโยบายของจังหวัดซึ่งประกาศเป็นพื้นที่ส่งเสริมเกษตรอินทรีย์และการกระจายอำนาจหน้าที่และงบประมาณ ให้เหมาะสมกับบริบทของพื้นที่ที่มีการประกาศส่งเสริมเกษตรอินทรีย์ ประการที่สาม การจัดตั้งกระทรวง/หน่วยงานที่มีภารกิจหลักในการส่งเสริมด้านเกษตรอินทรีย์โดยตรงทั้งในระดับประเทศและจังหวัด

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The Global Status of Organic Farming

For decades, food quality, food safety, and environmental issues have become an increasing concern since a lot of synthetic chemicals and fertilizers are used in conventional agriculture and the food chain becomes contaminated. As a result, consumers have called for food production to be more eco-friendly for higher food safety (Rembialkowska, 2007 cited in Das, Chatterjee, and Pal, 2020, p.1).

Globally, organic agriculture is practiced in 187 countries and the number of organic farmers are 3.1 million with 72.3 million hectares. Sale of organic products amounted to about 106 billion euros in 2019 (FAO 2021). According to “The World of Organic Agriculture”, the Research Institute of Organic Agriculture indicated that a 2019 survey of the institute revealed the prospects of organic products. Organic areas rose in almost every region to 1.1 million hectares or 1.6 per cent (FiBL,2021, p.21).

In 2017, it was reported that the practice of organic agriculture had increased to a great extent. The proportion of organic production in the Asian continent was the highest in the world at 40 per cent; Africa 28 per cent; Latin America 16 per cent; Europe 14 per cent; Oceania 1 per cent; and North America 1 per cent. In India, there were 835,000 organic producers (Das et al, 2020, page 4). In addition, in 2020 India was ranked 1st in terms of amounts of organic producers and 8th regarding World's organic land (FIBL & IFOAM Year Book, 2020 cited in Agriculture and Processed Food Products Export Development Authority (APEDA) https://apeda.gov.in/apedawebpage/organic/organic_products.htm

Sikkim: World's First Organic State

Sikkim is a mountainous state located in the Indian Himalayan Region and has a total area of 7,096 sq. km with a total population 610,577 people in 2011. The state economy is fundamentally based and dependent on agriculture and ecosystem services. The farming includes agriculture and livestock rearing in the northern high-altitude lands; traditional rain-fed crop production such as upland and wet terraced rice fields, maize, pulses, millets, buckwheat, barley, turmeric, potatoes, soybean, mustard and vegetables in the middle hill farms; and cash crop cultivation like large

cardamom, tea, ginger, horticultural crops like orange and floriculture (International Centre for Integrated Mountain Development, 2019, p.13-14).

Sikkim is the first state of India which officially adopted organic agriculture in 2003 to preserve soil fertility and ecological systems, to protect the environment, and to promote healthy food production and healthy living; and to reduce the risk of illness (International Centre for Integrated Mountain Development, 2019, page 6). Eventually, after 13 years, an area of 7,096 sq. km was transmitted to full organic practice. In 2016, Narendra Damodardas Modi declared officially Sikkim was India's first 100 per cent agriculturally organic state (The Hindu, 2016).

In Thailand, the policy of organic agriculture since the 1980s had not been comprehensive or consistent and it mainly focused on organic standards and organic certification.

In 2005 Organic farming became part of the government policy due to consumers' concerned about chemical residue in agricultural crops from conventional agriculture and consumers' higher demands of organic products. Organic agriculture was then identified in the Seventh National Economic and Social Development Plan (2011-2015) as alternative agriculture to promote sustainable development (Chinavarasopak, 2015). However, organic products had not grown much and it was reported that since 2006 organic farming area has increased by 0.1% yearly and the total organic agriculture area of Thailand was only 0.2% in 2011 (Government Public Relations Department 2014 cited in Win 2017).

Sikkim was the first state in the world that achieved 100 per cent organic status in 2016. In addition, according to the Thailand Ministry of Agriculture and Cooperatives, it was said "It is Thailand's goal to become the leader in organic food production in the ASEAN region" (Neo, 2022); however, as mentioned above, Thailand's agricultural land which was certified as organic was only 0.2% in 2011. This documentary research examined the lessons learned about the organic farming policy of Sikkim and knowledge to apply in Thailand to increase the nation's certified organic land. The qualitative method focused on studying primary online document such as newspapers, academic papers and studies, and government documents.

