

“It is vitally important that we can continue to say, with absolute conviction, that organic farming delivers the highest quality, best tasting food, produced without artificial chemicals or genetic modification, and with respect for animal welfare and the environment, while helping to maintain the landscape and rural communities” Prince Charles.

CHAPTER VIII

COMPARATIVE ANALYSIS OF THE VALUE CHAIN OF GOVERNMENT-SPONSORED AND NON-GOVERNMENT- SPONSORED ORGANIC FIRMS.

8.1 Introduction

This chapter discusses the value chain of Government sponsored and non – Government sponsored organic firms. The case study approach is used to compare the value chain of the selected firms. Three non-Government sponsored organic firms and five Government sponsored organic firms (for five clusters/districts in the present study) are considered for the study. Three non-Government sponsored organic firms are Nahar Organics, Jeevanksh Eco Products Pvt. Ltd, and Pabhoi Greens. Ten parameters are considered to compare the value chain between two sets of organic firms, which are technology, infrastructure, customer focus, information, diversified products, awareness and knowledge, capacity building, competitive advantage, pricing, and logistic drivers.

8.2 Value Chain of Non- Government Sponsored Organic Firms

The details of the three non-government sponsored organic firms (Nahar Organics, JeevAnksh Eeco Products Ltd. and Pabhoi Greens) considered for the study are shown below. After the brief description, individual rating score for each firm with justification/reason for the score of each parameters is provided.

8.2.1 Nahar Organics

Sunil Uttam and Binita Gogoi founded Nahar Organic Pvt. Ltd. in 2014 at Guwahati to explore the organic market, focusing on spices, herbs, and essential oils. The firm supplies organic raw/semi-processed spices to various buyers across India and mainly deals with the wholesale market or B2B market. With around 30 staff, the company is actively working with 1000 farmers in Meghalaya, Nagaland, and Assam. The company complies with the NPOP standards, and Sikkim State Organic Certification Agency (SSOCA) is the certification agency for crop production and handling of organic produce. The employees and farmers

received training from NABARD and NEDFi from time to time on various aspects like market linkage, export promotion, etc. In addition to the farmers directly involved with Nahar Organics, the company also has a contract farming agreement with FPCs in Mizoram to capture the demand (on 17th July 2023, Nahar Organic signed an agreement with Mawmrang Organic Farmer Producer Company to supply 60 MT of white sesame seeds)(*Contract Farming Agreement Signed*, 2023). The company procures sundry turmeric slices from organic farmers of Meghalaya, Nagaland, and Assam. The firm handles and packages the semi-processed material as per organic standards, like the cleanliness of workers and equipment, dedicated vehicle for transportation, and use of new jute bags and steel containers. The packaged items are sold in bulk to customers in Mumbai, Karnataka, Gujrat, and Rajasthan. The organic semi-processed products are processed in factories, and the value-added products are sold at domestic and export markets. The farmers have a better market linkage and a continuous supply of organic semi-processed to distant traders. The farmers are linked with the company through contract farming which provides them with a better and regular income for their organic produce. The company also provides proper hands-on training for organic farming to the farmers and conducts regular inspections of the produce as per the organic standards. The timely and free flow of information among chain actors ensures that company supplies the products on time. To interact with potential customers, the firm has a strong social media presence and websites. The company is currently not involved in any organic production activities; however, it intends to establish its processing plant to produce various value-added organic products for end consumers. Apart from spices, the company also trades various organic products like herbs and essential oils. In addition to a range of product catalogues, the company provides extension services related to organic farming and value chain development in FPCs in Nagaland. The details of the organic products traded by the firm are shown in the below table.

Table 113: Showing the List of Organic Products Traded by Nahar Organics

Major Produces	Details
Spices	Turmeric, Ginger, Red chili, Black cardamon, Black pepper, Long pepper, Stone flower.
Herbs	Black turmeric, Black ginger, Thyme, Rosemary, Nageshwar phool, Gol pipal.
Essential oil	Citronella oil, Lemon grass oil, Mentha oil, Patchouli oil, Agarwood oil, Sugandha mantri oil.
Other products	Black rice, Black sesame, Kalonji

Source: Secondary data (*Nahar Organics / World of Spices*, n.d.).

8.2.2 JeevAnksh Eco Products Pvt. Ltd

JeevAnksh Eco Products Pvt. Ltd. was founded by Mr. Gunajit Brahma (an alumnus of IIM Indore) in the year 2012 at Guwahati. The word “JeevAnksh” is an amalgamation of the hindi word “Jeevan Ka ansh” which means “Ingredients of life”. The company deals with procuring high quality organic dailies like spices, food grain, fruit, and vegetables from farmers across Northeast India and then sold to big retail stores in urban areas. At first, the company was started in the B2C model (Business- to- customer model); however, as local demand was not responding adequately, the company adopted the B2B model (Business- to- business model), where it supplies organic produce to various retail stores within the country and outside the country. The company supplies more than 300 certified organic food products for domestic and export markets from the farmland near the Indo- Bhutan borders of Northeast India, cultivated by marginal and small tribal farmers of that region. The company works with around 2000 certified organic farmers and provides them with the forward market linkage within and outside the country. The company’s product reached the retail outlet across India, South East Asia, Middle East, Europe and North America.

The company won “National Entrepreneurship Award” for the year 2016-17 by MSDE (Ministry of Skill Development and Entrepreneurship) and received support and consultation services from various organization. It completed incubation with “The Land Accelerator – South Asia 2020”, organized by WRI (World Resources Institutes) USA; Zonal Technology Management and Business Planning & Development Unit of Indian Agricultural Research Institutes, New Delhi in the year 2016-17; NeatEhub (North East Agriculture Technology Entrepreneurs Hub) of Assam Agricultural University in the year 2019-2020.

The company maintains the end-to-end value chain of certified organic produce (certified by SGC and Onecert agency) from farmers to the retail stores. It mostly deals with varieties of organic products like black rice, red rice, joha rice, turmeric, black peppercorn, naga king chilli, large cardamom, sichuan pepper, cinnamon bark and kidney beans to name a few. Apart from a wide range of product lists, the company also engages in input businesses like vermicompost, bio-manure, and bio-pesticides etc. With a motive to expand organic farming activities across the region, the company provides 360⁰ farm-to- plate model with forward market linkage so that farmers can have fast and easy market linkage with the customers. The company undertakes contract farming and at present it is linked with around 10000 farmers covering over 1000 hectare of organic farmland.

8.2.3 Pabhoi Greens

The origins of Pabhoi Greens may be traced back to 1973 when Lt. Dr. Hemen Dutta (father of Neelam Dutta, Managing Director & Founder of Pabhoi Greens) graduated from Gauhati Medical College and returned to his village Pabhoi in Biswanath Chariali (Now in Sonitpur District of Assam) after working in government hospitals for a few years. In the years 1978-79, he started farming with 3 hectares of land particularly for fishery and paddy cultivation. Pabhoi Greens shifted to organic cultivation in the year 2003 and now the firm produces a wide range of organic crops and vegetables like rice, tomatoes, chilies, leafy vegetables, beans and tubers, and fruits such as papaya, guavas, and lemon with a team of 40 like-minded people. In addition to organic farming and seed production, Pabhoi Greens promotes the organic movement in Assam and Northeast India through various projects. Since 2008, Pabhoi Greens started training and community-building activities to spread the knowledge and practices of organic farming and seed saving throughout the farming community and the larger population. The firm collaborated with women's groups from Nagaland and Arunachal Pradesh to train them, especially on seeds and post-harvest management. In addition to teaching school children about organic farming and environmental education, the firm also welcomes university students as interns. Over the past four years, the firm has taught around 8000 like-minded individuals, including NGO official. The firm is building networks among organic farmers in northeast India through cooperative farming. In 2020, the firm started agro-tourism and farmstay services, which was the first organic farmstay in the region. The firm also provides consultancy services to organic FPCs/FPOs across the region.

Mr. Neelam Dutta has twenty years of hands-on experience in organic farming, and his firm has collaborated with Sativa Rheinau (a Swiss organic and biodynamic seed producer) since 2015. Mr. Dutta visited several European organic and biodynamic seed companies, such as Bingenheimer Saatgut in Germany, Reinsaat in Austria, and the University of Wageningen in the Netherlands.

Pabhoi Greens is a first-of-its-kind organic seed initiative in India and the first seed company in North East India. The firm adopts an integrated and collaborative organic farming approach to promote the practice of organic farming across the North Eastern region. The company primarily concentrated on organic seed production for various horticulture crops across diverse agro-climatic regions to serve smallholder farmers in the North-Eastern

Region with high-quality, reliable, and adaptable organic seeds. The firm adapts a local value chain approach and targets the regional market (North East region). The value chain model supports the local economy, providing local consumers with greater access to organic-grown produce with the competitive advantage of being the “organic seed hub” of the region. The company is one of India's certified organic seed producers, having propagated over 500 varieties of organic high-yielding vegetable seeds that are locally adaptive and climate-resilient. The organic seed catalog is developed with all the qualities of the plant and published on the firm website for mass circulation. The firm provides consultation services to farmers and FPCs and supplies organic inputs (vermicompost and organic seed) across the state and region. The details of the major products and services provided by the firm are shown in the below table.

Table 114: Showing List of Major Products and Services of Pabhoi Greens

Major produce	Details	Areas of operation
Organic Seed	i. More than 500 varieties of organic high-yielding vegetable seeds. ii. More than 140 varieties of heirloom tomatoes. iii. Around 108 varieties of rice.	Across the country.
Vegetables and fruits	i. Vegetables - mostly tomatoes, chilies, brassicas, leafy vegetables, beans, and tuber. ii. Fruits- papaya, guavas, and lemon.	Mostly sold directly to the local market through the firm's outlet (Biswanath Chariali) and through to a farmer's cooperative
Rice	i. Rice cultivation is done by SRI method. (System of Rice Intensification) ii. 40% of the rice is sold to consumers. iii. 30% is used for seed production and 10% is used for research purposes. iv. Remaining is used for on-farm consumption.	Sold in local and periphery markets (Tezpur).
Fish	The firm sells grown-up fish and is involved in fish breeding and reproduction organically.	Sold in local and periphery markets (Tezpur).
Dairy, Duckery & Apiary	i. Commercial production of milk has not yet started. Cow dung and cow urine are used for vermicompost and biopesticide production. ii. Honeycombs ensure better pollination.	
Vermicompost	i. Produce around 300 metric tonnes of organic vermicompost manure. ii. Produce bio-pesticides and biofertilizers.	Around 80% of the vermicompost is sold to various organic farmers/FPCs in Assam and other North Eastern states.
Consultation service and training programs	The firm provides training workshops on organic farming, promotes agro-tourism and farm stays, and provides consultation services.	North Eastern Region.

