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SLUP

(STATE LEVEL UPGRADATION PLAN)

for

LONGLENG DISTRICT
IN THE STATE OF NAGALAND

Prepared by

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Executive Summary

In the Longleng district, major crops cultivated are Jhum Paddy, Maize, WTRC Paddy, Rajma, Soybean, Cabbage, Tapioca, Red chili, Ginger, Passion fruit, and Pineapple.

In 2019-20, the total area under the crops in the districts is 23.8 thousand ha with the production of 96.31 thousand tons. Major crops like pulses, cereals, and oil seeds are cultivated in the area of 18.8 thousand ha with a production of 43.8 thousand tons. Fruit crops and vegetable crops are cultivated in the area of 1.4 thousand ha and 2.5 thousand ha with the production of 13.36 thousand tons and 35.03 thousand tons respectively. Spice crops are cultivated in the area of 0.95 thousand ha with a production of 4.06 thousand tons. Jhum paddy, Maize, and Rajma/Kholar are the major crops in the district that are cultivated in the area of 5.8 thousand ha, 3.0 thousand ha, and 1.9 thousand ha with the production of 11.4 thousand tons, 6.0 thousand tons, and 2.4 thousand tons respectively.

In the Nagaland state, the ginger crop is cultivated in an area of 4.7 thousand ha with a production of 35.6 thousand tons. Longleng district contributes 5.8% of the total area under the ginger crop with the production of 9.5% of the total crop production in the state.

Ginger is the ODOP of the Longleng district and the Roselle-based products, Zanthoxylum based products, Maize based products, Tapioca-based products, Turmeric based products, pickle-based products (Meat pickle, Gooseberry pickle, Fish Pickle), bakery based products, and soybean-based products are the potential enterprises in the district. 22 enterprises are surveyed in the district involved in processing ginger paste, ginger powder, and ginger candy. It is estimated that 80 to 100 unregistered food processing enterprises are operating in the district and approximately 250 to 400 employees are working in the unregistered food processing enterprises.

Cluster- All the food processing enterprises are scattered in the district. Potential clusters for the ginger crop in the district are Orangkong village and Tamlu village.

Based on the primary observation of micro and small enterprises the major bottlenecks identified and recommendations/ insights are briefed below:

1. Lack of proper machinery for processing: None of the enterprises processing the ginger crop in the district are using advanced machinery and equipment like peeler, drier, slicer, ginger, and packaging machine. All the enterprises in the district are manually processing the ginger crop in the traditional method without the usage of the machinery and types of equipment. It is estimated that approximately, only 60 to 65 tons of the total 3390 tons crop produced in the district is processed into different value-added products like ginger powder, ginger candy, and ginger paste, and the rest of the crop is used for the household purpose and exported to other district and states through wholesalers and the retailers in the district. It is proposed to provide machinery like drier, peeler machiner, slicer machiner, Vegetable grinding machine, bottle filling machine, and packaging machinery at subsidized prices under the PMFME scheme for processing ginger value-added products.

2. Lack of common infrastructure facilities-It was observed that there are no common infrastructure facilities like cold storage, warehouses, and pack houses for the primary processing and secondary food processing in the district. Due to the lack of proper transportation facilities in the district, there is a considerable loss in crop quality post-harvesting. To minimize the post-harvest losses of agricultural commodities and to increase the shelf life of the processed commodities, it is suggested to establish common facilities like reefer vans, cold storage structures, and pack houses in the district headquarters.

3. Incubation center- From the primary survey, it is observed that approximately 100 new entrepreneurs (Individual and Group units) are interested in the food processing sector but unable to due to a lack of proper guidance and facilities in the food processing sector in the district. We are proposing one incubation center in the district with common processing facilities with 3-4 processing lines (Roselle bassed products, Zanthoxylum based products, Maize based products s, and Pickle based products)

4. Lack of marketing facilities: The ginger crop grown in the Nagaland state is known for their organic cultivation and the Longleng district is one of the largest producers of ginger crops in the Nagaland state. Farmers and traders are selling the primarily processed ginger crop and other value-added products like ginger powder, ginger paste, and ginger candy to the local traders and consumers without the brand. To overcome the problem and to support the processing enterprises in the district, it is proposed to create strong marketing linkages for the food processing enterprises in the district. A strong brand can be created for ginger value-added products which have huge demand in the domestic and international market. A fund of 1.3 cr. is proposed in the budget to create the brand and marketing linkages for the products in the district.

5. Lack of skilled labor: From the primary survey it is observed that none of the employees working in the food processing enterprises received training related to food processing. It is observed that there are no training facilities available for the food processing enterprises in the district. It is proposed to provide training to the employees working in the existing enterprises and to the potential entrepreneurs on handling the machinery and equipment, standardized process of processing the ginger powder, ginger paste, ginger oil, and ginger candy, packaging practices, and training on branding and marketing of the processed products. A fund of 12 lakhs is proposed under the PMFME scheme for training the employees in the food processing enterprises in the district.

6. Lack of testing facilities: From the primary survey it is observed that the majority of the enterprises in the district are selling the product without the FSSAI registration. There is no food testing lab in the district. It is proposed to establish a food testing lab in the proposed incubation center in the district.

Proposed fund allocation:

A total of INR 21.2 Cr. fund is proposed for the Longleng district for the up-gradation of 122 existing and new units in the district. Among the total fund, INR 11.8 Cr. fund is proposed to upgrade the 111 individual units and 1.18 Cr. fund is proposed to upgrade the 11 groups in the district. It is proposed to establish one incubation center and one common infrastructure in the district. INR 1.3 Cr. and 0.12 Cr. fund is proposed for the branding and marketing and training and mentorship for the existing and new potential processing enterprises in the district.

Proposed fund allocation		
Intervention	**Target**	**Amount (Cr.)**
Capital investment in plant and machinery (Individual units)	To upgrade and scale up in the production process for 111 Micro Units (The average fund required per unit is 10.67 lakhs)	11.84
Capital investment in plant and machinery (Group units)	To upgrade and scale up the production process for 11 Groups (The average fund required per unit is 10.67 lakhs)	1.18
Incubation center	One incubation center (IC) is proposed for the district. Cost per IC 2.75 Cr.	2.75
Common infrastructure	One common infrastructure facility (CIF) is proposed for the district. Cost for the CIF 4.0 Cr.	4
Branding and Marketing	Common Branding and Marketing for both Individual units and Groups	1.3
Training and Mentorship	Training and Mentoring for Entrepreneurship. Training on New Technology for a total of 122 individuals. (2 people to be trained from each enterprise/group)	0.12
Total		**21.19**

Proposed Government assistance under the SLUP:

A total of INR 25 Cr. fund is proposed for the Longleng district for the up-gradation of 122 existing and potential new units in the district. INR 9.43 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Proposed Government assistance under the SLUP					
Intervention	**Target No. of units**	**Project cost per unit (Cr.)**	**Total Cost (Cr.)**	**Subsidy per unit**	**Govt. assistance (Cr.)**
Capital Investment in Plant and Machinery (Individual units)	111	0.107	11.84	35%	4.15
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	11	0.107	1.17	35%	0.41
Common Infrastructure	1	4.00	4	35%	1.4

Proposed Government assistance under the SLUP					
Intervention	Target No. of units	Project cost per unit (Cr.)	Total Cost (Cr.)	Subsidy per unit	Govt. assistance (Cr.)
Incubation Cum Custom Hiring Centre	1	2.75	2.75	100%	2.75
Branding and Marketing (Total no. of Units/group)	122	0.011	1.30	50%	0.6
Training and Mentorship (No. of the individual)	122	0.0001	0.12	100%	0.12
Total			**21.2**		**9.43**

By 2025, with the support of the PMFME scheme, the processing percentage of respective commodities processing may go up. Nearly, 550 to 650 new employments will be generated, the income level of micro and small entrepreneurs may increase by 10% to 20% (approximately), better price realization can be captured for processed commodities, and local products may reach different parts of India as well as the World.

Project Methodology

This chapter explains the study area, sampling techniques, and different tools and techniques used for analyzing the collected data. The methodology adopted for the present study is presented in the following sections.

1) Study area
2) Sampling Technique adopted
3) Nature and sources of data
4) Analytical tools and techniques used

Study Area

The study on State Level Up-gradation Plan is conducted in the entire Longleng district of Nagaland state of India.

Sampling Technique and Sample Size adopted

Sampling Technique - Multistage random sampling technique was adopted.

Sample Size

22 ginger processing units are covered in the district involved in processing various commodities like ginger paste, ginger powder, and ginger candy.

Nature and sources of data

Both primary and secondary sources of data are collected for this study.

Primary Data

India is one of the leading processors of various types of ginger products. Ginger processing has undergone a lot of developments from traditional to modern processing. The survey was conducted in various Ginger processing units located in the Longleng district. In the process of the primary survey, we met different unit holders registered and unregistered, farmers, agriculture department officials, horticulture department officials, raw material suppliers, skilled labor, district industries center officials, farmer producer organizations, retailers, logistics officials concerned, etc., and gathered the necessary information like the availability of raw materials, year on year production, problems facing by them, production process and the technology adopted by unit holders, availability of skilled labor and their wages, range of products, value chain, the testing methodology adopted by them, packaging, marketing, exports and other information from them.

Secondary Data

The secondary data is collected from various sources like DICGS annual report, Nagaland Statistical Handbook, APEDA, Indiastat.com, Journals and articles, and other internet sources to know the area, production, export, import of Ginger products

Analytical tools and techniques used

Tabulation of Collected Data, Percentage Analysis, and Graphical Solutions was used to get a comprehensive picture and analysis of the Data. After the data has been collected, it has been interpreted and presented to arrive at conclusions.

I. Baseline Assessment studies:

I. Baseline Assessment studies:

Longleng District is a strip of mountainous territory having no plains and situated in northern Nagaland. Longleng District is located between longitude 94°E - 95°E and latitude 26°N - 27°N of the Equator. Longleng District has a total area of 885 sqm.m.

Longleng District has One State and 3 District boundaries. On the East, it shares boundaries with Tuensang and Mon district of Nagaland. In North, it has Nagaland's Inter-State boundary with Assam. On the west, it shares a boundary with the Mokokchung District of Nagaland. In the South, it shares a boundary with the Tuensang and Mokokchung districts of Nagaland. Its main river is Dikhu.
Phom, Ao, English, Nagamese, and Hindi are the languages spoken in the district. Longleng District has One State and 3(three) District boundaries. On the East, it shares a boundary with Tuensang and Mon district of Nagaland. In the North, it has Nagaland's Inter-State boundary with Assam. On the west, it shares a boundary with the Mokokchung District of Nagaland. In the South, it shares a boundary with the Tuensang district of Nagaland.

Demographics

As per the 2011 Census, the total population is 50,593. Longleng has a sex ratio of 903 females for every 1000 males, and a literacy rate of 73.1 %.

Table 1: Demographics of the district

Demographic Label	Value
Area	885 Sq. K.M.
Coordinates	26°31'North and 94°56'East
Elevation	1,066 m (3,497 ft)
Density	90/km2 (230/sq m)
Official Language	English and Sumi
Time Zone	UTC+05:30 (IST)
Average Rainfall	2000mm to 3000mm
Average Climate	Minimum temperature of 10 ° C in winter and a maximum of 28 ° C in summer

A. Agriculture Profiling of the Districts in the State

In 2019-20, the total area under the crops in the districts is 23.8 thousand ha with the production of 96.31 thousand tons. Major crops like pulses, cereals, and oil seeds are cultivated in the area of 18.8 thousand ha with a production of 43.8 thousand tons. Fruit crops and vegetable crops are cultivated in the area of 1.4 thousand ha and 2.5 thousand ha with the production of 13.36 thousand tons and 35.03 thousand tons respectively. Spice crops are cultivated in the area of 0.95 thousand ha with a production of 4.06 thousand tons.

Jhum paddy, Maize, WTRC Paddy, and Rajma are the major pulses and cereals crops cultivated in the area of 5.8 thousand ha, 3 thousand ha, 2.9 thousand ha, and 1.9 thousand ha with the production of 11.49 thousand tons, 6.0 thousand tons, 8.5 thousand tons, and 2.4 thousand tons respectively. Passion fruit and pineapple are the major fruit crops cultivated in the area of 0.41 thousand ha and 0.36 thousand ha with the production of 1.4 thousand tons and 0.8 thousand tons respectively. Cabbage and Tapioca are the major vegetable crop cultivated in the area of 0.57 thousand ha and 0.32 thousand ha with the production of 10.8 thousand tons and 7.6 thousand tons respectively. Red chili and Ginger are the major spice crop cultivated in the area of 0.3 thousand ha and 0.27 ha with the production of 0.18 thousand tons and 3.39 thousand tons respectively.

ODOP

i. Total production of the product in the district

Area and Production of Pulses, Cereals, and Oil seed crops in the district

In 2019-20, the total area under the major crops like pulses, cereals, and oilseeds in the district is 18,890 ha with a production of 43,850 tons. Major crops cultivated in the district are Jhum paddy, Maize, WTRC Paddy, and Kholar in the area of 5,800 ha, 3,051 ha, 2,970 ha, and 1,948 ha with the production of 11,499 tons, 6,049 tons, 8,578 tons and 2,485 tons respectively.

Table 2: Area and Production of the Pulses, Cereals, and Oil seed crops in the district

S. No	Crops	Area (Ha)	% Share	Production (MT)	% Share
1	Jhum Paddy	5,800	30.7%	11,499	26.2%
2	Maize	3,051	16.2%	6,049	13.8%
3	WTRC Paddy	2,970	15.7%	8,578	19.6%
4	Rajma/Kholar	1,948	10.3%	2,485	5.7%
5	Soybean	1,102	5.8%	1,366	3.1%
6	Rapeseed Mustard	1,001	5.3%	1,011	2.3%
7	Colocasia	402	2.1%	3,831	8.7%
8	Ricebean/Nagadal	382	2.0%	442	1.0%
9	Pea	381	2.0%	421	1.0%
10	Linseed	250	1.3%	200	0.5%

Table 2: Area and Production of the Pulses, Cereals, and Oil seed crops in the district					
S. No	Crops	Area (Ha)	% Share	Production (MT)	% Share
11	Perilla	193	1.0%	115	0.3%
12	Small Millet	190	1.0%	220	0.5%
13	Sesamum	162	0.9%	101	0.2%
14	Beans	150	0.8%	199	0.5%
15	Yam	144	0.8%	1053	2.4%
16	Sugarcane	130	0.7%	5663	12.9%
17	Tur/Arhar	110	0.6%	100	0.2%
18	Jobster	101	0.5%	111	0.3%
19	Mesta	81	0.4%	83	0.2%
20	Groundnut	52	0.3%	53	0.1%
21	Bajra	50	0.3%	50	0.1%
22	Gram	40	0.2%	30	0.1%
23	Black gram	40	0.2%	30	0.1%
24	sun-flower	40	0.2%	40	0.1%
25	Ragi	30	0.2%	30	0.1%
26	Barley	30	0.2%	30	0.1%
27	Oats	30	0.2%	30	0.1%
28	Horse gram	30	0.2%	30	0.1%
	Total	**18,890**	**100.0%**	**43,850**	**100.0%**
Source: Department of Agriculture and Horticulture Nagaland					

Area and Production of Vegetable crops in the district

In 209-20, the total area under the vegetable crops in the district is 2,575.10 ha with a production of 35,032 tons. Major crops cultivated in the district area are Cabbage, Tapioca, Leafy vegetables, and Green chili in the area of 572 ha, 326 ha, 314 ha, and 300 ha with the production of 10,865 tons, 7,650 tons, 2,695 tons, and 1,755 tons respectively.