Federal State Promotion of Organic Agriculture

India is one of the countries in the world that has a large agricultural sector, comprising of 52% agriculture areas with a variety of climate and geographical landscapes with various kinds of crops, husbandries, and fisheries. Since the green revolution in India during 1960-1970 agricultural productivity has intensified until the supplies met the domestic demands. Even though primitive farming was practiced in India more than 4,000 years ago, organic agriculture according to standards of modern world and western definition has developed only recent decades. Nevertheless, “Zero Budget Natural Farming (ZBNF)”- the concept of farming without using any fertilizers, pesticides, and external inputs, had been proceeded in mid-1990s as the alternative agriculture to green revolution (Press Information Bureau, 2021).

The agricultural areas in India could be arranged into 3 classifications and the two first areas have potential to transition to organic farming. (Meena, Meena, Dotania and Sinha, 2013, p. 34):

Category I: agricultural chemical use is low in this area i.e. Assam, Jharkhand, Orissa, Jammu & Kashmir, Himachal Pradesh, Karnataka, Madhya Pradesh, Chhattisgarh and Rajasthan, and other north-eastern states

Category II: the area is hilly and rain-fed and promoted crops converting to organic such as tea, coffee, spices and cashew.

Category III: the area has irrigation system and a large number of agrochemicals are used.

Chadha & Srivastava (2020, p. 89) indicated that organic farming land in India had significantly expanded from 0.186 million hectare in 2005 to 1.93 million hectare in 2018. According to YES BANK, Ingenuus Strategy and Creative Research (2016, p.19) the following ten states had the highest organic food production in the country: Madhya Pradesh, Himachal Pradesh, Rajasthan, Maharashtra, Uttar Pradesh, Andhra Pradesh, Uttarakhand, Karnataka, Orissa, and Sikkim.

Table 1: Top Ten Highest Organic Food Production States of India in 2014-15.

State	Organic farming land with forest area (Million hectare)	Per cent %
Madhya Pradesh	1.93	39.4%
Himachal Pradesh	1.37	28%
Rajasthan	0.48	9.9%
Maharashtra	0.22	4.4%
Uttar Pradesh	0.11	2.2%
Andhra Pradesh	0.10	2.1%
Uttarakhand	0.09	1.9%
Karnataka	0.09	1.9%
Orissa	0.09	1.9%
Sikkim	0.08	1.6%

Since 2001 the federal government has implemented many policies and projects consistently to support organic agriculture.

The first national preprogramme to promote organic agriculture namely National Programme for Organic Production (NPOP) was established by the Ministry of Commerce and Industry in 2001 to lay the foundation of systematic development of organic farming of the nation in terms of organic agriculture certification, organic production and processing that complies with the National Standards for Organic Products (NSOP). The organic agriculture certification encompasses livestock, aquaculture, animal feed processing and management business, mushroom cultivation, seaweed, aquatic plants and greenhouse plants (Agricultural and Processed Food Products Export Development Authority, 2018, page3).

In 2004, it is regulated that Indian organic product export must be certified by the accredited certification bodies of India and accepted by the importing countries (Prakati India, 2021). Through NPOP many states such as Kerala, Gujarat, Uttaranchal, Madhya prides, Maharashtra, Andhra Pradesh, Rajasthan, Tamil nadir, Sikkim, Nagaland, and Mizoram have been promoting organic farming (Yadave, 2017, p. 157).

In the same year, the Indian Organic Certification Agency (INDOCERT) was registered by a non-government organization and national farmers' association and certified by National Accreditation Body (NAB) under NPOP. It is a non-profit organization and the first Indian agency of organic agriculture certification that deals with producers, processors, traders, and exporters. The agency certifies organic standards acknowledged by the importing countries i.e. U.S. Department of Agriculture (USDA); Canada Organic Regime (COR); and INDOCERT Organic Standards (INDOCERT,2022).

In 2004 the International Competence Center for Organic Agriculture (ICCOA) was founded to represent the organic farming movement in India and to build capacities of individual farmers and organizations related to organic agriculture in South Asia. The center had projects in 19 states: Andhra Pradesh, Karnataka, Tamil Nadu, Chhattisgarh, Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Sikkim, Tripura, Uttarakh, Jammu and Kashmir, and Odisha (Saathi Re 2017).

The main mission of the center involves five aspects.

Promoting conversion to organic farming: The conventional farmers are trained on producing their own farm inputs such as organic fertilizers and educated on organic agricultural standards, how to grow organic crops, and applying for organic certification.

Organic market development: The center has attempted to develop the organic market through channels of conferences, seminars, workshops, and national and international trades show for organic products.