Source: Secondary data (*Pabhoi Greens / Organic Seed Bank / North East India*, n.d.).

8.3 Rating Score of Various Parameters for Value Chain of Non-Government Sponsored Organic Firms.

The individual rating scores with a justification of each score for ten parameters of the value chain (technology, infrastructure, customer focus, information, diversified products, awareness and knowledge, capacity building, competitive advantage, pricing, and logistic drivers) for three non- government sponsored organic firms namely Nahar Organics, JeevAnksh Eco Products and Pabhoi Greens are shown in below table. Various sub parameters are ranked with 1 to 5 scale (1= lowest and 5 =highest) and also the reason for the same is also highlighted for all three selected organic firm.

Table 115: Showing Rating Scores of Various Parameters for the Value Chain of Three Non-Government Sponsored Organic Firms.

Parameters	Nahar	Jeev anksh	Pabhoi
A. Technology			
A1. Technology adoption in the production & and processing of value-added organic products.	2	5	4
A2. Technology adoption to upgrade the product type and quality aspect of the organic products.	4	5	3
A3. Technology adoption in the marketing of organic products.	4	5	3
A4. Technology adoption to build a strong and efficient network structure to link producers and consumers	2	4	3
A5. Technology adoption to communicate with chain actors.	4	5	5
<p>Nahar Organics: (A1) The firm did not have any processing plant and farmers use primary technology in production and harvesting of organic crops. (A2) The firm use technology in handling and product upgradation. (A3) The firm mostly deals in B2B market where orders are taken through websites, phone calls and through emails. (A4) Apart from website, the firm did not have strong technological advancement (ERP, Blockchain) to link producers with consumers. (A5) Communication is made via WhatsApp, email, phone calls, social media, and websites.</p> <p>Jeevanksh Eco Products: (A1) The firm uses GPS based field report and soil monitoring and product handling. (A2): Forward prediction of yield and market price, hand holding for organic certification for product type and quality. (A3): Strong market linkage in the domestic and global markets which is well connected by the company database. (A4): The firm has strong technological adoption from farmers to retailers through the company database. (A5): Communication is made via WhatsApp, LinkedIn, email, phone calls, social media, and through websites.</p> <p>Pabhoi Greens: (A1) The firm uses comprehensive technological support spanning from sowing to storage, particularly for seed production and storage. (A2): The firm uses moderate technology in storage (freezing) and packaging for product type and quality. (A3): Marketing of organic seed is done mainly through a website. (A4): The firm focuses on developing organic farming activities in the northeastern region, and the building of the network structure is still ongoing. (A5): Communication is made via WhatsApp, LinkedIn, email, phone call, Instagram, Facebook, and through websites.</p>			

B. Infrastructure	Nahar	Jeev anksh	Pabhoi
B1. Adequate infrastructure available for supply of organic inputs, sowing of crops, and for post-harvest management.	4	4	3
B2. Adequate infrastructure for the production and processing of organic products.	2	3	3
B3. Adequate infrastructure for packaging, storage (cold storage), and transportation.	3	3	2
B4. Adequate infrastructure to market the organic products with proper labelling as per organic standards.	3	5	4
B5. Adequate infrastructure for support services (Credit services, advisory services)	4	5	3
<p>Nahar Organics: (B1) The company supplies regular organic inputs and provides timely training to its member farmers. (B2): At present the company don't have any processing plant to produce value added organic products. Semi-processed organic products are sold to distant traders outside the state. However, establishment of production plant is in the company's pipe line. (B3): No cold storage. The company has adequate packaging house and transportation facilities as per organic standard. (B4): The company deals in B2B market, semi processed goods are marketed with proper labelling as per organic standard. (B5): The company has adequate credit services from various commercial banks and advisory services from NABARD, NEDFi.</p> <p>Jeevanksh Eco Products: (B1): Through contract farming company supplies regular organic inputs and provides training and assures market linkage for the product. (B2): The company produces varieties of organic products; however, it needs more infrastructure for production and processing. (B3): No cold storage. The company has adequate packaging house and transportation facilities as per organic standard. (B4): Market the product through B2B mode in various urban cities of India and export with well-established chain. (B5): credit services from Farm Infinity, commercial banks; support services form NeatEhub (AAU); ZTM & BPD under Indian Agriculture Research Institutes.</p> <p>Pabhoi Greens: (B1): The firm uses basic infrastructure for seed production and storage as per organic standards. (B2): Apart from organic seed, the company produces varieties of organic products; however, it needs more infrastructure for production and processing. (B3): No cold storage. The company has adequate packaging facilities for only organic seeds and transportation facilities as per organic standards. (B4): Market the product through B2C mode in various in Assam and across the country. (B5): Support services from Assam Agricultural University and Tezpur University.</p>			
C. Customer Focus	Nahar	Jeev anksh	Pabhoi
C1. Maintain speediness in the supply chain	5	5	4
C2. Maintain quality aspects as per the organic standards.	4	5	5
C3. Ensure the timely availability of organic products to consumers.	3	4	5
C4. Maintain comprehensibility in the labelling of organic products.	3	4	5
C5. Maintain a customer feedback system	4	4	4
<p>Nahar Organics: (C1): The company completes supply of semi-processed organic products within 30 days of receiving the order. (C2): Farmers produce organic products as per the organic standard and handling / transportation of semi-processed goods by the company by maintain the quality. (C3): The company deals specifically to B2B market and</p>			

not to direct consumer. (C4): Organic products are transported to various traders with proper labelling with the brand name “Nahar Organics”. (C5) The company has a customer feedback system and manage it through its websites.

Jeevanksh Eco Products: (C1): The company has excellent market linkage to supply as and when required. (C2): Certified by SGC and Onecert agency. (C3): Organic products are supplied through B2B market and retailers ensure timely availability of the organic products. (C4): Organic products are transported to various retailer with proper labelling and packaging as per organic standard. (C5): The company has a customer feedback system and manage it through its websites.

Pabhoi Greens: (C1) The firm has good market linkage to supply organic seed as and when required. (C2): Certified by IMO control private ltd. (C3): Organic seeds are supplied through B2C market and customers ensure timely availability of the organic products. (C4): Organic seeds are transported to various customer with proper labelling and packaging as per organic standard. (C5): The firm has a customer feedback system and manage it through its websites.

D. Information	Nahar	Jeevanksh	Pabhoi
D1. The firm ensures the free flow of information across chain actors	4	4	4
D2. Transparency is maintained at all levels of chain actors (Like using ERP, Using Block Chain technology)	2	4	4
D3. The firm ensures the traceability and tracking of organic products.	3	5	5
D4. The firm share information related to eco-labels and certification to consumers	2	5	5
D5. The firms maintain timely information flow with regulatory bodies of organic agriculture.	4	5	5

Nahar Organics: (D1), The company shares regular information to all the members farmers and traders. (D2): The company ensure transparency; however, they did not use any modern technology like ERP, Block chain to validate the transparency process. (D3): The company supply semi-processed organic products with proper packaging. Traceability and tracking of the organic products to consumer is maintained by traders. (D4): The company is not involved in production of value-added organic products and are not dealing with the direct consumers. (D5): The company maintain and submit timely documents to certifying agency and other regulatory body.

Jeevanksh Eco Products: (D1), The company shares regular information to all the members farmers and traders. (D2): The company ensures transparency; however, implementation of ERP and block chain is in companies action plan in years to come. (D3): The company has different supply chain particularly for organic products to ensure traceability and tracking of organic products. (D4): Yes, certification process and authenticity of the product is shared to consumers. (D5): The company maintain and submit timely documents to certifying agency and other regulatory body.

Pabhoi Greens: (D1), The firm shares regular information to all the members farmers and traders through social media and in person. (D2): The firm ensures transparency; however, implementation of ERP and blockchain is in the firm’s action plan in years to come. (D3): The firm maintain organic chain and ensure traceability and tracking of organic products. (D4): Yes, the certification process and authenticity of the product are shared with consumers. (D5): The firm maintains and submits timely documents to the certifying agency and other regulatory bodies.

E. Diversified Products	Nahar	Jeevanksh	Pabhoi
E1. The firm produces a variety of value-added organic products.	4	4	4
E2. The firm engages in organic input business.	1	4	4
E3. The firm provides training and consultation services to various interested groups.	4	5	4
E4. The firm is involved in B2B business.	5	5	4
E5. The firm is involved in the export activity.	2	5	3
<p>Nahar Organics: (E1): The company deals with a variety of organic products like spices, herbs, and essential oils. (E2): The company does not deal with any organic input business like bio-fertilizers, bio-pesticides. (E3): The company provides training to its listed farmers regularly. (E4): The company has a strong presence in B2B market which is mostly from Maharashtra, Gujrat, and Rajasthan. (E5): The firms are not involved in export business directly.</p> <p>Jeevanksh Eco Products: (E1): Deals with 300+ certified organic products like grains, spices, vegetables, and fruits. (E2): Deals with vermicompost, bio-fertilizer, and bio-pesticides. (E3): Provides 360-degree consultation services with assured market linkage. (E4): The company has strong market linkage with 50+ retail stores within the country and outside the country. (E5): Export its product to South-east Asia, Middle East, North America and Europe.</p> <p>Pabhoi Greens:(E1): Deals with variety of organic seeds, grains, and vegetables. (E2): Deals with vermicompost, bio-fertilizer, and bio-pesticides. (E3): Provides training and extension services to farmers, students related to organic farming. (E4): The firm has market linkage with retailers to sell the organic seeds. (E5): The firm delivered the products through courier and postal services for domestic orders and has little involvement in export market.</p>			
F. Awareness and Knowledge	Nahar	Jeevanksh	Pabhoi
F1. The farmers aware and knowledgeable about organic farming standards.	5	5	2
F2. The firm is aware and have knowledge about organic certification system for fresh and value-added organic products.	4	5	4
F3. Knowledge about export mechanism.	3	5	2
F4. Knowledge about upgrading technology like (ERP, Block chain technology).	2	5	2
F5. Awareness and knowledge about global organic food market.	4	4	3
<p>Nahar Organics: (F1): The company strictly monitor the organic cultivation by farmers as per NPOP standards in production and handling of organic products. (F2) The company employees have full knowledge about organic certification process which they comply it in production and handling. The company is not involved in value added finished products and knowledge of certification process is limited up to handling and transportation stage. (F3): The company is not directly involved with export activities but they are focusing on export after setting up their own production plant. (F4): The company has very limited knowledge on the implications of modern technology such as blockchain, ERP, in the organic food value chain. (F5): The company has updated and good knowledge about the growing organic food market.</p> <p>Jeevanksh Eco Products: (F1): The company and certifying agency strictly monitor the organic cultivation by farmers as per NPOP standards in production and handling of</p>			

organic products. **(F2):** The company is led by a team (all are alumnus of IIM Indore) that knows the organic certification system thoroughly. **(F3):** Yes, deals with export consignment to various countries. **(F4),** The team has full knowledge about ERP and blockchain which they are planning to implement soon. **(F5):** Has full awareness of the global market.