Table 3: Area and Production of Vegetable crops					
S. No	Vegetables	Area (Ha)	% Share	Production (MT)	% Share
1	Cabbage	572.00	22.2%	10,865.00	31.0%
2	Tapioca	326.00	12.7%	7,650.00	21.8%
3	Leafy Vegetables (Amaranths, Kashmiri Sag, Spinach, Celery, etc.)	314.00	12.2%	2,695.00	7.7%
4	Green chilly	300.00	11.7%	1,755.00	5.0%
5	Arbi	220.00	8.5%	2,400.00	6.9%
6	Beans (All Including Lab-lab)	165.00	6.4%	1,570.00	4.5%
7	Potato	160.00	6.2%	2,870.00	8.2%
8	Tomato	126.00	4.9%	1,250.00	3.6%

Table 3: Area and Production of Vegetable crops					
S. No	Vegetables	Area (Ha)	% Share	Production (MT)	% Share
9	Sweet Potato	95.00	3.7%	770.00	2.2%
10	Peas (Green)	74.00	2.9%	625.00	1.8%
11	Cucumber	56.00	2.2%	420.00	1.2%
12	Carrot	42.00	1.6%	495.00	1.4%
13	Brinjal	28.00	1.1%	228.00	0.7%
14	Radish	28.00	1.1%	278.00	0.8%
15	Onion	22.00	0.9%	20.00	0.1%
16	Cauliflower	17.00	0.7%	118.00	0.3%
17	Kaddu/Pumpkin	15.00	0.6%	957.00	2.7%
18	Okra/Ladies Finger	13.00	0.5%	55.00	0.2%
19	Ash Gourd/Petha	2.00	0.1%	6.00	0.0%
20	Mushroom	0.10	0.0%	5.00	0.0%
	Total	**2,575.10**	**100.0%**	**35,032.00**	**100.0%**
Source: Department of Agriculture and Horticulture Nagaland					

Area and Production of Fruit crops in the district

In 2019-20, fruit crops are cultivated in the area of 1,448 ha with the production of 13,363 tons in the district. Major fruit crops cultivated in the district are Passion fruit, Pineapple, and Mandarin in the area of 415 ha, 362 ha, and 336 ha with the production of 1,450 tons, 800 tons, and 2,6890 tons respectively.

Table 4: Area and Production of fruit crops					
S. No	Fruits	Area (Ha)	% Share	Production (MT)	% Share
1	Passion Fruit	415.00	28.7%	1,450.00	10.9%
2	Pineapple	362.00	25.0%	800	6.0%
3	Kinnow/Mandarin Orange	336.00	23.2%	2,690.00	20.1%
4	Litchi	53.00	3.7%	268.00	2.0%
5	Mango	53.00	3.7%	305.00	2.3%
6	Guava	48.00	3.3%	400.00	3.0%
7	Banana	28.00	1.9%	6,200.00	46.4%
8	Papaya	28.00	1.9%	170.00	1.3%
9	Peach	27.00	1.9%	265.00	2.0%
10	Plum	24.00	1.7%	182.00	1.4%
11	Sweet Orange/ Mosambi	21.00	1.5%	155.00	1.2%
12	Pear	19.00	1.3%	232.00	1.7%
13	Pomegranate	13.00	0.9%	78.00	0.6%
14	Aonla/Gooseberry	10.00	0.7%	73.00	0.5%
15	Grape	6.00	0.4%	20.00	0.1%

Table 4: Area and Production of fruit crops					
S. No	Fruits	Area (Ha)	% Share	Production (MT)	% Share
16	Watermelon	5.00	0.3%	75.00	0.6%
	Total	**1,448.00**	**100.0%**	**13,363.00**	**100.0%**
Source: Department of Agriculture and Horticulture Nagaland					

Area and Production of Spice crops in the district

In 2019-20, spice crops are cultivated in the area of 952 ha with the production of 4,068 tons. The major crops cultivated in the district are Red Chili, Ginger, and Cardamom Large in the area of 300 ha, 275 ha, and 245 ha with the production of 180 tons, 3,390 tons, and 113 tons respectively.

Table 5: Area and Production of spice crops					
S. No	Spices	Area (Ha)	% Share	Production (MT)	% Share
1	Red Chilly	300.00	31.5%	180.00	4.4%
2	**Ginger**	**275.00**	**28.9%**	**3,390.00**	**83.3%**
3	Cardamom Large	245	25.7%	113.00	2.8%
4	Betel vine in Lakhs Number	72.00	7.6%	183.00	4.5%
5	Turmeric	22.00	2.3%	19.00	0.5%
6	Black Pepper	20.00	2.1%	6.00	0.1%
7	Garlic	18	1.9%	177.00	4.4%
	Total	**952.00**	**100.0%**	**4,068.00**	**100.0%**
Source: Department of Agriculture and Horticulture Nagaland					

ii. ODOP produce as a percentage of total agricultural production of the district

In 2019-20, the total area under the crops in the district is 23.8 thousand ha with the production of 96.3 thousand tons. The ginger crop is cultivated in the area of 275 ha with the production of 3.3 thousand tons which is 1.2% of the total area and 3.5% of the total crop production in the district respectively.

Table 6: ODOP production as a percentage of total agricultural production in the district					
S. No	Crops	Area (Ha)	% Share	Production (Tons)	% Share
1	Pulses, Cereals, and Oil seeds	18,890	79.2%	43,850	45.5%
2	Fruit crops	1,448	6.1%	13,363	13.9%
3	Vegetable crops	2575.1	10.8%	35,032	36.4%
4	**Ginger**	**275**	**1.2%**	**3,390**	**3.5%**
5	Other spice crops	677	2.8%	678	0.7%
	Total	23,865	100.0%	96,313	100.0%
Source: Department of Agriculture and Horticulture Nagaland					

iii. Perishable nature of the produce

Fresh ginger is perishable and the major causes of spoilage are improper handling, growth of spoilage microorganisms, the action of naturally occurring enzymes, chemical reactions, and structural changes during storage.

Table 7: Perishable nature of the produce

S. No	Product	Shelf Life
1	Fresh ginger	5 to 8 days
2	Dry ginger powder	2-3 years
3	Ginger paste	2-3 Months
4	Ginger oil	2-3 Months
5	Ginger candy	15- 30 days

iv. Production of ODOP agriculture produce in that district compared to other districts and states

In 2019-20, the total area under the Ginger crop in India is 1781.57 hundred ha with the production of 1868.5 thousand tons. Madhya Pradesh, Karnataka, and Assam are the major ginger crop growers in India which contribute 40% of the total crop area and production in the country. In the Madhya Pradesh and Karnataka states, the ginger crop was grown in 274 hundred ha and 223 hundred ha with the production of 438.39 thousand tons and 234.17 thousand tons respectively.

Table 8: State Area and Production of the Ginger crop in India

State	Area (100 Ha)	% Share	Production (1000 MT)	% Share
Madhya Pradesh	274.80	15.4%	438.39	23.5%
Karnataka	223.88	12.6%	234.17	12.5%
Assam	193.51	10.9%	183.16	9.8%
Orissa	165.75	9.3%	128.02	6.9%
Sikkim	156.43	8.8%	85.15	4.6%
West Bengal	125.10	7.0%	136.61	7.3%
Meghalaya	99.39	5.6%	66.16	3.5%
Mizoram	85.53	4.8%	61.00	3.3%
Uttaranchal	50.61	2.8%	49.68	2.7%
Gujarat	50.38	2.8%	113.22	6.1%
Arunachal Pradesh	40.01	2.2%	23.77	1.3%
Kerala	28.19	1.6%	55.41	3.0%
Telangana	24.09	1.4%	15.90	0.9%
Andhra Pradesh	2.94	0.2%	2.90	0.2%
Other states	260.96	14.6%	274.80	14.7%
Total	**1,781.57**	100.0%	**1,868.35**	100.0%

Source: Spice Board of India, 2019-20

v. Number of workers engaged in the ODOP cultivation

In 2019-20, the Ginger crop was cultivated in the area of 275 ha in the Longleng district. The average land holding in the Nagaland state is 0.6 ha and the average household size is 5.

The number of households involved in the cultivation of the Ginger crop in the district is 165 households and the number of workers involved in the cultivation of the Ginger crop in the district is 825. It is estimated that 2% to 3% of the total population in the Longleng district is involved in the cultivation of the Ginger crop.

District-Wise Area and Production of Ginger in Nagaland State

In 2019-20, the total area under the Ginger crop in the Nagaland state is 4749 ha with the production of 35630 tons. Kiphire is the top district in terms of ginger crop production in the state followed by the Mon district. Kiphire, Mon, and Peren district contributes 50% of the crop area in the state. Longleng contributes 5.8% of the total crop area with production of 9.5% of the total crop production in the state.

Table 9: District-wise Area and Production of the Ginger crop in the Nagaland State

District	Area (Ha)	% Share	Production (Tons)	% Share
Kiphire	1,498.00	31.5%	1,198.40	3.4%
Mon	452.00	9.5%	3,835.00	10.8%
Peren	428.00	9.0%	5,396.00	15.1%
Phek	390.00	8.2%	2,340.00	6.6%
Tuensang	370.00	7.8%	2,128.00	6.0%
Wokha	350.00	7.4%	3,122.00	8.8%
Zunheboto	350.00	7.4%	4,921.00	13.8%
Kohima	281.00	5.9%	4,800.00	13.5%
Longleng	**275.00**	**5.8%**	**3,390.00**	**9.5%**
Mokokchung	195.00	4.1%	1,900.00	5.3%
Dimapur	160.00	3.4%	2,600.00	7.3%
Nagaland	**4,749.00**	**100.0%**	**3,5630.40**	**100.0%**

Source: Department of Agriculture and Horticulture Nagaland

Non-ODOP:

i. What other major crops are being cultivated apart from the chosen ODOP product

Jhum Paddy, Maize, WTRC Paddy, Rajma/ Kholar, Soybean, Rapeseed mustard, Cabbage, Red chili, and Passion fruit are the major crops cultivated in the district apart from the ginger crop which is chosen as the ODOP in the district.

ii. Total Production of each of the Produces in the District:

Jhum paddy, Maize, WTRC Paddy, and Rajma/Kholar are cultivated in the area of 5,800 ha, 3,051 ha, 2,970 ha, and 1,948 ha with the production of 11,499 tons, 6,049 tons, 8,578 tons, and 2,485 tons respectively. The top five crops are cultivated in the area of 1,4871 ha with a production of 29,977 tons.

Table 10: Area and Production of Major crops in the district

S. No	Crop	Area (Ha)	Production (MT)
1	Jhum Paddy	5,800	11,499
2	Maize	3,051	6,049
3	WTRC Paddy	2,970	8,578
4	Rajma/ Kholar	1,948	2,485
5	Soybean	1,102	1,366
6	Rapeseed Mustard	1,001	1,011
7	Cabbage	572	10,865
8	Red chili	300	180
9	Passion fruit	415	1,450
10	Pineapple	362	800

Source: Department of Agriculture and Horticulture Nagaland

iii. Non-ODOP produce as a percentage of total agricultural production of the district:

Rajma, Soybean, Roselle, and Zanthoxylum-based products are chosen as the Non ODOP products of the district based on the production of the produce and the number of units processing the commodity in the district.

Area and Production of the Non ODOP crops in the district

In 2019-20, the total area under the crops in the district is 23.8 thousand ha with the production of 96.3 thousand tons. Soybean and rajma contribute 12.8% of the total agricultural area in the district with the production of 4% of the total crop production.

Table 11: Area and Production of the Non ODOP crops in the district

Crops	Area (Ha)	% Share	Production (Tons)	% Share
Soybean	**1,102**	**4.6%**	**1,366**	**1.4%**
Rajma/ Kolar	**1,948**	**8.2%**	**2,485**	**2.6%**
Other Pulses, Cereals, and Oil seeds	15,840	66.4%	39,999	41.5%
Fruit crops	1,448	6.1%	13,363	13.9%
Vegetable crops	2,575.1	10.8%	35,032	36.4%
Ginger	275	1.2%	3,390	3.5%
Other spice crops	677	2.8%	678	0.7%

Table 11: Area and Production of the Non ODOP crops in the district				
Crops	Area (Ha)	% Share	Production (Tons)	% Share
Total	**23,865**	**100.0%**	**96,313**	**100.0%**

iv. Perishable nature of the Non-ODOP produce:

The perishable nature of the Non-ODOP products is listed below

Table 12: Perishable nature of the Non-ODOP products		
S. No	**Products**	**Shelf life**
1	Roselle Leaves	4 -7 days
2	Roselle Tea	8-12 Months
3	Roselle Oil	8-12 Months
4	Zanthoxylum oil	12-18 months
5	Soybean oil	6 to 8 Months
6	Soybean meal	18 Months
7	Soybean Flour	6 Months
8	Soybean milk/ Curd	3 to 5 days
9	Rajma	2-3 years

v. Number of workers engaged in the cultivation of each of the Non ODOP products.

The total area under the non-ODOP cultivation in the district is 3,050 ha in 2019-20. It is estimated tat approximately 9150 employees are engaged in the cultivation of the non-ODOP crops in the district.

B. Assessment of the existing Policy and Regulatory frameworks for FPI and FPI Micro Enterprises in the State:

i. Assessment of Food Processing Policies in the State:

Pradhan Mantri Kisan SAMPADA Yojana by MOFPI

The government of India (GOI) has approved a new Central Sector Scheme – Pradhan Mantri Kisan SAMPADA Yojana (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with an allocation of Rs. 6,000 crores for the period 2016-20 coterminous with the 14th Finance Commission cycle. The scheme will be implemented by the Ministry of Food Processing Industries (MOFPI).

PM Kisan SAMPADA Yojana is a comprehensive package that will result in the creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. It will not only provide a big boost to the growth of the food processing sector in the country but also help in providing better returns to farmers and is a big step towards doubling farmers' income, creating huge employment opportunities, especially in the rural areas, reducing wastage of agricultural produce, increasing the processing level and enhancing the export of the processed foods.