Building the capacities of practicing organic agriculture: national and international seminars, conferences, trainings, and workshops related to organic agriculture are arranged to enhance organic farming and to build capacities of the farmers; for instance, training on organic agriculture and compost fertilizer preparation; pest, insect, and plant disease management; internal control system (ICS) and organic farming requirements.

Policy advocacy and research: The center has participated in advocacy on organic policy in many states of India like Andhra Pradesh, Karnataka, Gujarat, Himachal Pradesh, Kerala, Madhya Pradesh, Mizoram, Nagaland, Sikkim, and Tamil Nadu.

Consultation and cooperation: Consultants are provided to farmers, private companies, entrepreneurs, and volunteer organizations in terms of organic business development; supply chain management; and brand building and management. The center cooperates with both national and international organizations such as The Research Institute of Organic Agriculture -FiBL, International Federation of Organic Agriculture Movements – IFOAM), The Swiss Import Promotion Programme -SIPPO), Nurnberg Messe (BioFach), National Centre of Organic Farming, Agricultural and Processed Food Products Export Development Authority -APEDA, National Agricultural Cooperative Marketing Federation of India Ltd.-NAFED, and The Confederation of Indian Industry -CII.

In 2004 the National Centre of Organic Farming, under the national mission of sustainable agriculture, was established to promote organic farming and to cooperate with the regional centers in other six states i.e. Karnataka, Bhubaneswar, Manipur, Madhya Pradesh, Nagpur, and Haryana (National Centre for Organic and Natural Farming, 2021).

Rastriya Krishi Vikas Yojana was initiated in 2007 to develop and restore the agricultural and related sectors that had retarded growth; and to stimulate more government investment in agricultural sectors and related ones in order to increase farmers' income with the target of four per cent growth of agriculture sector during the 11th and 12th National Development Plans.

The National Mission for Sustainable Agriculture (NMSA) was launched from the year 2014-2015 under the sustainable agriculture mission that is one of the eight missions under National Action Plan on Climate Change (NAPCC). The mission has the objective to promote the growth of the agricultural sector especially in rain-fed agricultural areas covering 60 per cent of agriculture areas and 40 per cent of food production areas of India. Natural resources' conservation and sustainable usage was promoted as well as integrated agriculture, effective usage of the water, and soil health management. The measures are focused on improving crop seeds, livestock, fish culture, pest management, farming, nutrition management, agriculture insurance, credit and market supports, and information access, and livelihood diversities (Ministry of Agriculture & Farmers Welfare, 2019).

In addition, the NMSA included five components: (1) Rain-fed Area Development (RAD) based on an integrated farming system to escalate productivity and to diminish the risks related to climate change; (2) Sub-Mission on Agroforestry (SMAF) started in 2016-2017 to boost tree planting on farm areas with crops; (3) National Bamboo Mission (NBM) focused on employing the market potential of bamboo to expand its production and to establish a value chain system; (4) Soil Health Management (SHM) aimed at promoting crop specific sustainable soil health management, residue management and organic agriculture; (5) Climate Change and Sustainable Agriculture: Monitoring, Modeling and Networking (CCSAMMN) providing creation and dissemination of information and knowledge on climate change.

In 2015 Paramparagat Krishi Vikas Yojana was launched as the extended project of Soil Health Management (SHM) under the National Mission on Sustainable Agriculture (NMSA). The schemes in eight Union Territories were fully budgeted by the federal government. The North Eastern States of India and the Indian Himalayan states were assisted financially in the ratio of 90:10 (center: states) and the rest states in the ratio of 60:40 (center: states). The project aimed to develop sustainable organic agriculture through the convergence of ancient wisdom and modern science. The farmers were empowered via farm management, farm input production, participatory guarantee system (PGS), and value added of agricultural products and marketing. (Department of Agriculture, Cooperation & Farmers Welfare, 2017, p.1)

The central government recognized the northeastern states' potential of organic agriculture. Therefore, the Organic Value Chain Development in North Eastern Region Scheme was inaugurated in 2015 and implanted in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. The scheme aimed to develop and to increase the value chain of certified organic farming and its products in the markets through facilitating organic product gathering, processing, and branding (Integrated Nutrient Management Division, Department of Agriculture, Cooperation and Farmer's Welfare, 2018, p. 3).

All the central government projects to promote organic agriculture since 2001-2015 can be concluded in the table 1.