Pabhoi Greens: (F1): The firm doesn't have any member farmers and the same is operated by employees and the owner. **(F2):** The owner and the employees know the organic certification system thoroughly. **(F3):** The firm mostly engages in the domestic market. **(F4),** The employees and the owner have limited knowledge about ERP and blockchain. **(F5):** Has full awareness of the global market.

G. Capacity building	Nahar	Jeev anksh	Pabhoi
G1 Firm has collaboration/ interaction with research institutes/ academic institutes.	4	4	4
G2 The firm regularly conducts training and extension activities to share knowledge among farmers.	5	4	4
G3 The firm collaboration with NGOs/ Government / Private organization.	4	4	4
G4 The firm has structured vertical and hierarchical coordination.	3	4	3
G5 Good governance structure and related policies are in place at all level.	4	5	3

Nahar Organics: (G1) The firm has good collaboration with NABARD and NEDFi. **(G2):** Regular training and workshop is conducted for farmers in collaboration with various research institutes, **(G3):** The company has collaborated with distant traders to supply organic semi-processed goods from Northeast India. **(G4):** The company has a hierarchical structure among employees but is not properly linked up with farmers. **(G5):** The employee maintained and followed rules, regulations and policies set by the company.

Jeevanksh Eco Products. (G1): Incubation with NeatEhub (Assam Agricultural University, Jorhat); ZTM & BPD under Indian Agriculture Research Institutes. **(G2):** Regular training and workshop is conducted for farmers in collaboration with various research institutes. **(G3):** Collaboration with Farm Infinity and various retail stores. **(G4):** The company has a hierarchical structure with its team member and famers. **(G5):** The team members and the farmers maintained and followed rules, regulations and policies set by the company.

Pabhoi Greens: (G1): Associated with Assam Agricultural University, Jorhat and Tezpur University. **(G2):** Regular training and workshop is conducted for various farmers and students. **(G3)** collaborating with Sativa Rheinau (a Swiss organic and biodynamic seed producer) since 2015. **(G4):** The company has a hierarchical structure among employees but is not properly **(G5):** The firm don't have any strict rules and are trying to implement the same.

H. Competitive advantage	Nahar	Jeev anksh	Pabhoi
H1 Firm has the quality advantage for its products.	4	5	4
H2 Firm has a cost advantage in cultivation, production, and distribution.	3	3	3
H3 The firm has strong customer support and service	4	4	4
H4 The firm has a strong distribution network.	4	3	3

H5 The firm has vast new market opportunities.	4	5	4
<p>Nahar Organics: (H1): The company supplies quality of certified semi-processed organic products to distant traders in stipulated time. (H2): The associated farmers use basic primary technology and packaging, handling is done manually. (H3): The company has strong feedback system and managed it through its website. (H4): Well-connected distribution network with traders from Maharashtra, Gujrat and Rajasthan. (H5): The employees are constantly engaging in exploring new market to supply semi-processed organic products within the country and looking forward for export.</p> <p>Jeevanksh Eco Products Ltd: (H1): Certified organic products are produced from farm land near Indo- Bhutan Border which is at foot hills of Himalaya. (H2): The farmer used modern technology like GPS to track the soil health, however the firm is yet to get the cost advantage. (H3): The company has a strong feedback system and manages it through its website. (H4): Strong distribution network with 50+ retail distributors in domestic and global markets. (H5): The global organic market is expanding and the firm is ready to explore the opportunities.</p> <p>Pabhoi Greens: (H1): Certified organic seeds are produced and marketed across the country. (H2): The firm use basic primary technology and packaging, handling is done manually. (H3): The company has a strong feedback system and manages it through its website. (H4): Distribution is based on orders received and dispatch is done through courier and postal. (H5): The firm has a strong opportunity to capture the global organic seed market.</p>			
I. Pricing	Nahar	Jeev anksh	Pabhoi
I1. The firm have an assured market linkage to have premium prices for organic products.	4	5	3
I2. The firm has a high product margin due to value-added organic products.	3	5	2
I3. The price of the product is determined by demand-supply forces in the market.	4	5	2
I4. The firm share profits/ surplus to its linked farmers.	2	4	3
I5. The firm able to fetch premium prices for organic produce.	3	5	2
<p>Nahar Organics: (I1): The company have assured market linkage with its customer and farmers are provided with premium price for their organic crops as compared to conventional crops. (I2): It deals with semi-processed organic goods in B2B market, hence have average product margin. (I3): The price is determined by demand supply forces, the demand of organic product is increasing which provides regular flow of income to company. (I4): The company buys the organic products from farmers at predetermined price and does not share profits to its member farmers till now. (I5): It deals with semi-processed organic goods in B2B market, hence unable to fetch good premium price.</p> <p>Jeevanksh Eco Products Ltd: (I1): The company have assured market linkage with its customer and farmers are provided with premium price for their organic produces. (I2): Yes, value added organic products give good margin to the company. (I3), price is determined by demand supply forces. (I4): The firm shares profit to its member farmers. (I5): With quality of organic certified goods, the company is fetching premium price.</p> <p>Pabhoi Greens: (I1): The firm have good market linkage for organic seed. However, the organic vegetables grown in the firms are sold in local market. (I2): The organic products</p>			

are sold in local market at normal price. The margin from organic seeds is also not very high as compared to the conventional seeds. **(I3)** The firm is yet to develop the assured market linkage for organic seeds and working on demand creation. **(I4)**: The firm does not have any member farmers. However, profits are shared with its employees. **(I5)**: The firm is unable to fetching the premium price for its organic produces.

J. Logistic drivers	Nahar	Jeevanksh	Pabhoi
J1. The farmers have adequate transportation facilities as per organic standards.	4	4	3
J2. The firm have proper input procurement and handling division.	4	2	3
J3. The firm have an inventory management system for finished products.	2	4	4
J4. The firm have adequate selling points to distribute the products to end consumers.	2	3	3
J5. The firm has an order processing system to take orders from consumers.	4	5	4
<p>Nahar Organics: (J1): The company has good transportation facilities to handle organic products. (J2): The company has a division to procure inputs and to handle the products. (J3): At present the company do not have any inventory management system and installation of the same is in pipeline. (J4): The company at present deals with the semi-processed goods in B2B market and does not have any selling centre to distribute its product. (J5) The company takes orders through its website and emails.</p> <p>Jeevanksh Eco Products: (J1): The company has good transportation facilities to handle organic products. (J2): The company is yet to have its input procurement and handling division. (J3): The firm has an inventory management system to handle the output. (J4): The company deals with the B2B market and the selling point of the retailers is indirectly the distribution point of the firm. (J5): The company has a strong order processing system to take orders from domestic and international markets.</p> <p>Pabhoi Greens: (J1): The firm mainly uses courier services and postal services to disburse the organic seeds. Good transportation system is also available. (J2): The firm is yet to have its input procurement and handling division. (J3): The firm has an inventory management system to handle the output. (J4): The firm has a selling point in home town (Biswanath Chariali) and mainly distribute the organic seeds through postal or courier services. (J5): The company has a strong order processing system through websites to take orders from domestic markets.</p>			

Source: Compiled by the author.

8.4 Value Chain of Government Sponsored Organic Firms

This section at first provides a details information of five government sponsored organic firms, Hmar Agro Organic Producer Company Ltd (HAOPCL); Pagladiya Agro Organic Producer Company Ltd (PAOPCL); Puthimari Organic Farmer Producer Company Limited (POFPCL); Dol Agro Organic Producer Company Limited (DAOPCL) and lastly Padumpathar Agro Organic Producer Company Limited (PaAOPCL). After the brief description, individual rating score for each firm with justification/reason for the score of each parameters is provided.

8.4.1. Hmar Agro Organic Producer Company Ltd (HAOPCL).

Hmar Agro Organic Producer Company Limited (a producer company limited by shares) was incorporated under the MOVCD- NER scheme on 04/09/2017. This FPC is established as part of the central Government scheme MOVCD-NER to be involved in the production, harvesting, procurement, manufacturing, and marketing of organic pineapple. In addition, the company provided training, consultation, and technical services to its member farmers. At present, the company has five directors and a cluster key management personnel. The operation field is divided into ten clusters, each overseen by a Cluster In charge and a Land Resource Person. In each cluster, there are 100 organic farmers. There are three office workers in the FPC.

The company supplies various inputs, which include pineapple suckers, bio-fertilizer and bio-pesticides, to its member farmers. The FPC, in association with APEDA, and Dept. of Horticulture, Government of Assam exported 15 metric tonnes of organic pineapple to Dubai on July 08, 2019. The member farmers sell the product mostly to wholesalers on a contract basis and sell it in local markets and streets sides. Only the special orders received from distant traders and importer are execute through FPC. The value chain of the FPC is in the initial stage as the production plant to produce varieties of value-added products from organic pineapple is yet to start. The farmers sell the organic pineapple in fresh form and mix the same with conventional pineapple. Most of the time, farmers sell organic pineapple through traditional chains and actors, except special orders made through FPC, where organic traceability is maintained to the consumer. The FPC communicates with distant buyers through websites, WhatsApp, email, and phone calls to sell fresh organic pineapples. The terms of trade and payment with minimum quantity for orders for distant traders are specified on the FPC website.

8.4.2 Pagladiya Agro Organic Producer Company Ltd (PAOPCL)

Pagladiya Agro Organic Producer Company Ltd is a private limited Indian Non- Government Company incorporated on July 26, 2017, in Nalbari district of Assam under the MOVCD project of Government of India. The FPC is a part of the MOVCD Nalbari cluster to strengthen the value chain of organic pumpkins. As part of the scheme, organic pumpkin is cultivated in more than 500 hectares of land involving more than 500 certified organic farmers. The FPC is established to produce value-added products from organic pumpkins and to create a better market linkage to sell these organic products. At present, the FPC is operated by five directors, namely Mr. Bipul Haloi (director), Mr. Jayanta Kumar Sarma (director), Mr. Lukesh Taid (additional director), Mr. Madan Basumatary (additional director) and Mr. Sabin Basumatary. The FPC is in the infant stage, and various functions like production activities, packaging house, assured market linkage, are yet to be established and start. Farmers sell their output mostly in fresh form through the conventional chain by involving commission agents, wholesalers, and retailers. Only special orders from distant traders (Orissa and Tripura) are executed through the FPC. The FPC lacks infrastructure facilities, governance structure, market linkage, technology and logistics compared to the private organic firms promoted by individual visionary agripreneur.