The following schemes will be implemented under PM Kisan SAMPADA Yojana :

- Mega Food Parks
- Integrated Cold Chain and Value Addition Infrastructure
- Creation/ Expansion of Food Processing/ Preservation Capacities (Unit Scheme)
- Infrastructure for Agro-processing Clusters
- Creation of Backward and Forward Linkages
- Food Safety and Quality Assurance Infrastructure
- Human Resources and Institutions

Table 13: Nagaland State Government policy in FPI Policy and Incentives	Description
Name of Policy	State Industrial Policy-2000 (Revised-2004)
Nodal Agency	The Ministry of Food Processing Industries (MOFPI)
Single Window Clearance System	Not available

Table 13: Nagaland State Government policy in FPI	
Policy and Incentives	**Description**
Power/Electricity Subsidy	Subsidy on power will be provided at the rate of 30% and 25% for connected loads up to 1 MW and above 1 MW respectively for five years from the date of commercial production subject to a maximum ceiling limit of ` 2.00 lakh annually. This will be a reimbursement scheme for the actual consumption of power for the manufacturing process substantiated with requisite details.
	Drawal of Power Line: Cost of drawal of 33/11 KV line to eligible units located outside the notified areas shall be reimbursed for one time only subject to a ceiling of `2:00 lakh (now as per NEIIPP-2007, anywhere in the State)
Capital Subsidy	Not available
Interest Subsidy	Not available
VAT/CST/SGST/TAX Exemption/Reimbursement	**Stamp Duty Exemption** 50% Stamp Duty and Registration Fee for securing loans from Financial Institutions including Mortgage of fixed assets shall be exempted from the Stamp Duty Act for 5 (five) years
Employment Generation	**Manpower Subsidy** The government will reimburse up to 25% of the actual wage bill for local tribal employees employed by eligible units up to three years from the date of entertainment subject to a maximum ceiling of Rs.1.00 lakh annually. This grant would be for five years from the date of entertainment of such staff and would be given to those units where the investment in plant and machinery exceeds Rs.10.00 lakh and the number of employees engaged in the unit exceeds 20 (twenty) numbers and where the at least 50% of the employees are local tribal youth. Units availing subsidy under this scheme shall take all effective steps to ensure 75% employment of local youth over five years. This subsidy will be admissible on a reimbursement basis for only those employees who complete one year of regular employment in the unit.
Freight/Transport Subsidy	Not available

Table 13: Nagaland State Government policy in FPI	
Policy and Incentives	**Description**
Others	**Subsidy for Feasibility Study Cost** The subsidy will be available at the rate of 50% of the cost of Detailed Reports subject to a ceiling of Rs.1.00 lakh, which shall be eligible only for new units with investment in plant and machinery above Rs.25 lakh provided the report is prepared by a Government approved Industrial Consultants.
	Subsidy Incentives for 100% Export Oriented Units (EOU) An additional 5% capital investment subsidy is subject to a maximum ceiling of Rs.3.00 lakh.
	Subsidy for Quality Control measures The cost of laboratory equipment for quality control and ISI/BIS/ISO 9000 certification will be reimbursed subject to a maximum ceiling ofRs. 50,000/- in cases where it does not form part of the project cost for SSI and Rs.1.00 lakh in case of Large and Medium units.

ii. Assessment of ongoing and proposed Government programs of Nagaland Administration in the FPI and allied sectors:

Currently, there are no existing food processing policies in the state. Recently the Industry and Commerce department of Nagaland, Proposed One food processing policy named “Nagaland State food processing Industries policy (NSFPI).

iii. Assessment of existing Regulatory frameworks for FPI:

PM FME Scheme- PM Formalization of Micro Food Processing Enterprises Scheme-

Unorganized micro food processing units, need intensive hand-holding support for skill training, entrepreneurship, technology, credit, and marketing, across the value chain, necessitating active participation of the state government for better outreach. In the last decade, Central and State Governments have made intensive efforts to organize farmers in Food Processing Organizations (FPOs) and women’s Self-Help Groups (SHGs). SHGs have achieved considerable progress in thrift and their repayment record with a 97% NPA level is among the best. Governments have made efforts to enable SHGs to undertake various manufacturing and service sector activities including food processing. However, there are few Government schemes to support FPOs andSHGs to make investments and upscale their operations.

This scheme is a centrally sponsored scheme that is designed to address the challenges faced by micro-enterprises and to tap the potential of groups and cooperatives in supporting the up-gradation and formalization of these enterprises.

Table 14 PMFME Scheme- PM Formalization of Micro Food Processing Enterprises Scheme

Scheme Component	Particulars
Support to individuals and groups of micro-enterprises	Individual micro food processing units would be provided credit-linked capital subsidy @35% of the eligible project cost with a maximum ceiling of Rs.10.0 lakh per unit. The beneficiary contribution should be a minimum of 10% of the project cost with the balance being a loan from the bank.
Farmer Producer Organizations (FPOs)/Producer Cooperatives	i) Grant @35% with credit linkage; ii) Training support; iii) Maximum limit of grant in such cases would be as prescribed.
Self-Help Groups (SHGs)	Seed capital: i) Seed capital @ Rs40,000/- per member ofSHG for working capital and purchase of small tools would be provided under the scheme; ii) Priority would be given to SHGs involved in ODOP produce in giving seed capital; iii) All the members of an SHG may not be involved in food processing. Therefore, seed capital would be provided at the federation level ofSHGs; iv) This would be given as a grant to the SHG federation by SNA/ SRLM. SHG federation would provide this amount as a loan to the members ofSHGs to be repaid to the SHG.
Support to individual SHG member	As a single unit of the food processing industry with credit linked grant @35% with the maximum amount being Rs 10 lakh.

iv. Stakeholder Mapping

MINUTES OFTHE MEETING (MOM) OF NAGALAND PMFME SLUP STAKEHOLDERS MEETING DTD 09-02-2022 HELD AT DIRECTORATE OF INDUSTRIES and COMMERCE, KOHIMA – ONLINE and OFFLINE MODE – REG

Industries and Commerce

- Kekhrievor Kevichusa, Commissioner and Secretary, Industries and Commerce department (Commissioner)
- Hokishe K Assumi, Director of Industries and Commerce (Director)
- Vitsutho Nyuthe, Additional Director of Industries and Commerce (Additional Director)
- Zakielatuo Yiese, Deputy Director, Industries and Commerce (Deputy Director)
- Mhasiphizo Michael Khezhie, Nodal Officer, PMFME Scheme, Directorate of Industries and Commerce (Michael)

TransGraph

- Dr. Abdul RahmanIlyas, Global Head and Vice President, TransGraph Consulting, Hyderabad
- Mr.DeekshitManchaiah, Analyst, TransGraph Consulting, Hyderabad

Stakeholders

- M. Rollan Lotha, COO, NSRLM, Nagaland
- Lentinaro, Program Manager, NSRLM
- Dr.Hiales Zeliang, Deputy Director, Veterinary, GoN
- Dr.Vimezo Kire, Deputy Director, Fisheries, GoN
- Sendong, Jr. Asst. Commissioner, Food Safety, GoN
- Meyasashi, Deputy Director Horticulture, GoN
- Bokato Hesso, Deputy Director, Cooperation department. GoN

The meeting was held in the Directorate of Industries and Commerce, Kohima on Feb 9th, 2022 which started at 11.15 Am and concluded at 1.30 Pm.

- The formal introduction was done by Michael who welcomed the offline and online participants, he was apprised about the PMFME scheme and the Stale Level Up gradation Plan (SLUP) and apprised the group that a state-level study was conducted by M/s. Transgraph Consulting prepares district-wise reports that were circulated to all the stakeholders and the objective of this meeting is to take suggestions from every stakeholder to be incorporated into the final report. He requested the attendees to introduce themselves and later requested Commissioner to give the keynote address.

- Commissioner presented the keynote and highlighted how important the PMFME scheme is for the State of Nagaland as it is bound to scale in the coming years in terms of increased support to the

food processing sector, he highlighted the objectives of the PMFME and requested all the stakeholders present to offer their recommendations and suggestions if any to be incorporated into the final SLUP report that will become a torchbearer to implement for the development of the food processing sector so the inputs from all are going to be very crucial and encouraged all to participate.

- Director spoke about ODOP and Non-ODOP and gave a summary that Nagaland the produce is same across all the districts, so not to be confused on the ODOP and Non-ODOP, while in certain districts based on the production of that particular product is high was chosen while in other districts the same stand as Non-ODOP. So PMFME would be looking at the clusters. Director further said TranGraph Consulting Hyderabad has done a good study and the reports have been submitted to all today they will be presenting the summary and key findings of the report for stakeholders' suggestions and feedback. He requested TrangGraph to go ahead and present the report.

- Dr. Abdul Rahman from TransGraph Consulting, Hyderabad gave a brief overview of the PMFME Scheme and SLUP, he acknowledged the support of the Commissioner and Director and his team, and various important stakeholders across Nagaland. He further presented the methodology adopted for the study and gave a detailed crisp presentation on each district and covered 11 districts.

- Mr. RollanLotha, NSRLM spoke about Peren district and informed that they have a 100kg per batch vacuum drier, 24 tray over bio mass solar drier with 250 MT Capacity. In Wokha he informed fishery sector is dominated by Men, whereas NSRLM also includes women, he further informed that a fish value chain project is being currently planned in partnership with ECOP, New Delhi. 1500 kg of fish is going out of Nagaland from the Dhyong River and he wanted to establish a fish processing unit. He further informed that they have been waiting to get cooperative status for their organization which is pending with the Coop Department and requested that it be expedited. So that buy-back arrangement can be extended with a corpus which is currently a bottleneck for them.

- BokatoHesso, Deputy Reg, Cooperation Department, GoN, informed the audience that there is skilled labor available for barista coffee and he has shared a list of 100 cooperatives with the DFPI. He informed that they are working on the 10,000 FPO national mandate driven by Nabardand focusing on the creation of FPOs in Peren, Kiphire, and Kohima. 3 under the cooperative act under Nabard / NCDC and 10 under SFAC under Companys Act. He further informed that at Block level 5 villages engage in cooperative activity, hence they are trying to develop an Integrated Multipurpose Cooperative Society to tap the small group on their Adhaar base.

- Mr.Ashish, Trangraph's Survey lead informed that the touch-based Cooperatives list given by the Department and a few of them are inactive and others have been contacted and information captured. He further said that as part of the cluster study all the existing cooperatives will be mapped.

- Deputy DOH informed us that there is a marketable surplus in Pineapple and Kiwi. For example, he said farmers throw 20-25 of their produce at farm level and do not even bother to value add because of lack of time similarly in Kiwi there is a 50% marketable surplus resulting out of grading as only Grade 'A' is bought by traders. So there is an immense opportunity to convert the marketable surplus into value-added products which is currently not happening. In the district Phek, the production is kiwi is small at the same time other districts also have small production areas of Kiwi such as Kohima, Zonhebato, and Tusenang for which an aggregation hub can be created.

- Michael took over and informed all the stakeholders present to send their suggestions and feedback earlier by Monday i.e. 13th February 2022 formally. So that their respective feedback can be captured in the final report. He also requested the online participants to send their feedback by email. He further requested Additional Director to give closing remarks.

- Add. Director Industries thanked TrangGraph for giving an elaborate presentation and also thanked the participants for giving their valuable feedback. He also informed me that the report is in finalization state all the feedback and suggestions given will be incorporated.

The meeting concluded at 13.30 hours.

C. Profiling of existing Micro Enterprises ecosystem:

1. Industrial Profile of the Districts in the State

There are 20 registered industries in the district and there is one industrial area in the district. There are no medium and large industries in the district. 25 employees are working in the small industries in the district.

Table 15: Industrial Profiling of the district in the State

S. No	Particulars	Unit	Particulars
1	Registered industrial unit	Number	20
2	Registered medium and Large units	Number	Nil
3	Estimated average no. of daily workers employed in small-scale Industries	Number	25
4	No. of Industrial area	Number	1
5	Turnover of small-scale Industries	In Lakhs	10

Source: DIC, Nagaland

2. Identifying Non-ODOP Products:

Roselle Based products and Zanthoxylum-based products are identified as the Non-ODOP products in the district.

Table 16: Non-ODOP products

S. No	Crop Name	Value-added products
1	Roselle Products	Roselle Tea, Dried Roselle Leaves, and Roselle Oil.
2	Zanthoxylum Products	Zanthoxylum oil, and zanthoxylum powder.

4. District wise Industrial profiling based on secondary research

The District Industries Center, Longleng needs to be strengthened by extension work to achieve the growth envisaged by exploiting the estimated potential. The present position regarding the infrastructure available in terms of training centers, road networks, services centers, etc is inadequate and needs to be augmented to bring about a positive change in the climate. At present, the district has the following networks of centers/units.

1. Patchouli distillation Plant- 1
2. Geranium Distillation Plant- 1
3. Rural artisan project training unit- 1

To encourage prospective entrepreneurs to take up industrial activities, there are provisions to provide margin money/seed money/subsidy b the implementing agencies However there are several constraints that may be highlighted:-

a) Lack of basic infrastructure facilities, inadequate marketing support/ accessibility, and raw material supply.
b) In-adequate power supply
c) Shortage of skilled /trained manpower
d) Lack of industrial experience, and non-availability of managerial, administrative, and technical experience among the local entrepreneurs.
e) High-cost raw materials and transportation
f) Lack of coordination among various development agencies
g) Credit flow is very low due to poor return of bank loans.

i. Is the district recognized with the ODOP product?

The ginger crop is recognized as the ODOP of the district based on the existence of household and micro-processing enterprises processing the commodity and the relevant commodity is grown largely in the district.

Awareness about the ODOP Product in Longleng District

From the primary survey, it is observed that among 22 respondents 21 respondents are aware of the ODOP of the district, and one of the enterprises is not aware of the ODOP of the district.

ii. Has the product been granted Geographical Indication status by the Government of India?

Ginger-based products which are the ODOP of the district are granted no Geographical indication by the GoI.

“Naga Mircha”, “Naga tree tomato”, and “Naga cucumber” are the three agricultural commodities granted the GI tag from Nagaland.

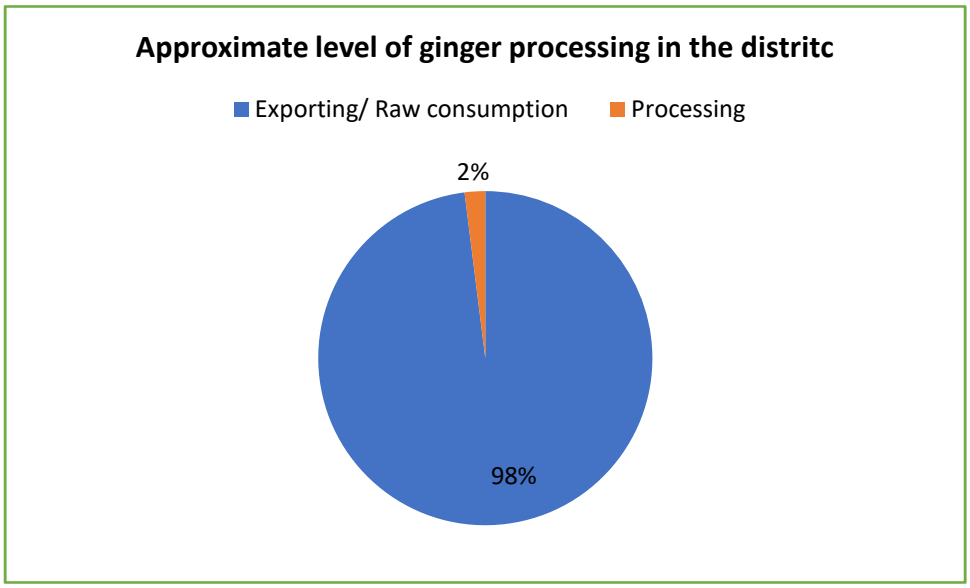
iii. Special nature and relationship of the product with the district, uniqueness, history, etc?

There is no special nature and relationship between ginger-based products with the district's uniqueness or the history of the district.

iv. Level of processing happening for ODOP in the district, in other districts, and outside the State.

From the primary survey it is observed that approximately, 68 tons of the total crop produced in the district is processed into different products like ginger paste, ginger powder, and ginger candy. The majority of the crop produced in the district is exported to other districts and states in the country.

Figure 1: Approximate Level of ginger crop processing in the district



v. Mapping of the Micro, Small, Medium, and Large Industries in the District (Total number of Units).

The total number of Micro, Small, Medium, and Large processing units available in the district and their business activities like which product they are processing either ODOP or Non-ODOP is summarized below table:

Table 17: Details of Existing Micro and Small Enterprises and Artisan units in the Longleng District

S. No	Type of Industry	No. of Units	Investment (Lakh)	Employment
1	Agro Based	10	10	50
2	Other industries	37	83	143
	Total	**47**	**93**	**193**

Source: Directorate of Economics and Statics, Govt. of Nagaland

Vi. Number of clusters engaged in the processing of this product

There is no processing cluster for the ginger crop in the district despite the good amount of crop production.
Potential clusters for the ginger crop in the district are Orangkong village and Tamlu village.