Table 2: Federal Government of India Projects to Promote Organic Agriculture Since 2001-2015

Year	Policy/Project	Policy/Project Features
2001	National Programme for Organic Production (NPOP)	Established by Ministry of Commercial and Industry in 2001 to lay the foundation of systematic development of organic farming of the nation in terms of organic agriculture certification and organic production and processing complied with the National Standards for Organic Products (NSOP)
2001	Indian Organic Certification Agency (INDOCERT)	Registered by non-government organization and national farmers' association and certified by the National Accreditation Body (NAB) under NPOP. It is the first Indian agency of organic agriculture certification and deals with producers, processors, traders, and exporters. The agency certifies organic standards acknowledged by the importing countries i.e., U.S. Department of Agriculture (USDA); Canada Organic Regime (COR); and INDOCERT Organic Standards.

Table 2: Federal Government of India Projects to Promote Organic Agriculture Since 2001-2015 (Cont.)

Year	Policy/Project	Policy/Project Features
2003	International competence center for organic agriculture (ICCOA)	Founded to be representative of organic farming movement in India and to build capacities of individual farmers and organizations related to organic agriculture in South Asia. The main missions of the center are involved in five aspects: (1) promoting conversion to organic farming; (2) organic market development; (3) building capacities of practicing organic agriculture; (4) policy advocacy and research; and (5) consultation and cooperation
2004	National Centre of Organic Farming	Established under the national mission of sustainable agriculture to promote organic farming and to cooperate with the regional centers in other six states i.e., Karnataka, Bhubaneswar, Manipur, Madhya Pradesh, Nagpur, and Haryāna.
2004	Authorized accreditation agencies for organic farming.	The ministry of commerce, government of India authorized agricultural and processed food product export development authority coffee board, spices board, tea board, coconut development board coca and cashew nut board to be an accreditation agency for organic farming.

Table 2: Federal Government of India Projects to Promote Organic Agriculture Since 2001-2015 (Cont.)

Year	Policy/Project	Policy/Project Features
2007	Rastriya Krishi Vikas Yojana	Project initiated in 2007 to develop, to restore the agricultural sector and related sectors that had retard growth; and to stimulate more government investment in agriculture sectors and related ones in order to increase farmers' income with the target of four per cent growth of agriculture sector during the 11st and 12nd National Development Plans.
2014-2015	National Mission for Sustainable Agriculture (NMSA)	Launched from the 2014-2015 under sustainable agriculture mission that is one of the eight missions under the National Action Plan on Climate Change (NAPCC) to promote the growth of agriculture sector especially in rain-fed agriculture area; to conserve natural resources; and to promote integrated agriculture, effective usage of the water, and soil health management. The NMSA included five components: (1) Rain-fed Area Development (RAD); (2) Sub-Mission on Agroforestry (SMAF); (3) National Bamboo Mission (NBM); (4) Soil Health Management (SHM); and (5) Climate Change and Sustainable Agriculture: Monitoring, Modeling and Networking (CCSAMMN)

Table 2: Federal Government of India Projects to Promote Organic Agriculture Since 2001-2015 (Cont.)

Year	Policy/Project	Policy/Project Features
2015-2017	Organic Value Chain Development in North Eastern Region Scheme	<p>The central government recognized the north eastern states' potential of organic agriculture. Organic Value Chain Development in North Eastern Region Scheme was inaugurated in 2015 and implemented in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. The scheme aimed to develop and to increase the value chain of certified organic farming and its products in the markets through facilitating organic product gathering, processing, and branding.</p>
2015-2018	Paramparagat Krishi Vikas Yojana	<p>The schemes launched as extended project of the Soil Health Management (SHM) under the National Mission on Sustainable Agriculture (NMSA) in eight Union Territories were fully budgeted by the federal government. The North Eastern States of India and the Indian Himalayan states were assisted financially in the ratio of 90:10 (center: states) and the rest ones in the ratio of 60:40 (center: states).</p> <p>The project aimed to develop sustainable organic agriculture through the convergence of ancient wisdom and modern science. The farmers were empowered via farm management, farm input production, participatory guarantee system (PGS), and value added of agricultural products and marketing.</p>

How Sikkim Transferred to Fully Organic State

The Constitution of India identifies India as a Union of States and Unitary States. The government of India is classified into three levels: the federal government of India, state government, and local government. Substantial power still rests with Federal government even if there is decentralization of the state government. In case of national emergency, power is vested in the central government. State government exercises internal security and other state issues and have the sole power to legislate on subjects as law and order, public health and sanitation, local government, taxation, etc. except judicial power. Local government is comprised of both rural and urban government in which local bodies have been elected by the local people. (Soikham, 2021, p. 15, 18,19,27 and 28)



Figure 1: Map of India with Sikkim State

Note: Sikkim State is in the North Eastern of India. From <https://www.mapsofindia.com/>



Figure 2: Map of Sikkim State, India

Note: Sikkim State Map and the provinces. From <https://www.mapsofindia.com/maps/sikkim/>

The development of organic agricultural policy of Sikkim could be classified into three phases: (1) visionary declaration of organic agriculture in 2003; (2) preparation stage to fully organic state (2004-2010) and ;(3) final stage of preparation and declaration of fully organic state (2010-2015).