8.4.3. Puthimari Organic Farmer Producer Company Limited (POFPCL).

Puthimari Organic Farmer Producer Company Limited was incorporated on 30 August, 2017 as an unlisted private company (promoted by MOVCD- NER) for the Sonitpur cluster of Assam. The FPC was established to offer market linkage and create the infrastructure required to produce value-added products from the organic crops produced by its member farmers. MOVCD considers the Puthimari region of Sonitpur district to produce certified non-basmati paddy, pumpkins, potatoes, and tomatoes on 526 hectares of land and involves approximately 500 farmers. At present, the FPC needs to be improved in various aspects, and farmers sell their organic produce in the local markets through the conventional chain where organic produce are mixed with conventional products. Farmers could not fetch premium prices for their organic produce as the FPC could not provide the market linkage or develop infrastructure for value addition of the organic produce. Apart from providing basic training and financial assistance (under MOVCD) to its member farmers, the FPC has yet to start its production and processing activity. At present, the FPC is operated by five directors, namely, Mr. Dilip Kumar Nath, Mr. Gobin Chandra Boro, Mr. Pankaj Chetry, Mr. Madan Basumatary and Mr. Sabin Basumatary.

8.4.4. Dol Agro Organic Producer Company Limited (DAOPCL)

Dol Agro Organic Producer Company Limited is incorporated on 3rd August, 2017 as unlisted private company (promoted by MOVCD-NER) for Dhemaji cluster of Assam. Dhemaji district is well-known for its red rice farming, and the region has been chosen by MOVCD-NER to develop the entire red rice value chain. FPC was founded to provide the assured market linkage and to produce the value-adding products for around 500 farmers farming red paddy for more than 500 hectares of land. Currently, the FPC has a marketing linkage for organic red paddy and rice. The FPC buys the organic red paddy from farmers, packaged it, and sold it to traders in Haryana without any significant value addition. Based on special order, FPC also process the red paddy and sells the organic red rice as per organic standard. Processed organic red rice is supplied to Hyderabad (based on special order and regular market linkage still needs to be established), sold it to local consumer in Dhemaji and its periphery districts. The FPC is currently operated by three directors, namely Mr. Lukesh Taid, Mr. Madan Basumatary, and Mr. Sabin Basumatary. The value chain of the FPC is in the initial stage and is yet to work on various aspects like technology, infrastructure, production activities and market linkage to strengthen the value chain and to explore the global organic market.

8.4.5. Padumpathar Agro Organic Producer Company Limited (PaAOPCL)

Padumpathar Agro Organic Producer Company Limited is incorporated on 24th August, 2017 as an unlisted private company (promoted by MOVCD) for Golaghat cluster of Assam. The FPC purchase organic turmeric (Megha Turmeric), ginger and black pepper from farmers and produces value added products with proper packaging and labelling as per organic norms. Currently, the FPC sells turmeric in three forms: raw turmeric, dried turmeric, and turmeric powder. Organic raw turmeric is mainly sold to traders in Guwahati, dry turmeric finger to Rajasthan, and packaged turmeric powder to Guwahati (Through the Dept. of Horticulture). The FPC has the infrastructure like a processing plant, grinding machine, boiler, and other necessary equipment for the production of organic turmeric powder. The value chain of the organic turmeric from farmers to consumers is organic and the FPC is in the market development stage for the organic produces. The demand for organic turmeric fingers and powders is very high in the domestic market, and FPC is all set to increase the production of organic turmeric powder. At present, the company is managed by five directors and 15 employees. The director names are Anjal Limbu, Kumar Limboo, Gidian Pradhan, Sangita Barman, and Sanjit Kumar Biswakarma.

8.5 Rating Score of Various Parameters for Value Chain of Government Sponsored Organic Firms.

The individual rating scores with a justification of each score for ten parameters of the value chain (technology, infrastructure, customer focus, information, diversified products, awareness and knowledge, capacity building, competitive advantage, pricing, and logistic drivers) for five government-sponsored organic firms from five districts, namely Hmar Agro Organic Producer Company Ltd. (HAOPCL), Pagladiya Agro Organic Producer Company Ltd. (PAOPCL), Puthimari Organic Farmer Producer Company Limited (POFCL), Dol Agro Organic Producer Company Limited (DAOPCL) and Padumpathar Agro Organic Producer Company Limited (PaAOPCL) are shown in below table. Various sub-parameters are ranked with a 1 to 5 scale (1= lowest and 5 =highest), and the reason for the same is also highlighted for all five selected organic FPCs.

Table 116: Showing Rating Scores of Various Parameters for the Value Chain of Five Government Sponsored Organic Firms.

Parameters	HAOPCL (Silchar)	PAOPCL (Nalbari)	POFPCL (Sonitpur)	DAOPCL (Dhemaji)	PaAOPCL (Golaghat)
A. Technology					
A1. Technology adoption in the production & and processing of value-added organic products.	2	2	1	3	4
A2. Technology adoption to upgrade the product type and quality aspect of the organic products.	2	2	1	4	4
A3. Technology adoption in the marketing of organic products.	4	2	2	2	3
A4. Technology adoption to build a strong and efficient network structure to link producers and consumers	2	2	1	2	3
A5. Technology adoption to communicate with chain actors.	4	2	2	2	3
<p>HAOPCL: (A1) The FPC sells fresh organic pineapple without any value addition. Farmers use basic primary machinery and technology in production time. (A2) The firm uses primary technology (Sprayer, driller) in product upgradation and to maintain the quality aspect of the product. (A3) The FPC takes orders from distant and local buyers through websites, phone calls and by emails. (A4) Apart from website, the firm did not have strong technological advancement (ERP, Block chain) to link producers with consumers. (A5) Communication is made via WhatsApp, email, phone call, social media and through websites.</p> <p>PAOPCL: (A1). Farmers use basic primary machinery and technology during production time. FPC is not doing any value addition activities of organic pumpkin. (A2) The firm use basic primary technology (Sprayer, driller) in product upgradation and to maintain quality aspect of the product. Technology adoption for value added products is yet to be done (A3)</p>					

The FPC takes orders from distant and local buyers through, phone calls, emails and WhatsApp. No website is developed by the FPC yet. (A4) The FPC did not have strong technological advancement (ERP, Block chain) to link producers with consumers. (A5) Communication is made only via WhatsApp, email, phone call and no proper website is developed yet.

POFPCL: (A1). Farmers use basic primary machinery (tractor, sprayer) and technology in production time. No value addition is done at FPC level and farmers sell the non-basmati paddy to other actor in conventional way (A2) Technology adoption for product development and to maintain the quality aspects is very low. (A3) No involvement of FPC is found in marketing the organic produce of farmers. (A4) No technology adoption to link producers with consumers. (A5) Communication is made via WhatsApp and phone calls to communicate with farmers.

DAOPCL: (A1) The FPC started production of value-added items from organic non-basmati paddy. Farmers use basic primary machinery and technology in production time. (A2) The FPC uses technology (milling, packaging as per organic standards) in product upgradation and to maintain the quality aspect of the product. (A3) The FPC takes orders from distant and local buyers through phone calls, WhatsApp, and by emails. No website has been developed yet. (A4) The FPC did not have strong technological advancement (ERP, Blockchain) to link producers with consumers. (A5) Communication is made via WhatsApp, email, and phone calls.

PaAOPCL: (A1) The FPC uses technology such as boilers, dryers, grinders, and packaging houses. (A2) Packaging and technology in production are as per organic standards. (A3) The FPC takes orders from distant and local buyers through phone calls, social media (Facebook and LinkedIn), and emails. The Website is not developed yet. (A4) The firm did not have strong technological advancement (ERP, Blockchain) to link producers with consumers. (A5) Communication is made via WhatsApp, email, phone calls, and social media (Facebook and LinkedIn).

B. Infrastructure	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
B1. Adequate infrastructure available for supply of organic inputs, sowing of crops, and for post-harvest management.	4	3	2	4	5
B2. Adequate infrastructure for the production and processing of organic products.	1	3	1	4	5
B3. Adequate infrastructure for packaging, storage (/cold storage), and transportation.	2	2	1	4	4
B4. Adequate infrastructure to market the organic products with proper labelling as per organic standards.	3	2	1	4	5
B5. Adequate infrastructure for support services (Credit services, advisory services)	4	4	2	4	4
HAOPCL: (B1): The FPC supplies inputs and provides training to farmers for organic pineapple production and for post-harvest management. (B2): The FPC did not have any processing plant (establishment process for production plant is in pipeline) to produce value added products from organic pineapple. (B3): The FPC does not have any packaging house and cold storage facilities (establishment process of packaging house and cold storage					

facilities in pipeline). **(B4)**: The FPC sells the organic fresh pineapple to distant traders with proper labelling and as per organic standards. **(B5)**: The FPC and member farmer got support service from Government to construct vermicompost plant, inputs for production and training facilities. The FPC members also took part various training programmes organised by Dept. of Horticulture, KVKs, NGOs and participate in various trade fairs to show and present their product to build better market linkage.

PAOPCL: (B1): The FPC supplies inputs (seeds, vermicompost, bio pesticides and bio fertilizer) and provides training to farmers for organic pumpkin production. **(B2)**: Products are mostly sold in fresh forms. The FPC did not have any processing plant (establishment process for production plant is in pipeline) to produce value added products from organic pumpkin. **(B3)**: The FPC does not have any packaging house and cold storage facilities. **(B4)**: The FPC sells the organic fresh pumpkin to distant traders with proper labelling and as per organic standards. No value addition is done at FPC level. **(B5)**: The FPC and member farmer got support service from Government to construct vermicompost plant, inputs for production and training facilities. The FPC members also took part various training programmes organised by Dept. of Horticulture, KVKs, and participate in various trade fairs to show and present their product to build better market linkage.

POFCL: (B1): The FPC supplies inputs and provides training to farmers but the same is not regular. **(B2)**: The FPC did not have any processing plant (rice milling) and other value addition facilities. **(B3)**: The FPC does not have any packaging house and transportation facilities. **(B4)**: No involvement by FPC for value addition and labelling of organic non-basmati rice. **(B5)**: The FPC and member farmer got support service from Government to construct vermicompost plant, inputs for production and training facilities. Involvement of FPC to develop the market linkage is very low.