Name of the Cluster: - Mat Making Cluster at Longleng Town Proposal

Table 18: Proposed Mat making cluster in the Longleng district

S. No.	Particulars	
1	Principal products Manufactured in the cluster	Mat products, Bamboo mat, Mat Carpet

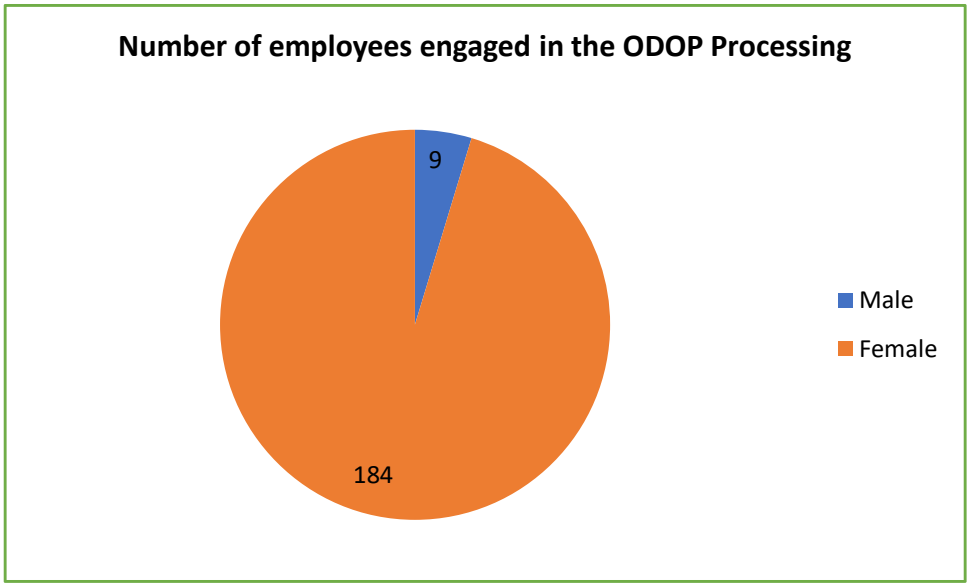
Table 18: Proposed Mat making cluster in the Longleng district		
S. No.	Particulars	
1	Name of the cluster	Mat Making Cluster at Longleng Town
2	No functional units in the clusters	50 Nos.
3	Turnover of the clusters	1.00 Lakhs
4	Value of exports from the clusters	Nil
5	Employment in clusters	100 Nos.
6	Average investment in plant &Machinery	1.50 Lakhs
7	Major issues/ requirement	Designing, Export Training, Marketing
8	Presence of capable institutions	NGO of Mat making at Longleng
9	Thrust Areas	Thrust building, New method of production, etc
10	Problems &Constraints	Skill power, Loan Marketing, etc

vii. Number of workers engaged in the ODOP processing

From the primary survey, it is estimated that there are 80 to 100 unregistered enterprises in the district and approximately 240 to 350 employees are working in the food processing enterprises.

In the 22 enterprises processing the ginger crop in the district, it is observed that 193 employees are engaged in processing ginger into various value-added products like ginger candy, ginger paste, and ginger powder. Among the total employees working in ginger processing, 9 employees are male and 184 employees are female.

Figure 2: Number of employees engaged in the ODOP processing



viii. Marketing linkages within the district, state, and outside

There is no strong market linkage or platform to sell processed products and ginger crops in the district. Processed products are sold to local retailers, shops, and vendors.

Currently, none of the traders or the processing enterprises is following any of the specialized marketing practices like an advertisement or digital marketing. The farmers are selling the produce to the local retailers and the traders in the district at discounted prices (20 to 25 INR Per Kg) and the traders are further selling the produce t the wholesalers (25 to 30 INR Per Kg) and the retailer (30 to 35 INR Per Kg) in the other district after the primary processing. A retailer in the district sells the produce to the consumer (35 to 40 INR per Kg) in the district.

Branding plays important role in the marketing of any product. For branding, there is an umbrella brand, being driven by NSAMB, i.e "Naturally Nagaland", which is a way of promoting the "Organic" brand of Nagaland. Ginger products need to be pushed aggressively within this brand, (which is not seen much now), and also independently, promoting the strengths of Nagaland Ginger.

ix. Level of infrastructure for ODOP processing within the district, in other districts, and States

There are no common infrastructure facilities like pack houses, warehouses, cold storage, and common processing facilities in the district. There is no FSSAI-accredited food testing lab in the district.

All the traders and the farmers in the district are manually or traditionally grading and sorting the products without the usage of any machinery or types of equipment. It is proposed to set up one common processing facility with 3-4 processing lines in the district. An incubation center is also proposed in the district for training and handholding support for the food processing enterprises. It is proposed to provide the machinery and equipment at subsidized prices to the existing and new processing enterprises to increase crop processing in the district.

APMC in the district:

There are 2 APMCs in the district used for crop trading.

Table 19: APMC in the district

S. No	Name of Market	Location	Delineated Market area
1	Principal Market Yard (PMY) Longleng	Longleng Town	Entire areas under Longleng District.
2	Principal Market Yard (PMY) Mon	Mon Town	Entire areas under Mon District.

Infrastructure in other districts:

There are only 2 cold storage structures in the district of capacity 6150 MT in the district.

Table 20: Cold storage in the Dimapur district				
S. No	**Name and Address**	**Capacity in MT**	**Sector**	**Commodity**
1	MARCOFED cold storage, Dimapur	1,150	Cooperative	Multipurpose
2	L. Doulo Builders and Suppliers Co (P) Ltd, Dimapur	5,000	Private	Multipurpose
	Total	**6,150**		
Source- APEDA				

x. Total production value of the ODOP product manufactured in the district and as % of total agricultural production.

Ginger was cultivated on 275 hectares of land in Longleng, with an annual production of 3,390 MT during the year 2019-20. The ginger crop contributes 1.2% of the total agricultural area in the district with the production of 3.5% of the total crop production in the district. Longleng contributes 5.8% of the total ginger crop area in the state with the production of 9.5% of the total crop production in the state.

Per kilogram of ginger crop is sold at the approximate price of 25 to 40 INR Per kg. It is estimated that INR 847.5 to 1356 Lakhs worth of ginger crop is produced in the district. Among the total crop produced in the district, approximately, 67 tons of crop is processed into ginger powder, ginger paste, and ginger candy. It is estimated that INR worth 100 to 120 lakhs worth of ginger powder, paste, and ginger candy is produced in the district.

xi. Number of enterprises involved in the processing of this product and as a % share of the total number of micro food processing enterprises in that district

22 enterprises are involved in ginger processing in the district. Ginger processing involves primary processing (Drying, sorting, grading, and packaging) and secondary processing (Ginger powder, ginger paste, and ginger candy). It is estimated that only 2% of the total 3390 tons of the crop produced in the districts is processed into ginger powder, ginger candy, and ginger paste.

xii. Number of Self Help Groups and Farmer Producer Organizations engaged in the Processing of this product.

There are around 29 SHGs involved in various agriculture activities in the District.

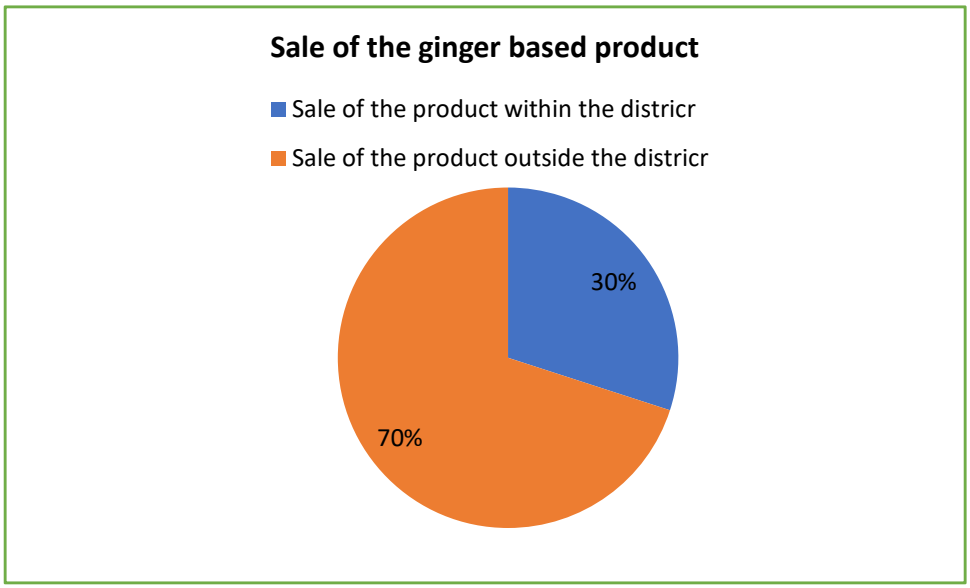
A list of the FPOs, SHGs, and Co-operatives is attached in the annexure.

xiii. Sale of this product to other districts, and states and exported to other countries

From the primary survey, it is estimated that only 20 to 30% of the 60 to 70 tons of ginger processed products produced in the district are exported to other districts in the state through wholesalers and

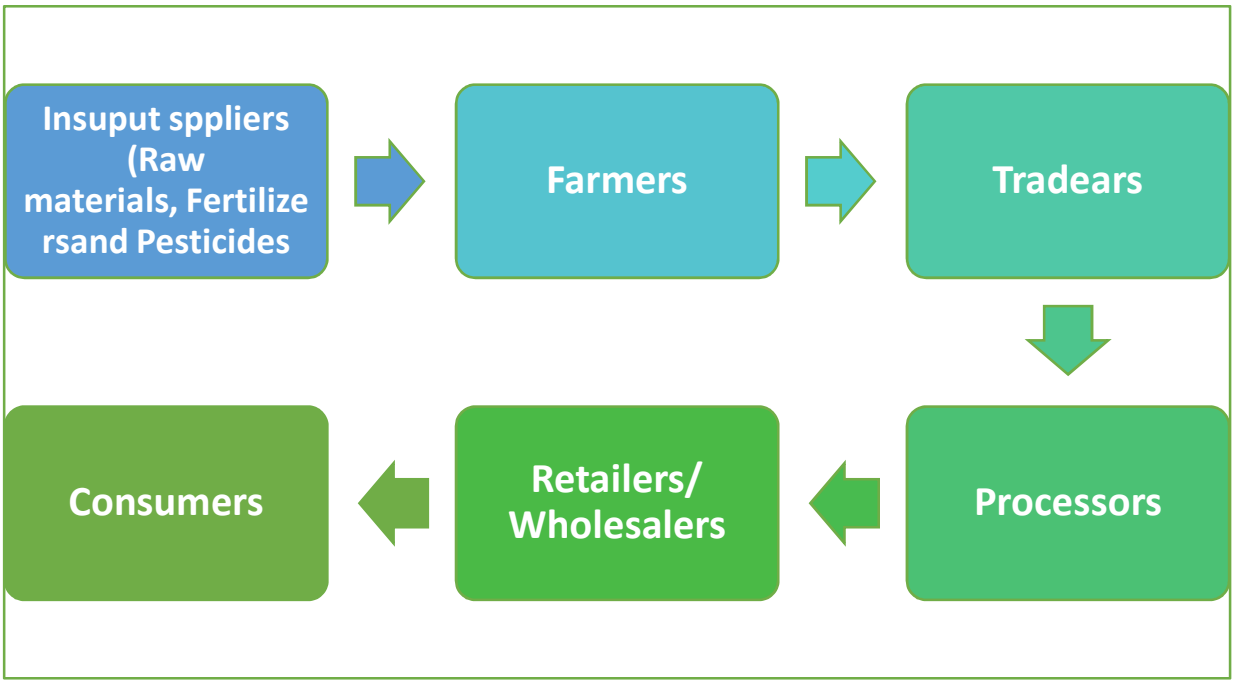
retailers. 70 to 80% of ginger-based products are sold at the district level through local retailers and wholesalers.

Figure 3: Sale of the ginger-based products



5. Mapping the value chain aspects

Figure 4: Mapping the value chain aspects



The majority of the villagers prefer to sell the produce at the village level as the transportation of the crop to other places in the district is quite expensive. The traders after purchasing the crop from the farmers perform the primary processing and selling to the wholesalers or the retailers in the district and another district.

Processors purchase the crop from traders or wholesalers in the district. Processors sell ginger-based products to the consumer through wholesalers or retailers in the district. The majority of the processors sell the processed products to the local retailer and few processors sell the produce to the wholesalers who will export the produce out of the district.

6. Understanding the Infrastructure constraints faced by Micro Enterprises:

The quality and connectivity of the roads are the basic infrastructure constraint in the district. Financial assistance requires for the purchase and up-gradation of the machinery and equipment for the ginger processing enterprises. Skill development training is required regarding the quality parameters of the processed products, FSSAI certification, and new technology developed related to commodity processing. Food processing enterprises in the district are lacking in awareness about government-promoting schemes and recent developments in the food processing industry in the state and in the county.

Table 21: Infrastructure constraints faced by micro-enterprises

Infrastructure	Up-gradation proposals
A) Public Infrastructure	• Ginger crop farmers and ginger powder, ginger paste, and ginger candy processors are facing product losses during transporting their produce to wholesalers and retailers in the district and other districts in the state. • To overcome this issue it is suggested for the state and central government to construct better roadways to connect nearby districts as well as to other states, which will reduce the crop loss post harvesting and also encourage existing enterprises to expand their business and new entrepreneurs to come into the sector.
B) Common facilities	• There is no common infrastructure like pack houses, warehouses, and cold storage in the district for the processing enterprises and the farmers for primary processing. • It is proposed to establish one Common processing facility center with machineries like Peeler, Slicer, Polisher, Grinder, Siever crusher, Bottle filling machine, and Packaging machine in the district for the existing and new enterprises.
C) Testing facilities	• There is no food testing lab in the district. • Due to poor public infrastructure and lack of common infrastructure facilities, the scale of the industry is very small in the district and the

	majority of the enterprises are not centerfield by the FSSAI. • It is proposed to set up the testing lab in the proposed incubation center for the existing and new enterprises.
D) Safety standards	• Most of the processor units in the district are not certified by the FSSAI. • Regular safety standards and quality checks for the processed product are required to ensure the quality of the product processed by the enterprises in the district.

D. Mapping the Firm level issues

Table 22: Mapping the firm-level issues

S. No	Sectors	Gaps	Recommendations	Costing (Lakhs)
1	Skill training needs	• There is no skilled labor in the food processing industries in the districts and there are no proper skill training facilities available in the district.	• Provide training to the existing enterprises (Primary processing and secondary processing) and new entrepreneurs on the standardized process of processing ginger paste, ginger powder, ginger oil, and ginger candy and training on the branding and marketing of the processed products. • Skill development training on handling advanced machinery and equipment like machinery like peeler, slicer, polisher, grinder, siever, Bottle filling machine, and packaging machine.	12
2	Manufacturing practices	• Existing farmers/Traders' Enterprises are following the traditional method of ginger drying and grinding and powder making which affects the quality of the final product.	• It is proposed to set up one common processing facility that can be used for processing the products by the enterprises in the district.	400
3	Technologies	• There is no use of	Provide advanced machinery	1184.5

Table 22: Mapping the firm-level issues				
S. No	Sectors	Gaps	Recommendations	Costing (Lakhs)
		advanced technology or machinery in the district by the existing enterprises. • Existing farmers/Traders and processing enterprises are following the traditional method of processing ginger drying, ginger paste, ginger powder, and ginger candy.	and equipment like machinery like peeler, slicer, polisher, grinder, siever, Bottle filling machine, and packaging machine at subsidized prices for the existing and new processing enterprises.	
4	Access to finance	• Lack of financial support to the processing units due to lack of food processing policies in the state and constraints faced by the unit holders in exhibiting the collateral to the banks and preparing the DPR.	• The proposed incubation center can be used in attaining financial support for the enterprises by providing DPR and guiding the enterprises in attaining financial and technical support.	275
5	Access to mentorship/ Services	• There is no access to mentorship/ service in the district	• An incubation center is proposed to be set up in the district for guiding the existing and new enterprises in the district	275

II. Detailed cluster study:

I. Industry and Market Analysis

1.1 Introduction

Ginger is a very important commercial crop grown for its aromatic rhizomes which are used both as a spice and as medicine. Ginger is valued for the dried ginger spice and preserved crystallized ginger. Ginger is a perennial plant but is usually grown as an annual for harvesting as a spice. Ginger is best grown in partial shade and can be incorporated as an intercrop in coconut, coffee, and orange plantations.