Stage I: Visionary declaration of organic agriculture in 2003

Nowadays, neo-liberalism focusing on growth and increasing productivity without concerns about the environment, ecology and sustainable development plays the dominant role in the world economy. Nevertheless, Sikkim state prefers the priority of sustainable livelihood as the state policy with the strong belief that the policies and policy implementations are necessary to conserve the environment. (International Centre for Integrated Mountain Development, 2019, p. 47)

As mentioned above, the state government can exercise and issue policy on internal subjects such as law and order and in 2003 the first policy initiative towards organic agriculture in Sikkim had commenced. The Sikkim Legislative Assembly under the Chief Minister Shri Pawan Chamling adopted a resolution to convert Sikkim into an organic state (International Centre for Integrated Mountain Development, 2019, p. VII) after Sikkim encountered the severe environmental and health problems due to intensive usage of agricultural chemicals since 1994 (Dresrüssse, 2018). Since 2003 pesticides and chemical fertilizers were banned and nonorganic vegetables from other states were not allowed to be imported into the state as well (Gowen, 2018). The subsidies of chemical pesticides and fertilizers was reduced by 10 % annually until totally banned in 2014 (Beyond Pesticides, 2018).

Stage II: Preparation to fully organic state (2004-2010)

The promotion of organic farming of the Sikkim government in this stage included four aspects namely (1) development of internal control system and organic certification; (2) promotion of farm inputs; (3) organic agriproduct processing and value addition of organic products; and (4) development of marketing and brand building (International Centre for Integrated Mountain Development. 2019, p. 6-7; Singh, 2020;)

In 2003- 2009, the villagers were trained to be bio-villages as the first step of converting to organic farming with effective microorganisms. Organic practice and producing of agricultural inputs such as compost, organic fertilizers and pesticide made from local plants and cow urine were instructed (Panorama ,2019).

During 2003-2010, agricultural infrastructures were promoted and constructed to respond to farmers' needs such as post-harvest technology, organic seed preparedness center, soil testing laboratory and mobile soil testing lab, earthworm cultivation and, bio- fertilizer production and organic input production unit. In 2006-2007, eight earthworm cultivation units were set up in five government farms. Three Krishi Vigyan Kendras Centers (KVKs) were established in northern, western, and southern parts of Sikkim for training and transferring agricultural knowledge and technology to farmers (Agriculture Department, 2019).

Internal control system and organic certification had been promoted since 2006 with the support of related agencies of the Sikkim government with experts, and non-government organizations to assist the farmers to obtain organic certification registration. Public information and knowledge on organic agriculture via various media outlets were promoted to build the perception of organic farming to people. Organic farming schools were established to create job opportunity for unemployed youths in Sikkim (International Centre for Integrated Mountain Development, 2019, p.7).

Stage III: Final stage of preparation and declaration of fully organic state (2010-2015)

In 2010 Sikkim government launched “Sikkim Organic Mission” as an organic agriculture development framework for public offices and people. The mission aimed at Sikkim state to become a 100% organic state with the following vision and mission.

Vision

“People of Sikkim relish healthy food and enjoy sustainable livelihoods by practicing organic farming in a secure environment”

Mission

“To lead the change and leave no one behind by strengthening organic farming, entrepreneurship and green economic development”

(International Centre for Integrated Mountain Development, 2019, page 1)

From the mission, six indicators were determined to succeed the goal of fully organic state in 2015 (SIKKIM ORGANIC MISSION Policy Vision and Mission. (n.d.) p. 4-5).

Goal 1 All forest areas and forest vegetables, fruits, flowers, and wildlife are naturally organic; therefore, the areas and forest products are completely organic certified.

Goal 2 From total agriculture areas 100,000 hectares, 50,000 hectares would be converted to organic farming covering 60,000 families.

Goal 3 Sikkim organic brand would be created based upon the development of selected organic products and, organic entrepreneur creation for export organic products such as oranges, gingers, tea, bamboo shoots, etc.

Goal 4 The domestic organic production in farm would be replaced imported agricultural products such as vegetables, milk, fruits.

Goal 5 Hill farmers’ food security would be increased from their own organic farms and household consumptions.