DAOPCL: (B1): The FPC supplies inputs and provides training to farmers for organic pineapple production and for post-harvest management. **(B2)**: The FPC process paddy, and sells organic red rice and value-added products from organic red rice to distant traders. **(B3)**: The FPC have any packaging house and transportation facilities. **(B4)**: The FPC sells the organic red rice to distant traders with proper labelling and as per organic standards. **(B5)**: The FPC and member farmer got support service from Government to construct vermicompost plant, inputs for production and training facilities. The FPC members also took part various training programmes organised by Dept. of Horticulture, KVKs, NGOs and participate in various trade fairs to show and present their product to build better market linkage.

PaAOPCL: (B1): The FPC supplies inputs and provides training to farmers for organic production and for post-harvest management for organic turmeric. **(B2)**: The FPC processing plant (boiler), packaging and storage house and has adequate transportation facility. **(B3)**: The FPC have packaging house. **(B4)**: The FPC sells the organic turmeric in three forms, which are as fresh organic turmeric, dry organic turmeric fingerling and organic turmeric powder with proper labelling as per organic standard. **(B5)**: The FPC and member farmer got support service from Government to construct vermicompost plant, inputs for production and training facilities. The FPC members also took part various training programmes organised by Dept. of Horticulture, KVKs, Assam Agricultural University to participate in various trade fairs to show and present their product to build better market linkage.

C. Customer Focus	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
C1. Maintain speediness in the supply chain	3	3	1	4	5
C2. Maintain quality aspects as per the organic standards.	4	3	1	4	5
C3. Ensure the timely availability	3	3	1	3	4

of organic products to consumers.					
C4. Maintain comprehensibility in the labelling of organic products.	2	2	1	4	5
C5. Maintain a customer feedback system	4	2	1	3	4
<p>HAOPCL: (C1): The supply is irregular and depends on special orders from traders. (C2): The FPC supplies fresh organic pineapple as per NPOP standards. (C3): The FPC at present does not sell any value-added organic products from pineapple, however, they ensure the timely availability of fresh pineapple to customers when orders are placed by them. (C4): Labelling is not up to the mark of organic standards. Organic pineapple is labelled as “Hmar Pineapple” and farmers sell it directly in the street side and local market. (C5) The FPC maintain a customer feedback system through its websites.</p> <p>PAOPCL: (C1): The supply is irregular and depends on special orders from traders. (C2): The FPC supplies fresh organic pumpkins without any value addition. (C3): The FPC at present does not sell any value-added organic products from pineapple, however, they ensure the timely availability of fresh organic pumpkin to customers when orders are placed by them. (C4): Labelling is not up to the mark of organic standards. (C5) The FPC does not have a website. Customer relation is maintained by mobile.</p> <p>POFCL: (C1): The supply chain is very weak and FPC is not involved in any activity for value addition of organic non-basmati paddy. (C2): The FPC did not maintain the quality aspect as per organic standards (C3): The FPC at present does not sell organic non-basmati paddy produced by its’s member farmers. (C4): No labelling is done. (C5) No customer feedback is maintained.</p> <p>DAOPCL: (C1): The FPC maintain speediness in the supply chain by delivering the ordered item on the stipulated time. (C2): The FPC supplies organic red paddy and organic red rice as per NPOP standards. (C3): The FPC ensure timely availability of organic red rice to distant customers. (C4): Proper labelling is done for value added products from organic red paddy. (C5) The FPC does not have a website and customer relation is maintained via phone and WhatsApp.</p> <p>PaAOPCL: (C1): The FPC maintain speediness in supply. At present FPC sales raw organic turmeric, dry organic turmeric fingerling and organic turmeric powder. (C2): Quality is maintained as per as per NPOP standards. (C3): The FPC ensure timely availability of products to customers when orders are placed by them. (C4): Labelling is done as per organic standards with the logo of FSSAI and India Organic. (C5) The FPC does not have a website yet. It maintains customer feedback through social media.</p>					
D. Information	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
D1. The firm ensures the free flow of information across chain actors	4	4	2	4	4
D2. Transparency is maintained at all levels of chain actors (Like using ERP, Using Block Chain technology)	2	2	1	2	2
D3. The firm ensures the traceability & tracking of organic products.	3	3	1	4	5
D4. The firm share information related to eco-labels& certification to consumers	3	2	1	3	4
D5. The firms maintain timely information flow with regulatory	4	4	1	4	4

bodies of organic agriculture.					
<p>HAOPCL: (D1): The FPC share regular information to various actors including the member farmers. (D2): The FPC is not using any system to ensure transparency across the chain actors. (D3): Deals with fresh organic pineapple. Only products routed through FPC are traceable. (D4): No value-added products are produced from FPC hence labelling of the products is not up to the organic standard. (D5): FPC maintain timely information flow with the regulatory body.</p> <p>PAOPCL: (D1): The FPC share regular information to various actors including the member farmers. (D2): The FPC is not using any system to ensure transparency across the chain actors. (D3): Deals with fresh organic pumpkin. Only products routed through FPC are traceable. (D4): No value-added products are produced from FPC hence labelling of the products is not up to the organic standard. (D5): FPC maintain timely information flow with the regulatory body.</p> <p>POFCL: (D1): The FPC share basic information only to farmers excluding other chain actors. (D2): The FPC does not maintain any transparency across the actor. (D3): Organic non-basmati paddy is mixed with conventional products. No tracking and traceability are done. (D4): No value-added products and no certification label is maintained. (D5): The FPC does not share timely information to regulatory bodies.</p> <p>DAOPCL: (D1): The FPC share regular information to various actors including the member farmers. (D2): The FPC is not using any system to ensure transparency across the chain actors. (D3): Ensure the traceability of the value added organic red paddy. (D4): Adequate eco-labels are maintained for value added products from organic red paddy. (D5): FPC maintain timely information flow with the regulatory body.</p> <p>PaAOPCL: (D1): The FPC share regular information to various actors including the member farmers. (D2): The FPC is not using any system to ensure transparency across the chain actors. (D3): Ensure the traceability of the value-added products from organic turmeric. (D4): Adequate eco-labels are maintained for value added products from organic turmeric. (D5): FPC maintain timely information flow with the regulatory body.</p>					
E. Diversified Products	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
E1. The firm produces a variety of value-added organic products.	2	2	1	4	
E2. The firm engages in organic input business.	2	2	1	3	4
E3. The firm provides training and consultation services to various interested groups.	3	3	2	4	4
E4. The firm is involved in B2B business.	4	4	1	4	4
E5. The firm is involved in the export activity.	4	3	1	2	2
<p>HAOPCL: (E1): FPC sells organic fresh pineapple only without any value-added products. (E2): Sells pineapple sucker and vermicompost. (E3): The FPC provides training and consultation services to only to its member farmers. (E4) Yes, organic fresh pineapple is sold to various traders across the state and country. (E5): The FPC in collaboration with Dept. of Horticulture and APEDA exported organic pineapple to Dubai.</p> <p>PAOPCL:(E1): FPC sells organic fresh pumpkin only without any value-added products. (E2): The member farmers of the FPC produces vermicompost. FPC supplies inputs like bio pesticides, bio fertilizer to member farmers. (E3): The FPC provides training and consultation services only to its member farmers. (E4) Yes, organic fresh pumpkin is sold to various traders across the state and country. (E5): The FPC sells organic pumpkins to</p>					

various traders within the country. The traders with their own packaging and labelling export organic pumpkin.

POFCL: (E1): FPC does not produce any value-added products from organic non-basmati paddy. (E2): No involvement by FPC in input business. (E3): The FPC provides training and consultation services only to its member farmers which is also not frequent. (E4): No involvement in B2B market. (E5): No involvement in export activities.

DAOPCL:(E1): FPC deals with organic red paddy and also sells organic red rice and other value-added products from organic red rice. (E2): Supplies input to only its member farmers. (E3): The FPC provides training and consultation services to its member farmers and other interested groups. (E4) Yes, organic red paddy is sold to traders Haryana and organic red rice is sold to traders in Hyderabad. (E5): Currently, the FPC is not involved in any export business directly.

PaAOPCL: (E1): FPC deals with organic fresh turmeric, organic dry turmeric fingerling, organic powder, and organic ginger. (E2): Sell organic turmeric as a sucker and supply input to its member farmers. (E3): The FPC provides training and consultation services to its member farmers and other interested groups. (E4) Yes, organic fresh turmeric, semi-processed turmeric and turmeric powder are sold to various traders. (E5): Currently, the FPC is not involved in any export business directly.

F. Awareness and Knowledge	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
F1. The farmers are aware and knowledgeable about organic farming standards.	4	4	2	4	4
F2. The firm is aware and knows the organic certification system for fresh and value-added organic products.	4	4	2	4	5
F3. Knowledge about export mechanism.	5	3	1	3	3
F4. Knowledge about upgrading technology like (ERP, blockchain technology).	1	1	1	1	1
F5. Awareness and knowledge about the global organic food market.	4	4	2	4	4

HAOPCL: (F1): Farmers have adequate knowledge about organic cultivation and organic standards. (F2): The FPC knows the organic certification process and standards. (F3) Yes, exported organic pineapple to Dubai. (F4): The FPC does not have proper knowledge about the upgrading strategies. (F5): The FPC has awareness and knowledge about the global organic food market.

PAOPCL: (F1): Farmers have adequate knowledge about organic cultivation and organic standards. (F2): The FPC knows the organic certification process and standards. (F3): The FPC is not involved in any export activity directly and has limited knowledge of export mechanisms. (F4): The FPC does not have proper knowledge about the upgrading strategies. (F5): The FPC has awareness and knowledge about the global organic food market.

POFCL: (F1): Farmers have limited knowledge about organic cultivation and organic standards. (F2): The understanding of FPC for the organic certification process and standards is very limited. (F3): No knowledge regarding export mechanism. (F4): The FPC does not have proper knowledge about the upgrading strategies. (F5): The FPC has limited awareness and knowledge about the global organic food market.

DAOPCL: (F1) Farmers have adequate knowledge about organic cultivation and organic

standards. **(F2):** The FPC knows the organic certification process and standards. **(F3, Average):** The FPC is not involved in any export activity directly and has limited knowledge of export mechanisms. **(F4):** The FPC does not have proper knowledge about the upgrading strategies. **(F5):** The FPC has awareness and knowledge about the global organic food market.

PaAOPCL : **(F1)** Farmers have adequate knowledge about organic cultivation and organic standards. **(F2):** The FPC produces a variety of organic value-added products from red rice and has full knowledge of the organic certification process and standards. **(F3):** The FPC is not involved in any export activity directly and has limited knowledge of export mechanisms. **(F4):** The FPC does not have proper knowledge about the upgrading strategies. **(F5):** The FPC has awareness and knowledge about the global organic food market.