India is the largest producer and consumer of ginger contributing about 31% of total global production followed by China, Nepal, Indonesia, Nigeria, and Thailand. In the countries such as Canada, the U.K, U.S.A. ginger is used in the soft drink manufacturing industry, baking industry, and meat processing industry up to a great extent. Madhya Pradesh, Karnataka, Assam, Orissa, Sikkim, Arunachal Pradesh, and West Bengal, is the major ginger-producing states in India. Among these Madhya Pradesh contribute 23 percent to the total production which has proven to be the largest ginger-producing state in India. Cochin ginger and Calicut ginger are the popular Indian ginger varieties in the world market.

1.2 Nutritive Value and Health Benefits of the product

Nutrient composition

Table 23: Nutritional data for 100 g dry ginger

Particulars	Value
Water	9.4 g
Protein	9.1 g
Food Energy	347 kcal
Fat	6.0 gm
Total Carbohydrate	70.8 gm
Fiber	5.9 gm
Ash	4.8 gm
Source: NIFTEM Manual	

Health Benefits:

- Contains gingerol, which has powerful medicinal properties
- Treat Nausea
- Help in weight loss
- Help with osteoarthritis
- Lower blood sugar and improved heart disease risk factors
- Treat chronic indigestion
- Reduced menstrual pain

- Lower cholesterol level
- Prevent cancer
- Improve brain function and protect against Alzheimer's disease
- Help fight infections

1.3 Global Market for the Product:

The global ginger processing market is expected to grow at a CAGR of 13.40% during 2021-2026.
There is a large market for both fresh and dried ginger. The demand for ginger oil is ever-increasing. It has good export and domestic demand. New entrepreneurs can well venture into this field. The demand is expected to reach 4,212 tonnes by the year 2022.

Global Ginger Exports

China is the largest exporter of ginger across the world exporting over 50%, followed by the Netherlands, Thailand, Peru, and India. On the other hand, the US is the world's largest importer of ginger followed by Japan, the Netherlands, Pakistan, and Germany.

Table 24: Global ginger exports

Country	Trade Value Million USD	Quantity (Tons)
China	571.7	53,7826
Netherlands	106.0	51,722.5
Thailand	55.8	7,1678
India	44.6	26,863.7
Peru	41.4	26,863.7
United Arab Emirates	29.0	29,369.7
European Union	25.8	12,480.3
Brazil	22.2	22,091.3
Germany	15.7	3,735.44
Spain	10.7	3,892.08
Vietnam	10.6	3,854.57
Other Asia	6.1	1,819.4
United States	5.5	2,461.91
Indonesia	4.9	4,444.9
Source- Worldbank.org- 2019		

1.4 Indian Market and Valuation for the Product

India is aiming to encash the consistently increasing demand for ginger and ginger-based products throughout the world. In addition to this, the Indian government is lending its support to the industry players who have engrossed themselves in the ginger powder production business and other forms of ginger business. Exporters of dried ginger are keeping their eyes on Europe and various other International countries.

Consumers prefer to include ginger in their daily health regime during the winter as it has several health properties. For instance, consumers utilize ginger as a sore throat remedy. The elevating ginger market

In the last decade, consumers residing in India or abroad have shown their interest in purchasing herbal products and thereby, widening the scope of expansion for the ginger business and ginger powder production business in India. Even though the production of ginger and ginger-based items has increased, exports haven't witnessed anything to boast of in our country. Keeping the records aside, we must say that the export of ginger will be observing a steering growth in the upcoming years.

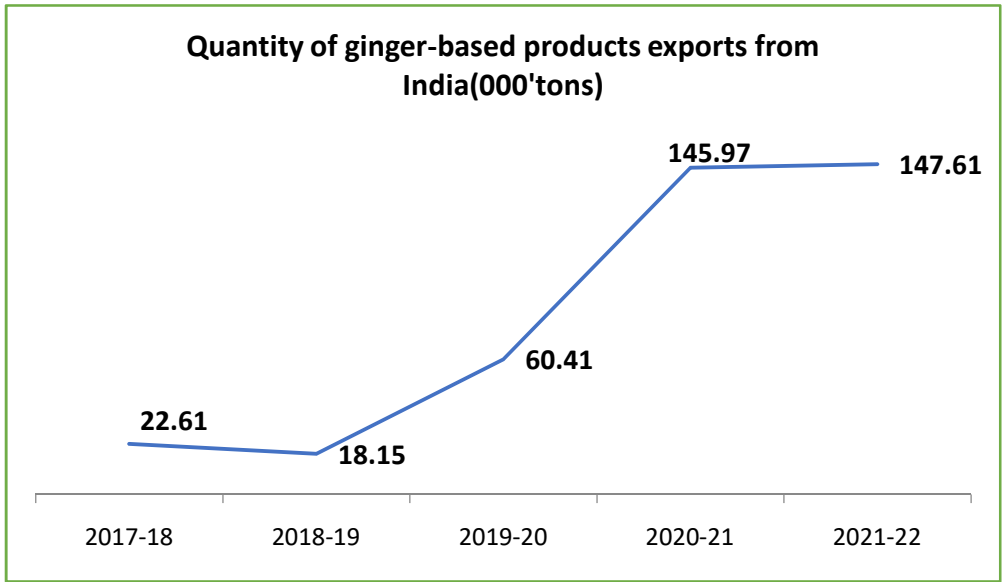
Exports of the Ginger from India

The ginger exports from India drastically increased from 2017 to 2021. In 2017, 22.6 thousand tons of ginger crops is exported from India, and in 2021 148 thousand tons of ginger, crops is exported. From 2017 to 2021, exports of ginger crops increased by 553%.

Table 25: Exports of ginger-based products from India

Year	Quantity (1000 Tons)	Value (1000 Lakhs)
2017-18	22.6	21.60
2018-19	18.1	19.60
2019-20	60.4	52.91
2020-21	146	84.98
2021-22	148	83.73
Source: Spice Board of India		

Figure 5: Quantity of ginger-based products exports from India



1.5 Manufacturing Process

Figure 6: Ginger Candy

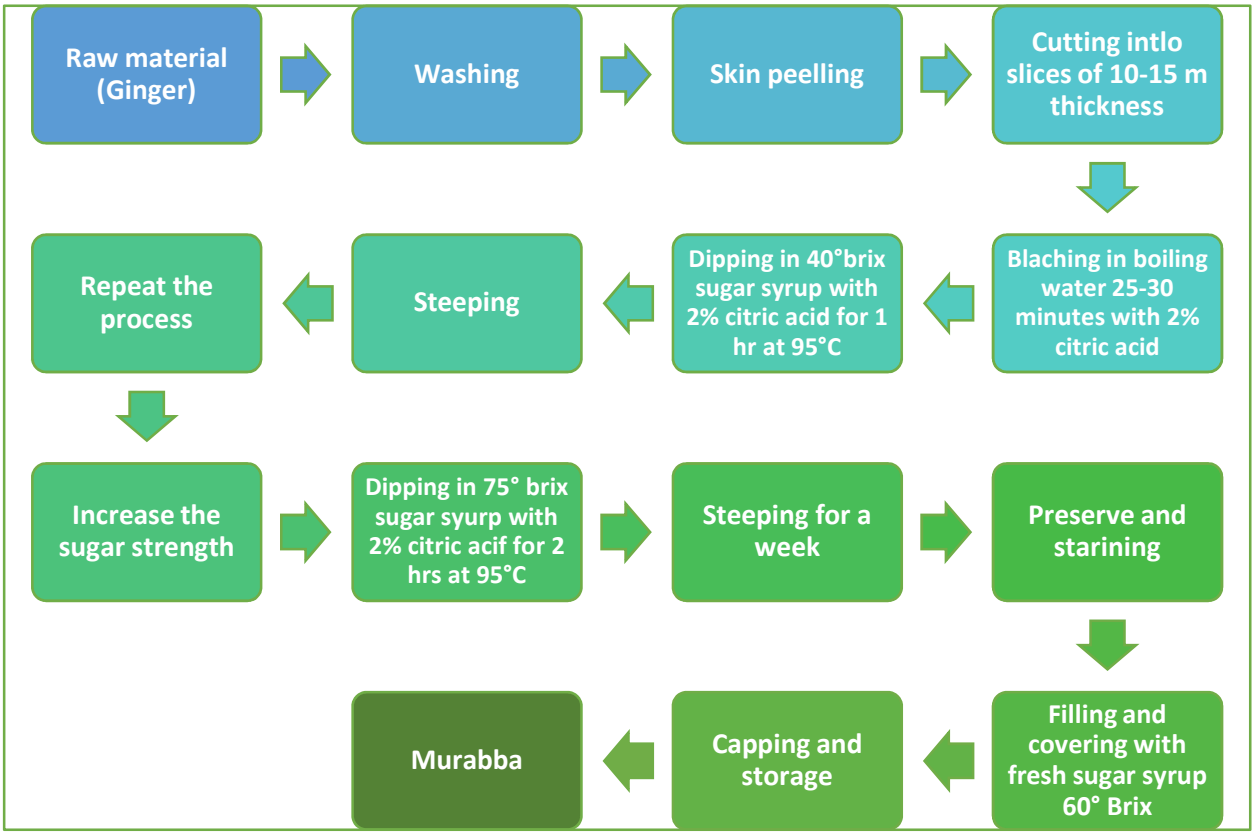


Figure 7: Ginger Paste

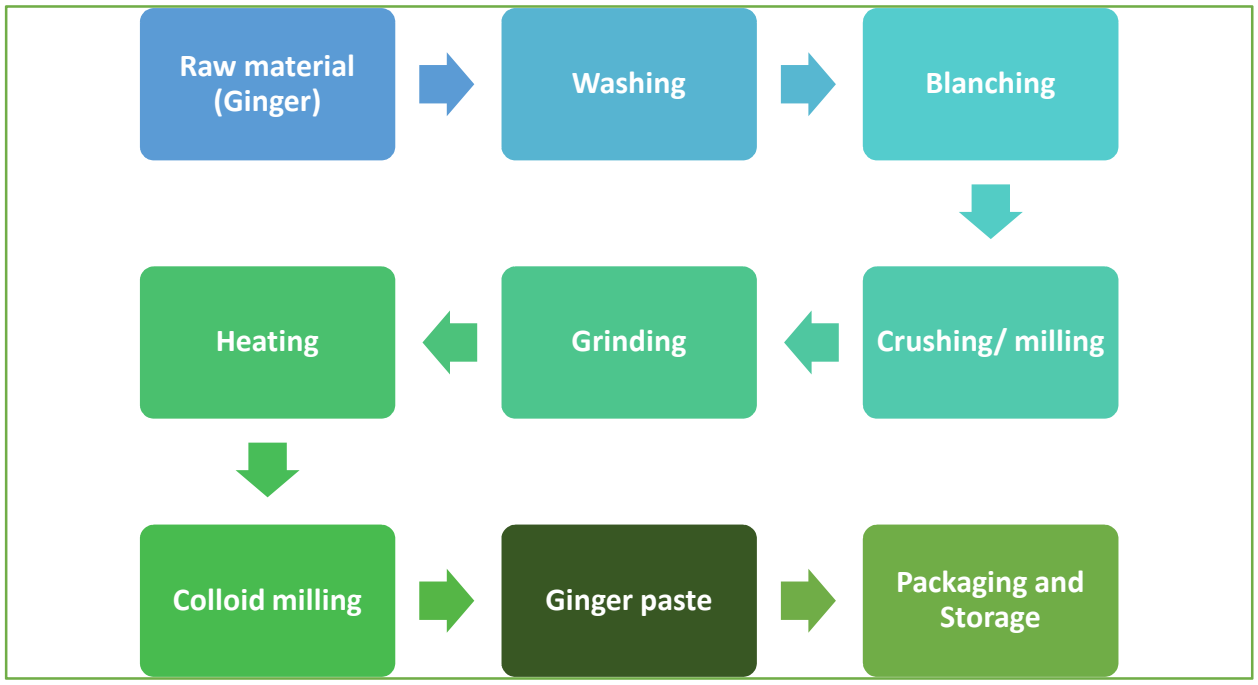
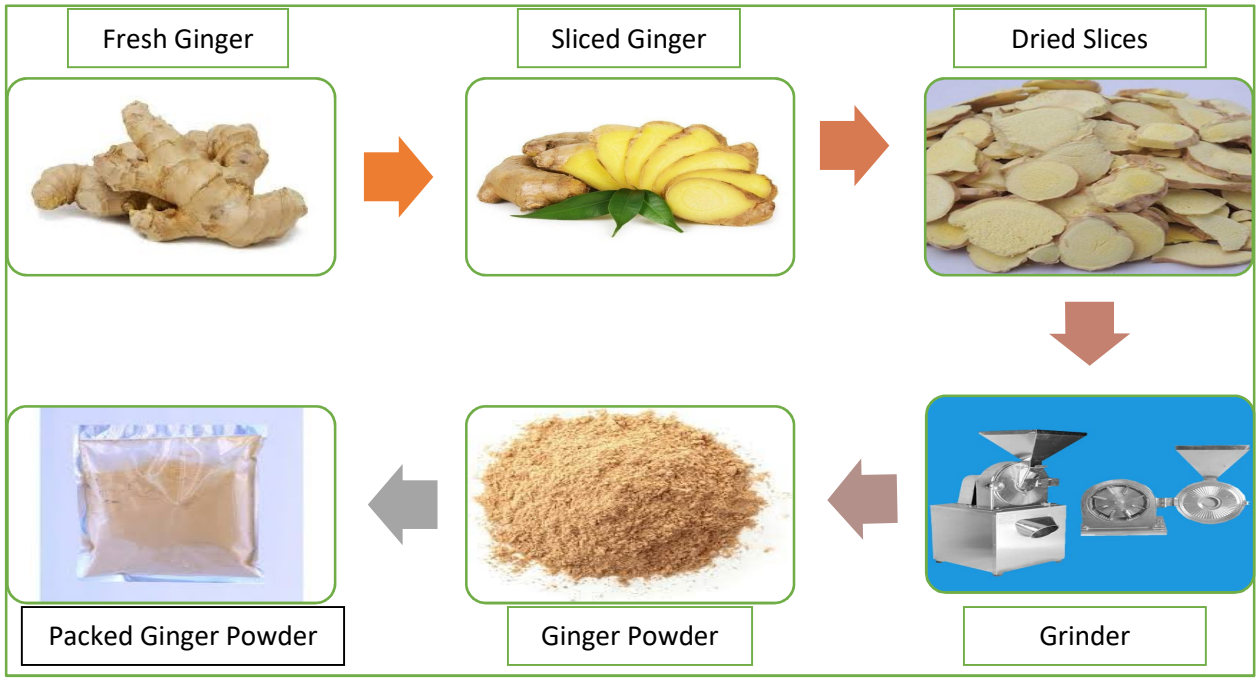


Figure 8: Ginger Paste



Source: Primary Survey and India Mart

1.6 Test is done for the Product

General Characteristics

- It shall be dried rhizomes of Zingiber Officinale Rose, in pieces, irregular in shape, pale brown.
- Its fibrous content shall be characteristic of the variety with peel not entirely removed.
- It shall be lime bleached.
- It shall have characteristic taste and flavor and shall not have a musty odor or a rancid or bitter taste.
- It shall be free from added coloring matter.
- It shall be free from mold growth and living insects and practically free from dead insects, insect fragments, and rodent contamination.
- It shall comply with restrictions regarding Aflatoxins, Metallic Contaminants, Insecticide or Pesticide residue, poisonous metals, naturally occurring Contaminants, Microbial load, and the like as specified by the Codex Alimentarius Commission or as per buyers' requirements for Export purposes and the Prevention of Food Adulteration Rules, 1955 for domestic trade.