Goal 6 Mechanism of government institutes would be effective to drive the growth of organic sectors.

In 2010, the Human Resource Development Department of Sikkim applied organic agriculture in public schools at the secondary level to integrate sustainable learning through life skill development and working with nature. Students were able to design their own organic farms, organic food systems, and related agriculture activities. Thirty-four pilot project public schools out of 767 total public schools participated in this scheme with the support of public agencies for agriculture tools, seeds, materials to make organic compost, and technical supports (Syangbo, 2019, p. 129-130).

In addition, in 2010 'livelihood schools' were set up in 41 public schools to train students with skills they were interested in and organic farming practice in three schools in Tadong, Daramdin and Bermiok in the east, the west, and the south of Sikkim respectively. This project aimed to prepare and train local people for the organic agricultural sector in the state and to build the job opportunities for educated youth still unemployed (Soi, 2022 and Skill Development Department, 2019).

The Sikkim Agricultural, Horticultural Input and Livestock Feed Regulatory Act was issued in 2014 to control import, sale, distribution and usage of inorganic agricultural, horticultural inputs and livestock feed to prevent the health risk of them to human beings, animals, and the environment and to help Sikkim into an organic state and all other matters related to the organic issue (Government Gazette, 2015). The Sikkim State Organic Certification Agency (SSOCA) was founded as an independent organization budgeted by the Sikkim government in 2015 to organic certification according to national and international standards not only in the state but also other states in India (Sikkim State Organic Certification Agency, 2021). Eventually, after 13 years of formally adopted organic agriculture in 2003, on 18 of January, 2016 Sikkim state was officially announced as the first fully organic state of India and all agricultural areas in 75,000 hectares were certified organic land (The Economic Times, 2016).

All the Sikkim government projects to promote organic agriculture since 2003-2016 can be summarized in the table 2.

Table 3: Sikkim Government Projects to Promote Organic Agriculture Since 2003-2016

Year	Policy/Project Features
Since 2003	On-farm production of organic manure to increase soil fertility
2003 -2010	Infrastructure facilities for post-harvest technology
2003-2010	Organic seed preparedness center
2003-2010	Soil testing laboratory and mobile soil testing lab
2003-2010	Earthworm hatcheries
2003-2010	Ginger processing unit
2003-2010	Biofertilizer Manufacture
2003	Reducing the subsidy on chemical pesticides and fertilizers by 10 per cent every year and totally banned them in 2014.
2005	Cancellation of quota of Chemical fertilizers from the federal government
2006	Organic certification supported by the related agencies of the Sikkim government, NGOs, service providers, and agricultural extension center (Krishi Vigyan Kendra)
2010	Declaration of Organic Mission
2014	Issue of Sikkim Agricultural, Horticultural Input and Livestock Feed Regulatory Act
2015	Established Sikkim State Organic Certification Agency (SSOCA)
2016	Formally announcement of fully organic state

Why does Organic Agricultural Policy Work in India and Sikkim?

According to Thanaphongsathon (1985, page 78-86) and Sapru (2019, page 21-24), factors influencing policy formation of organic farming in India and Sikkim could be analyzed into four significant aspects: geographical and historical, political, economic, and social dimensions.

Geographical and Historical Aspects

Agriculture has been in India since 9000 BC. (Janardhana, n.d., p. 40). Nowadays, agricultural sector is still the main economic sector of Indian livelihood. 58 percent of overall Indian populations are in an agricultural sector. The value added of agriculture, forest, and fishery is an estimated 276.37 billion USD in 2020 fiscal year. Total value added of agricultural sector and other related sectors was 17.8% in 2020 fiscal year. Food industry of India is expanding and Indian food products worldwide increased every year especially in industry of processing food. Indian food market and Indian consumer goods market is in the sixth largest ranking of the world. Indian processing food Industry is calculated as 32% of all food market of the country. Export of agricultural products and related business is valued at 41.25 billion USD in the 2021 fiscal year (India Brand Equity Foundation, 2022). In Sikkim state, the climate suits for produce farm plant and horticulture such as rice, wheat, maize, millet, barley, soil bean, mustard, cardamom etc. There are plenty of rare plants, animals, 5,000 flora species, and 424 herbal species in the state. Besides, with magnificent nature and top hills covering with snow, Sikkim has high potential of tourism industry such as homestay, ecological tourism, and health tourism (India Brand Equity Foundation, 2022). It can be seen that Sikkim and India have propitious backgrounds in terms of geographical, cultural, and historical circumstance related to agriculture; therefore, organic agriculture agenda and policy was set and implemented in both the federal government and state government.