G. Capacity building	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
G1. Firm has collaboration/ interaction with research institutes/ academic institutes.	4	4	2	4	4
G2. The firm regularly conducts training and extension activities to share knowledge among farmers.	5	4	2	4	4
G3. The firm collaborates with NGOs/ Government / Private organizations.	5	4	2	4	4
G4. The firm has structured vertical and hierarchical coordination.	2	2	1	2	2
G5. Good governance structure and related policies are in place at all levels.	3	2	1	3	3

HAOPCL: (G1, Strong): The FPC has interaction with research institutes like Krishi Vikas Kendra, Cachar (KVK, Assam Agricultural University), APEDA, and Dept. of Horticulture. **(G2, Very Strong):** The FPC conducts regular training programs and carries out extension activities for farmers in association with the Dept. of Horticulture. **(G3, Very Strong):** The FPC has collaborated with NGOs that provide training on organic cultivation to farmers and has collaborated with various private players to sell fresh organic pineapple. **(G4, Weak):** The FPC is run by directors, CEOs, and seven employees and has weak vertical and hierarchical coordination. **(G5):** The firm is yet to develop a good governance structure among all the chain actors.

PAOPCL: (G1): The FPC has interaction with research institutes like Krishi Vikas Kendra, Nalbari (KVK, Assam Agricultural University), and Dept. of Horticulture. **(G2):** The FPC conducts regular training programs and carries out extension activities for farmers in association with the Dept. of Horticulture and KVK Nalbari. **(G3):** The FPC has collaboration with NGOs which provides training on organic farming to farmers and has collaboration with various private players to sell fresh organic pumpkin. **(G4):** The FPC is run by directors, CEOs, and five employees and has weak vertical and hierarchical coordination. **(G5):** The firm has a weak governance structure and working on developing a good governance structure among all the chain actors.

POFCL: (G1): The FPC has very limited interaction with research institutes like KVK and the Dept. of Horticulture. **(G2):** The training program conducted by the FPC is not regular and frequent. **(G3):** The FPC has no collaboration with NGOs and private players. **(G4):** The vertical and hierarchical coordination of the firm is very weak. **(G5):** The firm has a very weak governance structure.

DAOPCL: (G1): The FPC has regular interaction with Krishi Vikas Kendra, Dhemaji

(KVK, Assam Agricultural University), and Dept. of Horticulture. **(G2):** The FPC carries out extension activities for farmers in association with the Dept. of Horticulture and conducts regular training programs. **(G3):** The FPC collaborates with NGOs that provide training on organic cultivation to farmers and collaborates with various private players to sell organic red paddy and organic red rice. **(G4):** The FPC is run by directors, CEOs, and eight employees and has weak vertical and hierarchical coordination. **(G5):** The firm is yet to develop a good governance structure among all the chain actors.

PaAOPCL: (G1): The FPC has interaction with Krishi Vikas Kendra, Golaghat (KVK, Assam Agricultural University), Assam Agricultural University, and Dept. of Horticulture. **(G2):** The FPC conducts regular training programs and carries out extension activities for farmers in association with the Dept. of Horticulture. **(G3):** The FPC has collaborated with NGOs that provide training on organic cultivation to farmers and also collaborated with various private players to sell fresh organic turmeric, organic dry turmeric fingerling, and turmeric powder. **(G4):** The FPC is run by directors, a CEO, and ten employees and has weak vertical and hierarchical coordination. **(G5):** The firm is yet to develop a good governance structure among all the chain actors.

H. Competitive advantage	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
H1. Firm has a quality advantage for its products.	4	4	1	4	5
H2. Firm has a cost advantage in cultivation, production, and distribution.	3	3	2	3	3
H3. The firm has strong customer support and service	4	2	1	2	2
H4. The firm has a strong distribution network.	5	4	1	4	4
H5. The firm has vast new market opportunities.	5	5	2	5	5

HAOPCL: (H1): The “Hmar Organic Pineapple” is well known for its quality and thus the FPC has a quality advantage as compared to pineapple produced from other places. **(H2):** The FPC uses basic technology and grading and handling is done manually. **(H3):** The FPC manages the customer support service through the website. **(H4):** The FPC has a strong distribution channel in domestic and global markets. **(H5).** The global demand for organic food market is increasing and organic pineapple has a strong market opportunity.

PAOPCL: (H1): The “Hmar Organic Pineapple” is well known for its quality and thus the FPC has a quality advantage as compared to pineapple produced from other places. **(H2):** The FPC uses basic technology and grading and handling is done manually. **(H3):** The FPC manages the customer support service through the website. **(H4):** The FPC has a strong distribution channel in the domestic and global markets. **(H5).** The global demand for organic food market is increasing and organic pineapple has a strong market opportunity.

POFCL: (H1): The “Hmar Organic Pineapple” is well known for its quality and thus the FPC has a quality advantage as compared to pineapple produced from other places. **(H2):** The FPC uses basic technology and grading and handling is done manually. **(H3):** The FPC manages the customer support service through the website. **(H4):** The FPC has a strong distribution channel in the domestic and global markets. **(H5).** The global demand for organic food market is increasing and organic pineapple has a strong market opportunity.

DAOPCL: (H1): The “Hmar Organic Pineapple” is well known for its quality and thus the FPC has a quality advantage as compared to pineapple produced from other places. **(H2):** The FPC uses basic technology and grading and handling is done manually. **(H3):** The FPC manages the customer support service through the website. **(H4):** The FPC has a strong

distribution channel in the domestic and global markets. **(H5):** The global demand for the organic food market is increasing and organic pineapple has a strong market opportunity.

PaAOPCL: (H1): The “Hmar Organic Pineapple” is well known for its quality and thus the FPC has a quality advantage as compared to pineapple produced from other places. **(H2):** The FPC uses basic technology and grading and handling is done manually. **(H3):** The FPC manages the customer support service through the website. **(H4):** The FPC has a strong distribution channel in the domestic and global markets. **(H5):** The global demand for organic food market is increasing and organic pineapple has a strong market opportunity.

I. Pricing	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
I1. The firm has an assured market linkage to have premium prices for organic products.	3	3	1	4	4
I2. The firm has a high product margin due to value-added organic products.	3	3	1	4	4
I3. The price of the product is determined by demand-supply forces in the market.	4	4	1	5	5
I4. The firm shares profits/ surplus to its linked farmers.	4	4	1	4	4
I5. The firm able to fetch premium prices for organic produce.	3	3	1	4	4

HAOPCL: (I1): The FPC is yet to establish an assured market for organic pineapple and the export transaction is also not regular. **(I2):** The FPC only sells fresh organic pineapple without any value addition and has an average product margin. **(I3):** The price is mostly determined by demand and supply forces. **(I4):** When the FPC earns revenue, there is a provision to share profit among farmers. **(I5):** The FPC deals with only fresh organic pineapple and the FPC gets an average price from the same.

PAOPCL: (I1): The FPC is yet to establish an assured market for organic pumpkin and the trade with distant traders across the country is not regular. **(I2):** The FPC only sells fresh organic pumpkins without any value addition and has an average product margin. **(I3):** The price is mostly determined by demand and supply forces. **(I4):** When the FPC earns revenue, there is a provision to share profit among farmers. **(I5):** The FPC deals with only fresh organic pumpkin and the FPC got an average price from the same.

POFCL: (I1): The FPC has no market linkage. **(I2):** Farmers sell organic non-basmati paddy through conventional chains and not through FPC. **(I3):** The FPC is not involved with any transactions to sell organic non-basmati paddy/rice. **(I4):** No profit has been shared with farmers till now. **(I5):** The FPC is not able to fetch premium prices for organic products.

DAOPCL: (I1): The FPC has good market linkage to sell organic red paddy and rice. **(I2):** The firm has a high product margin for organic red rice. **(I3):** The price is mostly determined by demand and supply forces. **(I4):** FPC shares a part of its revenue to its members. **(I5):** Yes, the FPC fetches premium prices from its value-added products.

PaAOPCL: (I1): The FPC has good market linkage to sell organic fresh turmeric, organic sun dry fingerlings, and organic turmeric powder. **(I2):** The firm has a high product margin for organic turmeric and organic turmeric powder **(I3):** The price is mostly determined by demand and supply forces. **(I4):** FPC shares a part of its revenue to its members. **(I5):** Yes, the FPC fetches premium prices from its value-added products.

J. Logistic drivers	HAOPCL	PAOPCL	POFCL	DAOPCL	PaAOPCL
J1. The farmers have adequate transportation facilities as per	3	3	2	4	4

organic standards.					
J2. The firm have proper input procurement and handling division.	2	2	2	2	2
J3. The firm have an inventory management system for finished products.	2	2	2	4	4
J4. The firm have adequate selling points to distribute the products to end consumer.	4	2	1	3	3
J5. The firm have an order processing system to take orders from consumers.	4	3	1	3	3
<p>HAOPCL: (J1): The FPC has sufficient transportation facilities to transport fresh organic pineapple to market. (J2): The FPC does not have any input procurement and handling division. (J3): The firm manages inventory in traditional ways only and does not have any inventory management system. (J4), The FPC has selling and distribution points with its partnered actor (Lulu Groups, Dubai). (J5): The FPC has its website and uses email, and WhatsApp to take orders from consumers.</p> <p>PAOPCL: (J1): The FPC has sufficient transportation facilities to transport fresh organic pumpkins to the market. (J2): The FPC does not have any input procurement and handling division. (J3): The firm manages inventory in traditional ways only and does not have any inventory management system. (J4), The FPC has no such selling point except in the local area. (J5): The FPC has no website and uses emails and WhatsApp to take orders from consumers.</p> <p>POFCL: (J1): The transportation facilities of the FPC are very weak and farmers use hired vehicles to transport their products. (J2): The FPC does not have any input procurement and handling division. (J3): The firm does not manage any inventory and does not have any inventory management system. (J4), The FPC has no selling and distribution points. (J5): No feedback system is maintained by the FPC.</p> <p>DAOPCL: (J1): The FPC has sufficient transportation facilities to transport organic red paddy/ rice to market. (J2): The FPC does not have any input procurement and handling division. (J3): The FPC maintains a manual inventory management system for its finished products. (J4), The FPC has selling and distribution points in Dhemaji and with the Dept. of Horticulture in Guwahati, Assam. (J5): The FPC has no website and uses emails and WhatsApp to take orders from consumers.</p> <p>PaAOPCL:(J1): The FPC has sufficient transportation facilities to transport fresh organic turmeric. Organic dry turmeric fingerling and turmeric powder. (J2): The FPC does not have any input procurement and handling division. (J3): The FPC maintains a manual inventory management system for its finished products. (J4), The FPC has selling and distribution points in Merapani, Golaghat, and with the Dept. of Horticulture in Guwahati, Assam. (J5): The FPC has no website and uses emails and WhatsApp to take orders from consumers.</p>					

Source: Compiled by the author.