FSSAI Standards:

Whole Ginger:

Table 26: Whole ginger FSSAI standards

S. No	Particulars	Value
1	Extraneous matter	Not more than 1% by weight
2	Moisture	Not more than 12% by weight
3	Total ash on a dry basis	
a	Unbleached	Not more than 8% by weight
b	Bleached	Not more than 12% by weight
4	Calcium as calcium oxide on a dry basis	
a	Unbleached	Not more than 1.1% by weight
b	Bleached	Not more than 2.5% by weight
5	Volatile content on a dry basis	Not less than 1.5 percent by v/w
6	Insect damaged matter	Not more than 1% by weight

Ginger paste:

Table 27: FSSAI Standards for the ginger paste

S. No	Name of the product	Total soluble solids (m/m)	Acidity %
1	Ginger paste	Not less than 3%	Not less than 1%

Ginger Powder:

Table 28: Ginger powder FSSAI standards		
S. No	**Particulars**	**Value**
1	Moisture	Not more than 12% by weight
2	Total ash on a dry basis	
	a. Unbleached	Not more than 8% by weight
	b. Bleached	Not more than 12% by weight
3	Calcium as calcium oxide on a dry basis	
	a. unbleached	Not more than 1.1% by weight
	b. bleached	Not more than 2.5 % by weight
4	Volatile oil content on a dry basis	Not less than 1.5 % v/w
5	Water soluble ash on a dry basis	Not less than 1.7% by weight
6	Acid insoluble ash on a dry basis	Not more than 1% by weight
7	Alcohol (90% v/w) soluble extract on a dry basis	Not less than 5.1% by weight
8	Cold water soluble extract on a dry basis	Not less than 11.4% by weight

2. District Profiling

Longleng District has no State and 3 District boundaries. On the East, it shares boundaries with Tuensang and Mon district of Nagaland. In the North, it has Nagaland's Inter-State boundary with Assam. On the west, it shares a boundary with the Mokokchung District of Nagaland. In the South, it shares a boundary with the Tuensang and Mokokchung districts of Nagaland. Its main river is Dikhu.

2.1 and 2.2 Demographic and Socio-economic profiling

According to the 2011 census Longleng District has a population of 50,593. Longleng has a sex ratio of 903 females for every 1000 males, and a literacy rate of 73.1%.

Table 29: Demographic and Socio-economic profiling				
S. No	**Particular**	**Year**	**Unit**	**Statistics**
1	Geographical features			
A	Geographical Data			
	i) Latitude			26 N -27 N
	ii) Longitude			94E-95 E
	iii) Geographical Area		Hectares	88500
B	Administrative units			
	i) Sub Divisions		No	2
	ii) Tehsil		No	
	iii) Sub-Tehsil		No	

Table 29: Demographic and Socio-economic profiling				
S. No	Particular	Year	Unit	Statistics
	iv) Patwar circle		No	4
	v) Panchayat Simitis			
	vi) Nagar Nigam			2
	vii) Nagar Palika			
	viii) Gram Panchayats		Nos	38
	ix) Revenue Villages		Nos	38
	x) Assembly Area		Nos	2
2	Population			50593
A	Sex wise			
	i) Male (Urban)	2011	Nos	3994
	ii) Female (Urban)	2011	Nos	3615
B	i) Male (Rural)	2011	Nos	22594
	ii) Female (Rural)	2011	Nos	20390
3	Agriculture			
A	Land Utilization			88500
	i) Total Area	2011	Ha	3357
	ii) Forest cover		Ha	62008
	iii) Non-Agriculture Land		Ha	23135
	iv)Cultivation of Barren Land		Ha	
4	Forest		Ha	4228
	Railways			
	i) Length of the rail line	2010-11	Km	Nil
	Roads			
	a)National Highway	2010-11	Km	Nil
	b) State Highway	2010-11	Km	113.30
	c) Main District highway	2010-11	Km	118
	d) another district	2010-11	Km	155
	e) Rural Road/Agriculture Marketing Board Roads	2010-11	Km	123.50
	f) Kachacha Road	2010-11	Km	389.80
	Communication			
	a)Telephone connections	2010-11	Number	2500
	b)Post offices	2010-11	Number	7
	c) Telephone Centre	2010-11	Number	1
	d) Density of Telephone	2010-11	Number /1000 person	50.59

Table 29: Demographic and Socio-economic profiling				
S. No	Particular	Year	Unit	Statistics
	e) Density of Telephone	2010-11	Number /KM	N/A
	f) PCO	2010-11	Number	250
	g) PCO-STD	2010-11	Number	350
	h) Mobile	2010-11	Number	25000
	Public Health			
	a)Allopathic Hospital(District Hospital)	2010-11	Number	1
	b) Beds in Allopathic Hospital	2010-11	Number	84
	c)Ayurvedic Hospital	2010-11	Number	0
	d) Beds in AyurvedicHospital	2010-11	Number	0
	e) Unani Hospitals	2010-11	Number	0
	f) Community Health Center	2010-11	Number	1
	g) Primary Health Centre	2010-11	Number	3
	h)Dispensaries	2010-11	Number	0
	i)Sub-Health center	2010-11	Number	8
	j)Subsidiary Health Centre	2010-11	Number	1
	k)Private Hospitals	2010-11	Number	NA
	Banking Commercial		Number	
	a)Commercial Bank	2010-11	Number	1
	b)Rural Bank products	2010-11	Number	0
	c)Co-operative bank products	2010-11	Number	0
	d)PLDB Branches	2010-11	Number	0
	IX)Education	2010-11	Number	
	a)Primary School	2010-11	Number	65
	b)Middle Schools	2010-11	Number	19
	c)Secondary and Senior Secondary Schools	2010-11	Number	9
	d)Colleges	2010-11	Number	1
	e) Technical University	2010-11	Number	0

2.3 Industrial Profiling

In the Longleng district, there are altogether around 70 industrial units. There are no large industries in the district.

It is estimated that there are 80 to 100 unregistered food processing enterprises operating in the district with approximately 240 to 400 employees engaged in the food processing enterprises.

3. Cluster Analysis

3.1 Location of the cluster

Considering the production of the crop and the number of food processing units in the district, villages like Orangkong village and Tamil village are the potential clusters for ginger crops in the district. 22 units surveyed sample in the district are involved in processing the ginger paste, ginger powder, and ginger candy and selling through the existing channels. There are no common facilities like warehouses, cold storage, and pack houses in the district.

Clusters are available for other nonagricultural commodities however; there is no formal cluster for ginger processing. There is a strong need to form a cluster to bring together all processing units in the district under one cluster.

3.2 Turnover and Employment

From the primary survey, it is estimated that 60 to 70 tons of the total 3900 tons of crops produced in the district are processed into ginger candy, ginger paste, and ginger powder. Below 2% of the total crop produced in the district is processed. It is estimated that 100 to 120 lakhs worth of ginger-based products is processed in the district.

Employment:

From the primary survey, it is observed that 193 employees are working in ginger processing enterprises in the district. Among the 193 employees working in ginger processing enterprises, 184 are female employees and 9 are male employees.

It is estimated that there are 80 to 100 unregistered food processing enterprises operating in the district with approximately 250 to 400 employees engaged in the food processing enterprises.

3.3 Social Economic Profiles of the ODOP Producers

- It is observed from the primary survey that most of the unit owners belong to the age group of 35 to 60 years and their education level lies from intermediate to post-graduation

- Workers' age group lies between 20 years to 60 years and they have education up to intermediate.

3.4 Infrastructure

3.4.1 Essential amenities required for the production of the product

Ginger Paste: Capacity 150 MT/Per annum

Table 30: Essential machinery for the ginger paste				
S. No	**Equipment**	**Quantity**	**Capacity**	**Price (Lakhs)**
1	Cold store	1	9000 KG	8
2	Water tank	1	200 Liters	0.6
3	Skin peeling machine	1	200 Kg/hr	1.2
4	Blanching kettle Gas operated	1	300 Liter	0.8
5	Crusher/Miller	1	100 Kg/hr	0.4
6	Vegetable Grinding Machine	1	100 kg/hr	0.3
7	Thermic fluid kettle with scraper	1	150 liter	1.6
8	Colloid mill	1	Continuous	1.3
9	Finished product storage tank	1	150 liters	0.4
10	Cont. Sealing machine	1	Suitable	0.35
11	Weighing balance	1	Suitable	0.06
12	Accessories	1	Suitable	0.5
	Total			**15.51**
Source: NIFTEM Training Manual				

Ginger candy: Capacity 150 MT/Per annum

Table 31: Essential for Ginger candy				
S. No	**Equipment**	**Quantity**	**capacity**	**Price (Lakhs)**
1	Cold Store	1	1599 Kg	4
2	Washing tank	1	200 Liter	0.8
3	Skin peeling machine	1	200 Kg/hr	1.2
4	Chipping machine	1	100 Kg/hr	0.5
5	Blanching kettle gas operated	1	300 Liter	0.8
6	Sugar syrup tank	3	1000 liter	3.6
7	Bottle filling machine	1	Suitable	1.4
8	Weighing balance	1	Suitable	0.06
9	Accessories	1	Suitable	0.5
	Total			**12.86**
Source- IIFPT Manual				

Ginger Powder: Capacity 120 MT/ Per annum

Table 32: Essential machinery for ginger powder

S. No	Machinery	Quantity	Amount (Lakhs)
1	Weighing scale	1	1.00
2	Washer cum Peeler	1	2.50
3	Slicer	1	1.50
4	Dryer	1	6.00
5	Polisher	1	1.00
6	Grinder	1	4.00
7	Sieving machine	1	1.50
8	Packing machine	1	2.50
	Total		20.00

Source- IIFPT Manual

Figure 9: Essential machinery for ginger powder

1. Ginger Peeler machine	2. Ginger Slicer
	
3. Ginger Drier	**4. Ginder**
	

Source: Primary survey and India Mart

3.4.2 Existing infrastructure

There is no common infrastructure like cold storage and pack houses in the district for the processors. There is no incubation center and common processing center to encourage the new entrepreneurs to enter the food processing sector and to support the existing enterprises.

3.4.3 Additional infrastructure required

- **Common infrastructure facility (Cold storage and Reefer van)–**There is no common facility cold storage, reefer van, warehouses, and pack houses in the district. It is proposed to establish common infrastructure facilities like cold storage, warehouses, and pack houses for the processing enterprises in the district to reduce post-harvest crop losses.

- **Incubation center**- There is no incubation center for processing enterprises in the district. It is proposed to set up an incubation center in the district for training and handholding the existing and new processing enterprises in the district.

- **The machinery required-** Currently, only **a** few tons of the crop produced in the district is processed into different products like ginger paste, ginger powder, and ginger candy and the majority of the growers are selling the crop directly to the traders and the wholesalers in the district. It is proposed to provide advanced machinery like Dryer, Peeler, slicer, grinding machine, bottle filling machine, and packaging machine at subsidized prices for the existing and new entrepreneurs.

- **Good quality Roads -** Good quality roads are the basic infrastructure required for the processing industry in the district. There is a lack of good road connectivity within the district and to other districts in the state. It is suggested to increase road connectivity to decrease post-harvest crop losses and to increase the sale of processed products to other districts in the state.

3.5 Raw materials

3.5.1 The vital raw material

Ginger is the major raw material in ginger powder and ginger paste. Sugar is used in the preparation of ginger candy. 95% of the pulp can be extracted from 1 kilogram of ginger and 1 kg of ginger candy from 0.385 kg of ginger.

3.5.2 The quality parameters being checked for all the raw materials

Table 33: FSSAI Standards for whole ginger		
S. No	**Particulars**	**Value**
1	Extraneous matter	Not more than 1% by weight
2	Moisture	Not more than 12% by weight
3	Total ash on a dry basis	
a	Unbleached	Not more than 8% by weight
b	Bleached	Not more than 12% by weight
4	Calcium as calcium oxide on a dry basis	
a	Unbleached	Not more than 1.1% by weight
b	Bleached	Not more than 2.5% by weight
5	Volatile content on a dry basis	Not less than 1.5 percent by v/w
6	Insect damaged matter	Not more than 1% by weight
Source: FSSAI Manual		

Table 34: FSSAI Standards for the raw sugar		
S. No	**Particulars**	**Value**
1	Moisture	Not more than 0.5% by weight
2	Sucrose	Not less than 98% by weight
Source: FSSAI Manual		

3.5.2 Whether the raw material is perishable

The ginger crop is semi-perishable.

Table 35: Perishable nature of the raw material		
S. No	**Product**	**Shelf life**
1	Ginger	5 to 8 days
2	Sugar	20-24 Months
Source: Primary Survey		

3.6 Production Process

The detailed production process is explained in point number 4.5 i.e. manufacturing process

3.7 Product Range

- Dried Ginger
- Ginger Powder

- Ginger Candy
- Ginger Pickle
- Ginger Oil
- Oleoresins

3.8 Technology

Ginger Beverage:

Required equipment:

Canning retorts, Tilting kettles, Stationery kettle SS, Pump roto, Syrup tanks, Tray drier, Mono rail with hoist, SS Vessels, Brix refractometer, Sugar grinder, Boiler, etc.

Table 36: Project requirement

S. No	Particulars	Unit	Value
1	Land	Sq. meter	600
2	Building	Sq. meter	200
3	Plant and Machinery	INR 000’	4000
4	Total project cost	INR 000’	6000

Source: CFTRI

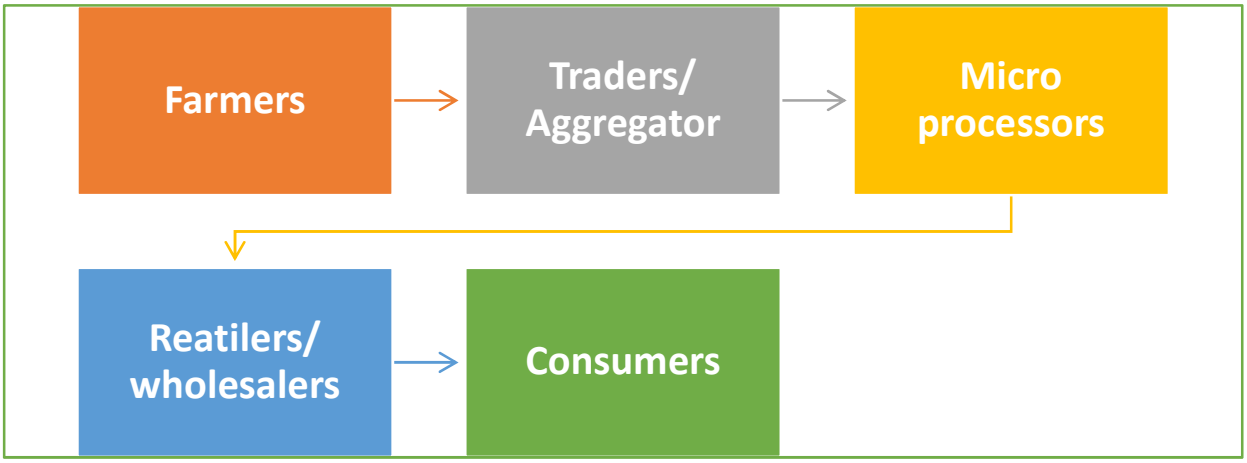
3.9 Marketing

Farmers or traders are processing (primarily processing) the ginger crop and selling it to the local trader or the retail outlets or the consumer. Few enterprises are processing ginger paste, ginger powder, and ginger candy and selling to wholesalers and retailers in the local who will future sell the produce to the consumers in the district.

There is no special marketing like an advertisement or digital marketing by the processor in the district. None of the primary processing enterprises are selling products with a specific brand name.