Political Aspect

In the case of organic agricultural policy of the Indian government and Sikkim government, an important political element to policy making is the leader's perspective and regime. Prime Minister of India Narendra Damodardas Modi and Chief Minister Pawan Chamling of Sikkim viewed the importance of organic farming. PM Modi emphasized in the parliament speech that organic food sector was the first priority in aspects of sustainable farm and consumers and organic agriculture must be set as national agenda (YES BANK, Ingenuus Strategy and Creative Research, 2016, p.1).

PM Modi spoke via video conferencing at the National Conclave on Natural Farming in the Anand district of Gujarat. He said,

“We need to shift to organic farming methods...

Desi cow's dung and urine can act as a solution to protect your farm produce and also increase productivity.

Everything can be done naturally. [Then], we wouldn't have to pay for manure or any kit in this way.”

(India Today, 2021)

Shri Pawan Chamling Chief Minister of Sikkim mentioned the way of developing Sikkim state and organic agriculture in the state as a strategy for sustainable ecosystem and livelihood. He said,

“...Sikkim, in its humble way, made its choice and decided to prioritize a sustainable way of life as state policy. Our deep conviction that the environment is not a use-and-throw production facility has been central to our policy-making process.” (International Centre for Integrated Mountain Development, 2019. P. V)

In addition, the regime influenced policy making of organic farming. India is a Union of States and Unitary State. However, the federal system is applied as well. Decentralized state government is enabled to issue and to legislate on subjects as law and order, public health and sanitation, local government, taxation, etc. Sikkim could pass the law to ban import and usage of chemical fertilizers and pesticides and could initiate its own state policy of converting to a fully organic state.

Economic Aspect

Trends of consuming organic food for health care has ascended including the direction of worldwide organic food business. According to Global Marketing Associates, (2022) from 1999 to 2018 indicated world trade of organic goods increased from about ten billion US dollars in 1999 to 90 billion US dollars in 2018 respectively.

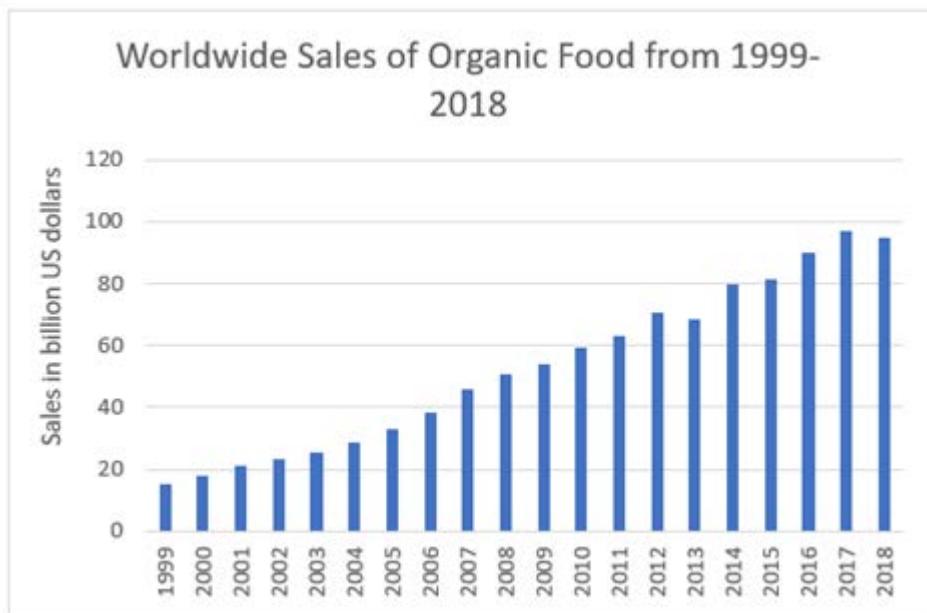


Figure 1: Statistic of Global Organic Food Marketing 1999-2018

“Global organic market: export opportunity analysis” Global Marketing Associates, 2022, <http://www.globalmarketing1.com/food-beverage/global-organic-market-export-opportunity-analysis/>

In part of the organic market in India, prospect of the organic food could be seen and forecasted. The Techsci Research (2021) shows increasing trade of organic market from 2016 fiscal year to the 2026 fiscal year.