8.6 Comparative Analysis of Various Parameters of Value Chain of Non-Government and Government Sponsored Organic Firms.

Here in this section, the mean score of various aspects related to ten parameters (technology, infrastructure, customer focus, information, diversified products, awareness and knowledge, capacity buildings, competitive advantage, pricing, and logistics drivers) of non-govt. sponsored and govt. sponsored organic firms are computed and compared. Moreover, the mean score for each organic firm is computed and lastly, rank is assigned to eight organic firms based on the overall mean score of ten parameters to measure the value chain. The details of the mean score of various parameters of the value chain for eight organic firms, non-govt. sponsored and govt. sponsored organic firms mean score and overall mean score of eight organic firms is shown in the below table.

Table 117: Showing comparative mean score of non-govt. sponsored and govt. sponsored organic firms.

Sl. No.	Parameters/ Organic Firms	Nahar	Jeev	Pabhoi	Mean Non-Govt.	HAO-PCL	PAO-PCL	POF-PCL	DAO-PCL	PaA-OPCL	Mean Govt.
		Non-Govt. Sponsored Organic Firms				Govt. Sponsored Organic Firms					
1.	Technology	3.20	4.80	3.60	3.86	2.80	2.00	1.40	2.60	3.40	2.44
2.	Infrastructure	3.20	4.00	3.00	3.40	2.80	2.80	1.40	4.00	4.60	3.12
3.	Customer Focus	3.80	4.40	4.60	4.26	3.20	2.60	1.00	3.60	4.60	3.00
4.	Information	3.00	4.60	4.60	4.06	3.20	3.00	1.20	3.40	3.80	2.92
5.	Diversified Products	3.20	4.60	3.80	3.86	3.00	2.80	1.20	3.40	3.60	2.80
6.	Awareness and Knowledge	3.60	4.80	2.60	3.66	3.60	3.20	1.60	3.20	3.40	3.00
7.	Capacity Building	4.00	4.20	3.60	3.93	3.80	3.20	1.60	3.40	3.40	3.08
8.	Competitive Advantage	3.80	4.00	3.60	3.80	4.20	3.60	1.40	3.60	3.80	3.32
9.	Pricing	3.20	4.80	2.40	3.46	3.60	3.40	1.00	4.20	4.20	3.28
10.	Logistics Drivers	3.20	3.60	3.40	3.40	3.00	2.40	1.60	3.20	3.20	2.68
11	Total (1+2....+10)	34.20	43.80	35.20	37.70	33.20	29.00	13.40	34.60	38.00	29.6
12	Total Mean Score (11/10)	3.42 (5th)	4.38 (1st)	3.52 (3rd)	3.77	3.32 (6th)	2.90 (7th)	1.34 (8th)	3.46 (4th)	3.80 (2nd)	2.96

Source: Compiled by the author.

From the study, it was found that the overall mean score of non-govt. sponsored organic firms is 3.77, which is high as compared to govt. sponsored organic firms with a mean of

2.96. In the individual item-wise comparison of ten parameters, the mean score of all the parameters is highest with non-govt. sponsored organic firms (Nahar Organics, JeevAanksh Eco Products Ltd., and Pabhoi Greens). In the category of govt. sponsored organic firms, the mean score of Puthimari Agro Organic Producer Company Ltd (POFCL) is very low. The overall mean score is found to be 1.34 indicating a very weak value chain and the same also impacted the overall mean score of govt. sponsored organic firms. Although, in the overall comparison, the mean of govt/ sponsored organic firms is low as compared to non-govt. sponsored organic firms, however, in the inter-firm comparison, few of the govt. sponsored organic firms are doing well particularly Padumpathar Agro Organic Producer Company Ltd. (PaAOPCL) and Dol Agro Organic Producer Company Ltd.(DAOPCL). In inter-firm comparison, JeevAnksh Eco Products Ltd. ranked first with a mean score of 4.38 with a strong hold in all the parameters considered to measure the value chain. With a mean score of 3.80, Padumpathar Agro Organic Producer Company Ltd (PaAOPCL) is ranked 2nd and Pabhoi Greens is ranked 3rd with a mean score of 3.52.

The item-wise/parameters-wise inter-firm comparisons are shown below.

8.6.1 Technology usages: The overall mean score for technology usage of non-govt. sponsored organic firm is found to be high as compared to govt. sponsored organic firms which is 3.86. In the inter-firm comparison, it was found that Jeevanksh Eco Products Private Limited has a stronghold in technology usage and the mean score found to be 4.80, followed by Pabhoi Greens and Padumpathar Agro Organic Producer Company Ltd. (PaAOPCL) with a mean score of 3.60 and 3.40 respectively. Jeevanksh Eco Products uses GPS-based field reports, forward prediction of yield and market price, and has strong market linkage connected by website, and social media. Pabhoi greens mostly engage with the organic seed business and use technology during the production and storage of seeds as per organic standards. Seeds are delivered to customers across the country as per their order, and delivery is done through postal and courier services. Padumpathar Agro Organic Producer Company Ltd. (PaAOPCL) also has strong technology adaption in the upgradation of product type and quality and produce value-added organic products from organic turmeric as per organic standards. Among all the firm , the lowest mean score found with Puthimari Agro Organic Producer Company Ltd. (PAOPCL) indicates very weak in technology usage to upgrade the value chain. The technology adoption in PAOPCL in terms of production and processing, upgradation of product type and quality, marketing, building a strong network, and communicating with various chain actors is weak

8.6.2 Infrastructure: From the study, the highest mean score (4.60) is found with Padumpathar Agro Organic Producer Company Ltd. (PaAOPCL) related to the availability of infrastructure facilities to strengthen the value chain. It has a processing plant (boiler), packaging and storage house, adequate transportation facility, and is also involved in the inputs business. The FPC members also took part in various training programs organized by the Dept. of Horticulture, KVKs, and Assam Agricultural University to participate in various trade fairs to show and present their products to build better market linkage. The mean score of JeevAnkash Eco Products Ltd. and Dol Agro Organic Producer Company Ltd. (DAOPCL) is found to be 4.00. Infrastructure facilities available to Jeevanksh Eco Products are better than Nahar Organics (mean score:3.2) and Pabhoi Greens (mean score 3.00). Through contract farming, Jeevanksh Eco Products supplies regular organic inputs, provides training, and assures market linkage for the product. The firms have a well-established B2B and export market chain and have collaborated with various institutes like credit services from Farm Infinity, commercial banks, support services from NeatEhub (AAU), ZTM, and BPD under Indian Agriculture Research. Pabhoi Greens primarily deals with the production and storage of organic seeds and mostly deals in the B2C market. Although the firm is connected with various academic and research institutions, it needs more infrastructure for production and processing activities. Nahar Organics is not involved in any production and processing and supplies semi-processed organic products to various parties through the B2B market.

Dol Agro Organic Producer Company Ltd. (DAOPCL) deals with organic red rice and sells the same to distant traders with proper packaging and labeling as per organic standards. The mean scores of Hmar Agro Organic Producer Company Ltd. (HAOPCL) and Pagladiya gro Organic Producer Company Ltd. (PAOPCL) are 2.80 and 2.00 respectively. The study found that these FPCSs did not have any processing plant (establishment process for production plant is in the pipeline) to produce value-added organic products and do not have any packaging house and cold storage facilities (establishment process of packaging house and cold storage facilities in the pipeline) during the time of the survey. Compared to all other organic firms, the mean score of Puthimari Agro Organic Producer Company Ltd. (POFCL) is found to be the lowest which is only 1.4, indicating very weak availability of infrastructure facilities to deal with organic value-added products.

8.6.3 Customer Focus: In customer focus, the highest mean score (4.60) is found with two firms namely Pabhoi Greens and Padumpathar Agro Organic Producer Company Ltd. PaAOPCL sells raw organic turmeric, dry organic turmeric fingerling, and organic turmeric

powder as per NPOP standards and ensures timely availability of products to customers when orders are placed by them. The organic turmeric powder is marketed with proper labeling as per organic standards with the logo of FSSAI and India Organic. Pabhoi Greens has a strong market to supply organic seeds as and when required. The organic seeds are supplied through the B2C market and the firm ensures timely delivery of the same. The firm has a strong feedback system and manages it through its website. The mean score of Jeevanksh Eco Products is found to be 4.40, and it also has a strong market linkage and maintains speediness in the supply chain. The certified organic products are supplied to various retailers through the B2B market. Nahar Organics (mean score: 3.80) mostly supplies semi-processed organic products specifically to the B2B market with a lead time of 30 days from receiving the orders. Apart from PaAOPCL and DAOPCL, other FPCs deal with only fresh organic products without any value addition. The mean score of Puthimari Organic Producer Company Ltd (POPCL) in customer focus parameter is only 1.00 indicating a very weak as the FPC is not involved in any activity for value addition of organic non-basmati paddy and no customer feedback is maintained.

8.6.4 Information: The mean score of information flow of non-govt. sponsored organic firms are found to be high with a score of 4.06 as compared to govt. sponsored organic firms which is only 2.92. In inter-firm comparison, the highest mean score of 4.60 is found with Pabhoi Greens and Jeevanksh Eco Products Ltd. These firms maintain separate supply chains for organic products, to ensure traceability and tracking of organic products, share the certification process and authenticity of the product to consumers, and maintain timely information flow with certifying and other regulatory bodies. However, no firm uses modern technology like ERP and Blockchain to validate the transparency process. The mean score of PaAOPCL is found to be 3.80, indicates a strong information flow for traceability of the value-added products from organic. Adequate eco-labels are maintained for value added products from organic turmeric. Other firms like Nahar Organics (mean score: 3.00), DAOPCL (mean score: 3.40), HAOPCL (mean score: 3.20) and PAOPCL (mean score: 3.00) maintained relatively moderate flow of information as compared to Jeevanksh and PaAOPCL across the chain actors and shared regular information with concerned regulatory bodies. Among all the organic firms, the mean score of POFCL is found to be 1.20, and information flow at this firm is very weak in all aspects. The FPC shares basic information only to farmers, excluding other chain actors. Here, organic non-basmati paddy is mixed with

conventional products, and no tracking and traceability are done. The FPC does not share timely information with regulatory bodies.