From the primary survey, it is observed that almost 70 to 80% of the ginger paste, ginger powder, and ginger candy produced in the district are sold within the district through local retailers and approximately only 20 to 30% of the produce is exported to other districts in the state through the wholesalers.

Figure 10: Existing sales channel of the produce in the district



3.10 Human Resource

From the primary survey, it is observed that 193 employees are working in the 22 surveyed enterprises among the total employees working in the ginger processing enterprises, 184 employees are female and 9 employees are male.

From the primary survey, it is estimated that there are 80 to 100 unregistered food processing enterprises operating in the district. It is estimated that approximately 200 to 400 employees are working in the unregistered food processing enterprises in the district.

3.11 Skill Development

There is a shortage of skilled labor in the ginger processing industry and there are no proper skill training facilities available in the district. It is proposed to provide training to the existing enterprises and new entrepreneurs on the primary processing and secondary processing (Ginger paste, ginger powder, ginger candy, ginger oil). Skill training is required regarding the use of advanced technology and machinery like Grading machines, sorting machines, drying machines, grinders, bottle filling machines, packaging machines, slicers, etc. It is suggested to provide the training and skill development on creating the branding and marketing of the produce.

3.12 Testing

The majority of the processing enterprises in the district are selling processed ginger powder, ginger paste, and ginger candy without FSSAI registration. There are no testing facilities in the district. It is proposed to set up the testing lab in the proposed incubation center for the existing and new enterprises in the district. The FSSAI standards for the ginger powder, ginger candy, and ginger paste are mentioned in section 1.6 (Test done for the produce)

3.13 Institutional Support

I. Assistance scheme for spices export:

Eligibility criteria:

All the registered exporters who have registered their brands with the Board, Spice House Certificate (SHC), Logo holders, and organic certification holders are eligible to avail of the benefits of the scheme. The recognized research institutions are also eligible to apply for this assistance scheme.

Assisted Area under the Scheme:

- Utilization of the services of international or national research institutes for the development of new spice products and applications or for establishing traditional and non-traditional values.
- In-house research programs by entities with sufficient infrastructure facilities.
- Clinical trials to establish and verify the therapeutic properties of the spices through reputed third parties.
- Patenting and product registration in consuming countries.
- Spices Board would examine the application forms and on satisfying the proposal, the Board will accord 'in-principle' approval to the project proposal on merit to proceed with the project further.

The scale of assistance:

Under this scheme, the subsidy is provided at 50% of the cost subject to a maximum amount of Rs.25 lakhs per beneficiary during the plan period that is provided to meet the cost of product research and development. In this case, clinical trials and patents are also involved in the program; the ceiling amount will be up to Rs.1 crore. All payments under the assistance schemes by the Board would be in the form of a crossed cheque or Bank transfer.

II. Spice development agency (SDA):

The government of India has notified the formation of 11 Spice Development Agencies (SDAs) in the main Spice growing regions for the overall development of spices grown in the region. These agencies will be chaired by the Chief Secretary of the concerned State Government and consist of members from the Ministry of Commerce and Industry, the State / Central Agriculture / Horticulture Ministry, other related Central / State organizations, and Agri. University, Member of Spices Board from the region and various stakeholders of the Industry viz. growers, traders, and exporters of spices. The Agency will identify the issues and formulate programs relating to production, domestic marketing, and quality and export promotion of Spices in the region. Spices Board's offices have been restructured for facilitating the formation of SDAs and effectively implementing various programs formulated by the SDAs.Accordingly,12 Regional Offices (ROs) of the Board have been established in major spice-growing centers in the country. The programs identified by the SDAs will be implemented by the Regional Office

(RO) of the Board, attached to the SDAs in coordination with the State Government subject to the approval of the Board. The SDAs will function under the overall authority, supervision, and control of the Spices Board.

III. Spices Park:

A Spices Park can be defined as an industrial park for processing and value addition of Spices and Spices products which offers processing facilities at par with international standards. The Regional crop-specific Spices Park is a well-conceived approach to having an integrated operation for cultivation, post harvesting, processing for value addition, packaging, storage, and exports of spices and spice products by meeting the quality specifications of the consuming countries.

Facilities at Spices Parks:

The basic objective of the concept is to provide common infrastructure facilities for both post-harvest and processing operations of spices and spice products, which also aims at backward integration by providing rural employment. All the Spices Park will have processing facilities at par with international standards in which the produces could undergo cleaning, grading, sorting, grinding, packing, warehousing, etc. Apart from the above facilities, the Board will develop common infrastructure facilities like Roads, Water supply systems, Power stations, Firefighting and Control systems, Weighing bridges, effluent Treatment Plants, Quality Lab for checking basic parameters, Bank and Post office counters, Restaurant, Business centers, Guest house, etc.

Spices Park will also render educative services to the farming/trading community. It provides training programs on Good Agricultural Practices (GAP), post-harvest operations, advanced processing practices, global food safety and quality standards and issues, etc. The establishment of Spices Park in the country is a major initiative of the Government as part of its commitment that any growth in the country should be more agriculture-specific and pro-farmers. Spice Park will ensure better pricing for the produce by shortening the channels in the supply chain system currently followed locally. The common processing facilities available in Spice Park can be utilized by the farming community for primary processing for improving the quality of their product and thereby they can directly sell to the exporters.

3.14 Support Infrastructure

There are no common infrastructure facilities and incubation centers in the district for processing enterprises. There is a measurable loss in ginger crop aroma and quality during transportation due to the lack of road connectivity within the district and to other states. Road connectivity needs to be improved with the initiatives from the state and central government in the district. The electricity and water supply need to be concentrated in the processing enterprises.

It is proposed to establish a common infrastructure facility and incubation center in the district for the handholding support of food processing enterprises in the district.

3.15 Financial Linkages

NRLM facilitates building a bridge for universal access to affordable cost effective reliable financial services to the poor through their SHGs and their federations. These include financial literacy, bank account, savings, credit, insurance, remittance, pension, and counseling in financial services.

Capitalizing institutions of the poor-

NSRLM provides Revolving Fund and Community Investment Fund (CIF) as Resources in Perpetuity to the institutions of the poor for meeting their credit needs for both consumption purposes and also for investment in livelihoods promotion. This fund is a corpus /capital resource for institutions of the poor. Largely this fund is used for on-lending to the SHGs for providing financial assistance. This also strengthens their institutional and financial management capacity and builds their track record to attract mainstream bank finance.

- Revolving Fund (RF) is provided to SHGs as a corpus to meet the members' credit needs directly and as catalytic capital for leveraging repeat bank finance. RF is given to SHGs that have been practicing 'Panchasutra' (Regular meetings; Regular savings; regular inter-loaning; Timely repayment; and Up-to-date books of accounts).

- Community Investment Fund is provided as Seed Capital to SHG Federations at the Cluster level to meet the credit needs of the members through the SHGs/Village Level Organizations and to meet the working capital needs of the collective activities at various levels.

- Vulnerability Reduction Fund (VRF) is provided to SHG Federations at the Village level to address vulnerabilities like food security, health security, etc., and to meet the needs of the vulnerable persons in the village.

Access to credit-

NSRLM expects that the investment in the institutions of the poor would leverage the bank credit of at least Rs.1,00,000 /- accessible to every household in repeat doses over the next five years. For this, SHGs go through Micro-Investment Plan (MIP)/Micro Credit Plan (MCP) process periodically. MIP/MCP is a participatory process of planning and appraisal at household and SHG levels. The flow of the funds to members/SHGs is against the MIPs. The rural poor need credit at a low rate of interest and in multiple doses to make their ventures economically viable. To ensure affordable credit, DAY-NRLM has provided interest subvention for all eligible SHGs to get loans at 7% per annum from mainstream financial institutions. Further, an additional 3% interest subvention is available only on prompt repayment by SHGs in most backward 250 districts. Making poor the '*preferred clients of the banking system and mobilizing bank credit*' is core to the DAY-NRLM financial inclusion and investment strategy.

SHG Credit linkage-

To facilitate bank linkages, State Level Bankers' Committees (SLBC) have constituted an exclusive sub-committee for SHG bank linkages and financial inclusion in NSRLM activities. Similarly, District Level

Coordination Committees and Block Level Coordination Committees review SHG-Bank linkages and NSRLM.

SHG members are fostered as Bank Facilitators (Bank Sakhi) to drive Financial Inclusion in their community. They facilitate close interaction between the community and the Bank Branch in addressing the financial needs of the SHGs, and for 100% recovery of loans through Community Based Recovery Mechanism (CBRM) positioned in the banks. CBRM is monitored by the 'Sub Committee on Bank Linkage and Recovery of Loans' under the Village Level Organization.

To ensure banking services is delivered at the doorstep of unbanked and underbanked area, SHG members are engaged as Business Correspondent (BC) as an alternate banking solution for the rural community.

NSRLM works towards increasing the portfolio of products of savings, credit, insurance (life, health, and assets), and remittance through the institutions of the poor directly or in partnership with mainstream financial institutions using various institutional mechanisms and technologies.

Source-"Nagaland State Rural Livelihoods mission", GoN.

3.16 Environmental Impact: no such impact

There is no negative impact on the environment in processing ginger powder and ginger candy. There are no harmful bi-products released in processing the ginger pickle and ginger candy in the district.

3.17 Cluster Actors

No. of skilled and semi-skilled Workers

Almost 193 workers are engaged in the ginger processing units out of which 98% are female workers. None of the employees working in the food processing enterprises received any training. There are no training facilities available for food processing enterprises in the district.

Manufacturers

Ginger processors are scattered throughout the district. The majority of the processing enterprises in the district are operating at the household level.

Unit Owners

Approximately 22 enterprises are operating in the district. The majority of the units in the district are primarily involved in ginger powder, ginger paste, and ginger candy processing.

Raw Material Supplier-

- Ginger crop growers are the raw material supplier

- Few SHG are involved in the crop production and the crop processing
- A sufficient amount of raw material i.e. ginger is available in the district

Enterprise Promotion Councils

An enterprise promotion council does not exist in the district.

Marketing Players

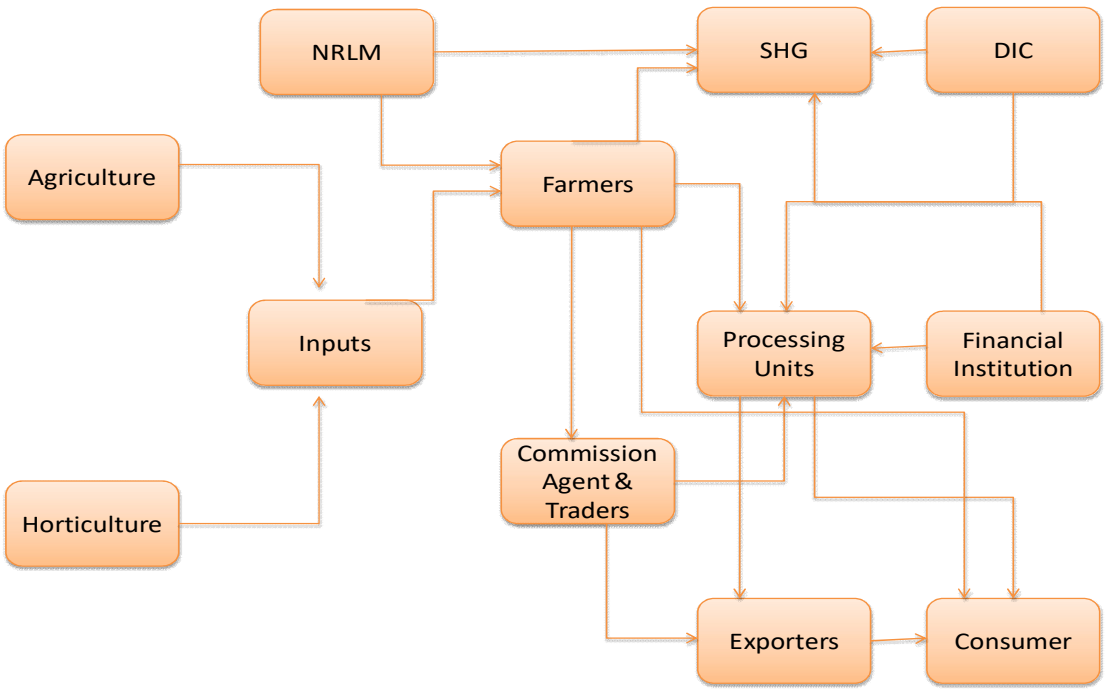
There are no major marketing players in the district. Farmers are selling the produce across the district and traders buy the produce from farmers and distribute it to other districts and states.

3.18 Existing Government Schemes

All schemes from MOFPI, Nagaland government, and Spice Board are mentioned in detail in point number 2.1, 2.2 & 2.3 of this document.

3.19 Cluster Map

The below-mentioned chart implies the stakeholder involved in the cluster.



3.20 Value Chain

The farmers are selling the produce to the local retailers and the traders in the district at discounted prices (20 to 25 INR Per Kg) and the traders are further selling the produce t the wholesalers (25 to 30 INR Per Kg) and the retailer (30 to 35 INR Per Kg) in the other district after the primary processing. A retailer in the district sells the produce to the consumer (35 to 40 INR per Kg) in the district.

Table 37: Value chain of the produce

S. No	Particulars	Activities	Purchasing price (Per Kg)	Selling price (Per Kg)	Difference in (Rs)
1	Farmer	Cultivation		20-25	
2	Trader	Primary processing, Storage, and Transport	20-25	25-30	5-10
3	Microprocessor	Processing (95% ginger pulp and 1 kg ginger candy from 0.385 kg ginger)	25-30	130-150	100-120
4	Retailer	Storage and distribution	130-150	160-170	10-20

Source- Primary survey

3.21 Product Cost analysis

It is estimated that INR 150.7 expenditure was incurred in processing 1-kilogram ginger candy. Revenue generated by selling ginger candy is INR 405. Net profit incurred in the processing of 1 Kg ginger candy is INR 254.26 with a B: C ratio of 1.7. 95% pulp is recovered from the ginger and 1 kg of ginger candy is recovered from the 0.385 ginger.

Table 38: Product cost analysis

S. No	Particulars	Cost per Kg
	Expenditure	
I	**Variable cost**	
	Raw material	30
	Ginger Murabba (95% pulp extraction)	32
	Sugar (1 Kg)	35
	Other raw material	1.5
i	**Total Raw material cost**	**98.5**
ii	Wages	1.6
iii	Electricity bill	1.6
iv	Packaging material	35
v	Transportation (Loading and Unloading charges)	5
	Total Variable cost	**147.6**
II	Miscellaneous	3.2

Table 38: Product cost analysis		
S. No	Particulars	Cost per Kg
	Total expenditure (Variable cost+ Miscellaneous)	**150.7**
	Revenue	
	The selling price of the Ginger Murabba	**150**
	Revenue (1kg Ginger Murabba from 0.385 Kg Ginger)	405
	Profit (Revenue- Expenditure)	254.26
	B: C Ratio	1.7

3.22 SWOT Analysis

Table 39: SWOT analysis	
Strength	**Weakness**
• Abundant availability of raw materials in the district. • Organic production of the ginger crop in the district. • Strong domestic demand for ginger paste, ginger powder, and ginger candy.	• The industry is small, unorganized, and scattered. • Lack of awareness about government promoting schemes and policies for the processors in the district. • Lack of funds and financial support to purchase advanced machinery and equipment like dryers, dehydrators, and peeling, and slicing machines for the processing enterprises. • No formal organization or cluster is available for Ginger processing units.
Opportunities	**Threats**
• Opportunity to create the brand for the ginger-based products in the district • Opportunity to upgrade the existing units with the support of schemes implemented by the state and central government • Tremendous scope for secondary processing like ginger paste, ginger powder, and ginger candy. • The product can be sold through exhibitions, events, online stores, and distributor networks. • There is tremendous scope to cater to foreign markets for the export of value-added products of ginger.	• Competition from the settled brands in the market. • The quality and the safety standards of the micro-processing units are a challenge • Huge fluctuation in the raw material cost.