Figure 2: Statistic of Organic Food Marketing in Indian Regions

“Report Description” Techsci Research, May 2021,

<https://www.techsciresearch.com/report/india-organic-food-market/1761.html>

Lessons Learned from the Organic Agricultural Policy of Sikkim State to Apply to Thailand

The study revealed that the government influenced the organic farming policy formulation, implementation, and success. Even if India is a Union of States and Unitary State; the federal system is part of the government as well. There is decentralization to state government and the state government is able to issue and to legislate on subjects as law and order, public health and sanitation, local government, taxation, etc. As a result, Sikkim could ban the chemical fertilizers and pesticides and could declare its own state policy of converting to a fully organic state.

From the study, it can be seen that even if Thailand and India government are dissimilar, in terms of geographical, and economic aspects Thailand is similar to India that could be competitive advantages with other countries in term of organic agriculture policy. According to The World Bank Group (2022), per cent of Thailand agricultural land since 1961-2020 has increased by 100 percent from 22.8% to 45% of the total land mass of Thailand. All agricultural outputs in Thailand were in 12th ranking and the 6th largest rice producing globally in 2019 in accordance with Thailand Board of Investment (2022). The lesson from the organic agricultural policy of Sikkim can be noted in 3 recommendations to apply in Thailand.

Firstly, political, administrative and financial decentralization is required. The study found that the federal government of India has not promoted organic farming in all the states of India. The central government did support Sikkim as the state developed on organic farming policy. Sikkim which is one of the potential states for organic farming had its own policy to promote organic agriculture. In addition, the federal government has strived in the same direction to promote organic farming. Sikkim promoted the 'Sikkim Organic Mission' and had strong views to convert it to an organic state. Several projects from upstream, midstream, and downstream of organic agriculture had been implemented. In the meantime, the projects and budgets of Indian government reinforced the organic practices of Sikkim as well; for example, the National Programme for Organic Production, Indian Organic Certification Agency, and Organic Value Chain Development in North Eastern Region Scheme.

According to Prakash (2022, p.18), effective decentralization includes political, administrative and financial decentralization. Three forms of decentralization are crucial to success of organic farming as well. Since 2005 organic agriculture was adopted as the national agenda in Thailand (Chinvarasopak 2020, p. 107) as a top-down policy and the promotion is applied nationwide. Political decentralization is needed for the provinces to have self-determination to choose whether they need to promote organic agriculture and administrative and if financial decentralization will permit the provinces to implement organic farming policy that complies with their provincial contexts and parallels with central supports.

Secondly, a ministry/office should be established that is directly responsible to promote organic agriculture both in provincial and national level. The research results revealed that in India there is the National Programme for Organic Production responsible for organic certification directly under the Ministry of Commerce and Industry. In Sikkim, Sikkim State Organic Certification Agency was established to certify organic farming to inner and outer states in accordance with national and international organic standards.

In Thailand, the main ministry that is responsible for the promotion of organic agriculture is the Ministry of Agriculture and Cooperatives and the promotion work is assigned to a number of agencies such as the Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives, the Department of Agriculture Extension, the Department of Agriculture, and Land Development Department, etc. It seems that in Thailand too many bureaus in charge of organic farming promotion are disadvantageous and it is unquestionable that these agencies promote conventional agriculture also. Thailand needs a central governing agency to promote organic agriculture and the provinces that adopt organic farming need to have one agency to facilitate organic agriculture development and coordination with the central government.

Lastly, but most importantly, zoning of organic agriculture areas and potential areas should be identified. In India, the agricultural areas could be arranged into 3 categories with two classified high potential to transition to organic farming areas. Moreover, the National Bureau of Soil Survey and Land Use Planning cooperated with the Indian Institute of Soil Science, Bhopal, and Food and Agricultural Organization (FAO) to start the scientific research in 2011 to show organic carbon stock in the soils of all states of India via a geo-spatial digital map. The study identified that besides Sikkim, almost all of north-eastern India including Assam, Meghalaya, Tripura, Mizoram and Manipur are perfectly fit for organic farming (Behl, Manka, 2017). This information reflected that database and zoning play significant roles to promote organic agriculture. In Thailand, there is only agricultural zoning and agricultural economics crop zoning.

Table of Summary of the Lesson Learned and Recommendations

Lessons from Sikkim State	Recommendations to Thailand
The government influenced the organic farming policy formulation, implementation, and success.	The political, administrative and financial decentralization is required in Thailand to promote organic agriculture
National and state agencies are set up to be in charge of organic agriculture promotion	A specific ministry/office in both provincial and national level should be established that is directly responsible to promote organic agriculture.
Database and zoning of potential areas of organic agriculture play significant roles to promote organic agriculture in India.	Zoning of organic agriculture areas and potential areas should be identified to promote organic agriculture in Thailand.

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