8.6.5 Diversified Products: The mean score for non-govt. sponsored organic firms are high and found to be 3.86 as compared to govt. sponsored organic firms which is 2.80. In inter-firm comparison, Jeevanksh Eco Products Ltd. ranked first with a mean score of 4.60 followed by Pabhoi Greens with a mean score of 3.80. Both these firms are engaged in input business, providing training and consultation services to interested groups. Jeevanksh deals with 300+ certified organic products like grains, spices, vegetables, and fruits, and has market linkage with 50+ retail stores within and outside the country. Pabhoi Greens also deals with a variety of organic seeds, grains, and vegetables and has a strong market linkage with retailers to sell organic seeds. The mean score of PaAOPCL, DAOPCL, Nahar Organics, and HAOPCL is found to be 3.60, 3.40, 3.20, and 3.00 respectively. PaAOPCL has the upper hand in diversified product lists as compared to the other govt. sponsored organic firms. It deals with organic fresh turmeric, organic dry turmeric fingerling, organic powder, and organic ginger. The FPC also engages in organic turmeric sucker business. Only HAOPCL, in collaboration with the Dept. of Horticulture and APEDA, is involved in export activity and supplies organic fresh pineapple to Dubai among govt. sponsored organic firms. Nahar Organics has also a strong presence in the B2B market and supplies semi-processed organic products like spices, herbs, and essential oils but does not deal with any organic input business like bio-fertilizers or biopesticides. Similar to the previous results, the mean POFCL is found to be only 1.20 which indicates the FPC has a weak product portfolio compared to other FPCs, does not produce any value-added products, and has no involvement in the B2B market.

8.6.6 Awareness and Knowledge: The overall mean score of non-govt. sponsored organic firms are found to be higher as compared to govt. sponsored organic firms which are 3.66 and 3.00 respectively. In inter-firm comparison, Jeevanksh Eco Products Ltd ranked first with a mean score of 4.80 followed by Hmar Agro Organic Producer Company Ltd (HAOPCL) and Nahar Organics with a mean score of 3.60. Jeevanksh has very strong hands in various aspects of awareness and knowledge related to organic farming like organic certification, knowledge about the export mechanisms, knowledge about upgrading technology, and awareness of the global organic food market. Nahar Organics and HAOPCL also have a very strong awareness and knowledge of the production and handling of organic products. Both Pabhoi Greens and Nahar Organics have very limited knowledge of the implications of

modern technology, such as blockchain and ERP, in the organic food value chain. The mean score of PaAOPCL, DAOPCL, and PAOPCL is found to be 3.40, 3.20, and 3.20 respectively. Apart from POFCL, all four govt. sponsored FPC personnel have full awareness and knowledge of organic standards. However, the firms need to gain adequate knowledge of modern upgrading technology like ERP and BlockChain technology. The mean score of POFCL is found to be the lowest among all other organic firms which is 1.60 and the same firm is lacking in all aspects compared to other organic firms.

8.6.7 Capacity Building: The mean score non-govt. sponsored organic firms are found to be 3.93, which is high compared to govt. sponsored organic firms. Among non-government-sponsored organic firms, all three firms have a strong collaboration with various research institutes, engage in training and extension activities, and have collaborated with various Government and private organizations. Both the employees in Nahar Organics and Jeevanksh maintained and followed the rules, regulations, and policies set by the company. Jeevanksh Eco Products has incubation with NeatEhub (Assam Agricultural University, Jorhat); ZTM & BPD under Indian Agriculture Research Institutes. Pabhoi Greens has also had a strong association with Assam Agricultural University, Tezpur University, and Sativa Rheinau (a Swiss organic and biodynamic seed producer) since 2015. However, the firm has no strict rules and is trying to frame the same. In the inter-firm comparison, the highest mean score is found with JeevAnksh Eco Products Ltd which is 4.20 followed by Nahar Organics with a mean score of 4.00. The mean score of HAOPCL, Pabhoi Greens, DAOPCL, PaAOPCL, and PAOPCL is found to be 3.80, 3.60, 3.40, 3.40 and 3.20 respectively.

Among Government-sponsored organic firms, HAOPCL has comparatively strong training/extension activities and collaborates with various private and government organizations. A strong association with research institutes/ NGOs, training, and extension activities are found with PAOPCL, DAOPCL, and PaPAOCL. In contrast all four govt. sponsored FPCs, the mean score POFCL is found to be the lowest which is 1.60 and the same is lagging in various aspects of capacity building. A weak vertical structure and hierarchical coordination exist in all the govt. sponsored FPCs and a strong governance structure is needed to build a strong value chain.

8.6.8. Competitive Advantage: The mean score of non-govt. sponsored organic firms are found to be 3.80 which is higher as compared to the mean score of govt. sponsored organic firms. However, in inter-firm comparison, the highest mean score is found with

HAOPCL(govt. sponsored firm) which is around 4.20 followed by Jeevanksh Eco Products Ltd. with a mean score of 4.00. HAOPCL engages in export activity and has websites for order processing and customer feedback systems. Jeevanksh Eco Products has a very strong quality advantage and new market opportunities compared to the other two. The member farmers used modern technology like GPS to track the soil health. Other govt. sponsored organic firms like PAOPCL (mean score: 3.60), DAOPCL (mean score: 3.60), and PaAOPCL (mean score: 3.80) have well-connected distribution networks for fresh and value-added organic products. All the govt. sponsored FPCs except POFCL maintain quality as per organic standards and have a quality advantage. Among non-government-sponsored organic firms, Nahar Organics (mean score: 3.80) and Pabhoi Greens (mean score: 3.60) supply quality-certified semi-processed organic products and organic seeds to distant traders within a stipulated time. All the firms have strong customer feedback systems and manage the same with their websites and have market opportunities.

8.6.9 Pricing: The overall mean score is found to be high with non-govt. sponsored organic firms which is 3.46 and the mean score of govt. sponsored organic firms are found to be 3.28. In the interfirm comparison, the highest mean score is found with JeevAnksh Eco Products Ltd. which is 4.80 followed by PaAOPCL and DAOPCL with a mean score of 4.20 each. Jeevanksh Eco Products Ltd. has very strong parameters in all aspects of pricing like assured market linkage, high product margin, and demand-supply forces, and the firm can fetch premium prices from value-added organic products. Among government-sponsored organic firms, both DAOPCL and PaAOPCL, have strong market linkage, high product margin, demand-supply forces, shares surplus among its member farmers, and fetch premium prices from the value-added organic products. HAOPCL (mean score: 3.60) and PAOPCL (mean score: 3.40) sell organic products to distant traders and export transactions, but the same is not regular, and has yet to establish an assured market for organic pineapple and pumpkin. Nahar Organics (mean score: 3.20) has assured market linkage with its customers and farmers are provided with premium prices for their organic crops as compared to conventional crops. The company deals with only semi-processed organic goods in the B2B market, it has an average product margin. Pabhoi Greens (mean score: 2.40) have good market linkage for organic seed. However, the organic vegetables grown in the firms are sold in the local market at normal prices. Among all the firms, the lowest mean score is found with POFCL which is 1.00 and the firm has no market linkage, farmers sell the organic non-basmati paddy through conventional chains and not through FPC.

8.6.10 Logistics Drivers: In the logistics drivers, the overall mean score of non-govt. sponsored organic firms are found to be 3.40 which is high as compared to the overall mean score of govt. sponsored organic firms with a mean score of 2.68. In inter-firm comparison, the highest mean score is found with Jeevanksh Eco Products Ltd. with a mean score of 3.60 followed by Pabhoi Greens with a mean score of 3.40. Among non-government-sponsored organic firms, all have adequate transportation facilities to handle the organic products. All the firms use websites and emails to take orders. However, Jeevanksh has the upper hand as the firm has a strong presence in the international market. Except for Nahar Organics (mean score: 3.20), both Pabhoi Greens and Jeevanksh Eco Products have an inventory management system. In Government-sponsored organic firms, both DAOPCL (mean score: 3.20) and PaAOPCL (mean score: 3.20) have adequate transportation facilities and inventory management system. Only HAOPCL (mean score: 3.00) has selling and distribution points with its partnered actor (Lulu Groups, Dubai) and has its website for ordering tracking. No proper input procurement and handling division is found in the govt. sponsored FPCs. PAOPCL (mean score:2.40) has a weak logistics infrastructure as compared to DAOPCL, PaAOPCL, and HAOPCL and does not have any inventory management system. Among all the firms, the mean score of POFCL is found to be the lowest which is only 1.60. The firm is characterized by weak logistics facilities like inadequate transportation, no input procurement and handling division, no inventory management system, no selling and distribution system, and no customer feedback system.

8.7 Chapter Summary

This chapter discusses and compares the value chain of non-government-sponsored organic firms and government-sponsored organic firms based on ten parameters. The mean score of non-govt. sponsored organic firms for all ten parameters is found to be more as compared to govt. sponsored organic firms indicating a better value chain management system for non-govt. sponsored organic firms. The government-sponsored organic firms are mostly driven by a supply-side approach and non-govt. sponsored organic firms are driven by a demand-side approach. The study by de Janvry & Sadouet (2020), revealed that the supply-side approach has benefited from extensive research but met with limited success. However, demand-side approach firms are efficient but receive insufficient attention. Similar to this, the present study found that significant difference in the mean score of govt. and non-govt. sponsored organic firms. However, in the inter-firm comparison, few of govt. sponsored organic firms like PaAOPCL (mean score:3.80) and DAOPCL (mean score:3.46) are found with strong

value chains. In the inter-firm comparison, the overall mean score is found to be highest with JeevAnksh Eco Products Ltd (non-govt. sponsored) which is 4.38 followed by Padumpathar Agro Organic Producer Company Ltd. (PaAOPCL; govt. sponsored) with a mean score of 3.80. The Dol Agro Organic Producer Company Ltd. (DAOPCL; govt. sponsored) and Nahar Organic (non-govt. sponsored) ranked third and fourth among all the firms with a mean score of 3.46 and 3.42 respectively. In the parameters-wise comparison, out of ten parameters, JeevAnksh Eco Products Ltd has the highest mean score in seven parameters (technology, mean score: 4.80; information, mean score: 4.60; diversified products, mean score: 4.60; awareness and knowledge, mean score: 4.80; capacity building, mean score: 4.20; pricing, mean score: 4.80 and logistics drivers, mean score: 3.60) indicating a strong and efficient value chain as compared to other organic firms. However, few govt. sponsored organic firms particularly PaAOPCL and DAOPCL also have strong value chain structures ranked as second and fourth in the overall ranking among all the organic firms considered for the study. For infrastructure facilities, the mean score of PaAOPCL is found to be the highest which is 4.60. Similarly, for the customer focus parameter, the mean score is found to be the highest with Pabhoi Greens and PaAOPCL with a score of 4.60 each. In the competitive advantage parameter, the highest mean is found with HAOPCL which is 4.20. Among all the firms, the lowest overall mean score which is 1.34, is found with Puthimari Agro Organic Producer Company Ltd. (POFCL) indicates a very weak value chain structure in the FPC. The next chapters will discuss the major findings and conclusion of the study.