4. Benchmark Studies

The success story of Dry Ginger in Kandhamal District of Odisha State

Name: Mr. Maheswar Sahu
Village: Pingali
Block: Daringibadi
District: Kandhamal
Age: 45
Gender: Male
Caste: OBC
Education: 9th class
Occupation: Farming

Mr. Maheswar Sahu son of Mr. Raghunath Sahu, a native of Pangali village has 6 acres of his own Patta land and his main occupation is farming. Being intervened by the NAIP team, he was motivated to take up ginger cultivation. He adopted the package of practices recommended by the NAIP team and in the first year itself could harvest 100 quintals of ginger from 10 quintals of seed planted in his field. He also attended training imparted by the project and was interested in preparing dehydrated products from ginger. He processed 67 quintals of green ginger and got 10.8 quintals of flakes. His field was also certified for organic cultivation from the CUC, Holland and thus from the dehydrated ginger, he earned INR 2.16 lakhs.

He invested a portion of his disposable income in a grocery shop and the rest amount for food, health, and education of his family members. He increased the area of ginger in subsequent years. He has now become an example of a successful entrepreneur in the area. He is now convinced that value addition to raw ginger would fetch more income and will help avoidance of distress sales in the area.

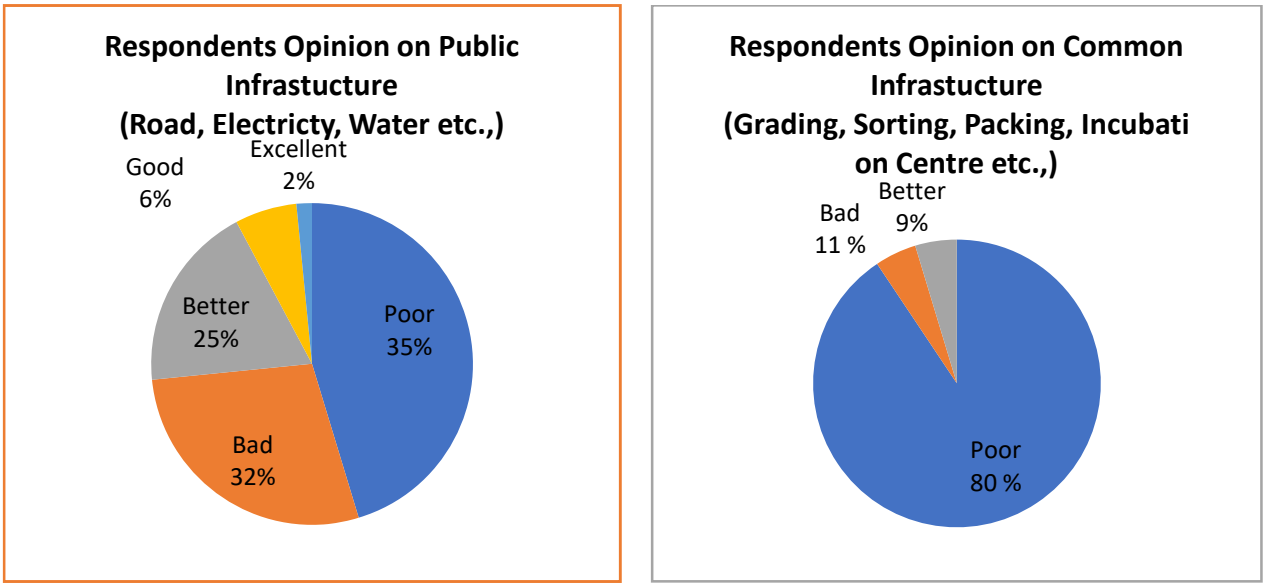
5. Stakeholder Consultation

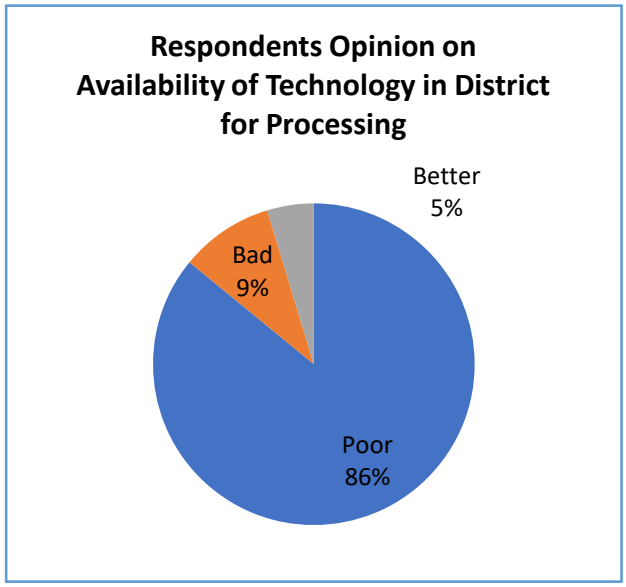
Individual Meetings –

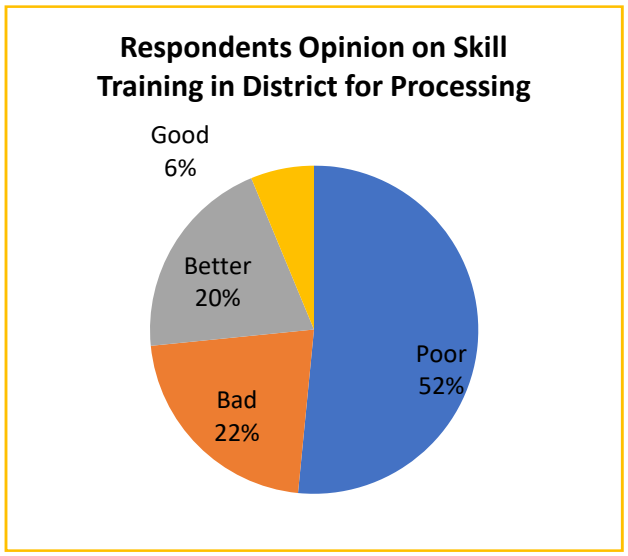
A Survey of 22 ginger processing units is done through face-to-face meetings. To understand their perspective about business & other factors related to processing industries. All the information mentioned in the questionnaire is filled in individual meetings.

Below pie chart is prepared based on the opinion of respondents on existing public infrastructure, common infrastructure, availability of technology, and skill training for ODOP product

Figure 11: Respondents' responses chart







Agenda Points & discussions

The points discussed are:

- Availability of technology
- Scope for processing
- Common Infrastructure facilities
- Logistic
- Branding and Marketing

Minutes of Meeting with Various Stakeholders:

- The processing is happening at a very small scale and small processors have adopted the traditional method of processing.
- The availability of new technology or modern method of processing (using semi-automated and automated machinery) is lacking.
- There is no availability of common infrastructure facilities such as incubation centers, grading, sorting, and packing facilities for the processing enterprises.
- Transportation is a huge problem in the district due to a lack of better road connectivity within the district and to other districts
- The marketing of products is a challenge in the district due to logistic problems and due to lack of marketing linkages.
- There is a huge scope for organic ginger production in the district as well as in nearby districts
- There are no skill development training facilities available for processing enterprises and there is a huge requirement for skill training and development for micro and small processors
- The majority of the micro and small processors are selling value-added products without brand. They require training and exposure to build the brand, logo, and knowledge on labeling and packing of the produce.

6. Need Assessment and Gap Study

Table 40: Need assessment and Gap Study

Gaps	Remarks
Limited Processing lines	• Dried ginger and powder ginger are the only processed products in the district. Very few quantities of ginger candy and ginger paste are processed in the district. • It is suggested to increase awareness among the processors about the other processing line like ginger oil, and ginger paste and necessary benefits can be provided to the processors to increase the quantity of crop processing in the district. • It is suggested to promote the ginger crop produced in the district as the 'Organic' produce and can cater premium segment of the market.
Technology	• There is no use of advanced technology or machine-like Automatic peeling machine, slicing machines, dryers, dehydrators, grinders, sieving machines, and packaging machines. • It is suggested to provide the machinery for the processing enterprises at subsidized processes to increase the quantity of crop processing in the district.
Infrastructure	• The good quality road is the basic infrastructure required for the processing enterprises in the district. • Due to poor quality of roads, transportation for the product is getting affected. • It is suggested to construct better roads to increase the exporting of ginger crops and processed ginger-based products from the districts to other districts and states.
Testing Facilities	• There are no proper testing labs in the Longleng district. The majority of the enterprises in the district are not certified by the FSSAI. It is proposed to set up the FSSAI testing lab in the district.
Skill Training	• There is a shortage of skilled labor in the processing industries. • The areas to be covered in Training and marketing are the Standardized process of processing, Packaging of the produce, branding, and marketing of the processed products, and Handling the advanced machinery and equipment like Automatic peeling machines, slicing machines, dryers, dehydrators, grinder, sieving machines, and packaging machines and processing the products according to the FSSAI standards.
Marketing	• The majority of the products processed in the district are consumed in the district itself. There are no marketing facilities available for processing

Table 40: Need assessment and Gap Study	
Gaps	**Remarks**
	enterprises in the district. • There is a strong need to market the product through various channels like events, exhibitions, online marketing, etc. • It is proposed to create a brand and market for the products in the district. • For branding, there is an umbrella brand, being driven by NSAMB, i.e. "Naturally Nagaland", which is a way of promoting the "Organic" brand of Nagaland.
Cluster	• All the food processing industries in the district are scattered in the district. There is no formal cluster for ginger commodities in the district as there is no existing infrastructure. • There is enough scope for ginger processing in the district due to the abundant availability of raw materials and demand for ginger powder, ginger paste, and ginger candy in the district and the country.

Rating of Response Count (Based on Primary Survey)

Rating 1 is considered as poor and Rating 5 is considered excellent.

Table 41: Rating of the infrastructure in the district							
S. No	**Particular**	**Response Count**					**Total**
	Ratings	**1**	**2**	**3**	**4**	**5**	
1	Public infrastructure such as roads for backward and forward linkages	22	0	0	0	0	22
2	Access to common facilities such as grading, sorting, packaging, cold chain facilities, etc.	6	16	0	0	0	22
3	Access to testing facilities	19	3	0	0	0	22
4	Compliance with standards and the frequency of inspections from the safety regulators	13	8	0	1	0	22
5	Skill training needs	0	3	6	8	5	22
6	Manufacturing practices	10	11	1	0	0	22
7	Technologies Available	20	2	0	0	0	22
8	Access to finance	13	9	0	0	0	22
9	Access to mentorship/ service	2	19	1	0	0	22
10	Awareness of Govt Policies among micro /small manufactures	1	18	3	0	0	22
11	Awareness of ODOP products in the District	3	19	0	0	0	22
12	Marketing/sales facilities	15	6	1	0	0	22
13	Facilities for the workers	19	3	0	0	0	22

Public infrastructure such as roads for backward and forward linkages – All respondents rated it on a scale of 1, which means it is in poor condition & needs to look into it on a priority basis.

Access to common facilities such as grading, sorting, packaging, cold chain facilities, etc – Facilities like cold storage, and warehouses are not available in the district for the processing enterprises.

Access to testing facilities – The majority of respondents mentioned there is a need for testing facilities in the district.

Compliance to standards and the frequency of inspections from the safety regulators – The majority of respondents expressed that they are not undergone any kind of inspection concerning safety regulators

Skill training needs – The majority of the respondents suggested that there is a need for training facilities in the district to train the existing and the new employees in the food processing enterprises.

Technologies Available There is a lack of technology and a lack of advanced machines in the units.

Access to finance – The majority of the respondents suggested that there is a lack of access to finance in the district. Major enterprises want to expand the existing enterprise but are unable to do due to a lack of financial support in the district.

Access to mentorship/ service – Most of the respondents mentioned the need for mentorship to upgrade their business and explore the new market. It is suggested to establish an incubation center in the district to support the existing and new enterprises in the district.

Awareness of Government Policies among micro /small manufacturers – There is no awareness of any government schemes promoting food processing policies in the district. It is suggested to advertise and promote the schemes and the policies implemented in the district.

Awareness of ODOP products in the District –The majority of respondents are aware of ODOP in the district.

Marketing/sales facilities – Most of them expressed that they need proper training in marketing & branding to improve their business.

7. Recommendations

7.1 Project strategy and interventions

Context of ODOP Processing (Ginger and Allied Products)

As part of our primary survey, we interviewed the above 22 food processing units that are involved in processing ginger-based products like ginger candy, ginger paste, and ginger powder. The processed products are sold to the consumers through local retailers and traders in the district and other districts. It is estimated that only 2% of the total crop produced in the district is processed into other commodities like ginger paste, powder, and candy. Few enterprises are exporting dried ginger to other districts and other states through the existing traders and wholesalers.

Table 42: Proposed number of enterprises

S. No	Particulars	Commodities	Number of units
1	ODOP (Existing Enterprises-Primary processing)	Ginger based products	22
2	Non-ODOP (Individual Potential Enterprises)	Pickles- Naga chili, bamboo pickle, Fish pickle, and Meat pickle. Turmeric based products Tapioca-based products Maize-based products Rajma based products Roselle based products Zanthoxylum based products Bakery based products	89
3	Non-ODOP (Group Potential Enterprises)	Pickles- Naga chili, bamboo pickle, Fish pickle, and Meat pickle. Turmeric based products Tapioca-based products Maize-based products Rajma based products Roselle based products Zanthoxylum based products Bakery based products	11
	Source-Primary Survey		

Proposed fund allocation:

A total of INR 21.2 Cr. fund is proposed for the Longleng district for the up-gradation of 122 existing and new units in the district. Among the total fund, INR 11.8 Cr. fund is proposed to upgrade the 111

individual units and 1.18 Cr. fund is proposed to upgrade the 11 groups in the district. It is proposed to establish one incubation center and one common infrastructure in the district. INR 1.3 Cr. and 0.12 Cr. fund is proposed for the branding and marketing and training and mentorship for the existing and new potential processing enterprises in the district.

Table 43: Proposed fund allocation

Intervention	Target	Amount (Cr.)
Capital investment in plant and machinery (Individual units)	To upgrade and scale up in the production process for 111 Micro Units (The average fund required per unit is 10.67 lakhs)	11.84
Capital investment in plant and machinery (Group units)	To upgrade and scale up the production process for 11 Groups (The average fund required per unit is 10.67 lakhs)	1.18
Incubation center	One incubation center (IC) is proposed for the district. Cost per IC 2.75 Cr.	2.75
Common infrastructure	One common infrastructure facility (CIF) is proposed for the district. Cost for the CIF 4.0 Cr.	4
Branding and Marketing	Common Branding and Marketing for both Individual units and Groups	1.3
Training and Mentorship	Training and Mentoring for Entrepreneurship. Training on New Technology for a total of 122 individuals. (2 people to be trained from each enterprise/group)	0.12
Total		**21.19**

Proposed Government assistance under the SLUP:

A total of INR 21.2 Cr. fund is proposed for the Longleng district for the up-gradation of 122 existing and potential new units in the district. INR 9.43 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Table 44: Proposed Government assistance under the SLUP

Intervention	Target No. of units	Project cost per unit (Cr.)	Total Cost (Cr.)	Subsidy per unit	Govt. assistance (Cr.)
Capital Investment in Plant and Machinery (Individual units)	111	0.107	11.84	35%	4.15
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	11	0.107	1.17	35%	0.41
Common Infrastructure	1	4.00	4	35%	1.4
Incubation Cum Custom Hiring Centre	1	2.75	2.75	100%	2.75
Branding and Marketing (Total no. of Units/group)	122	0.011	1.30	50%	0.6

Table 44: Proposed Government assistance under the SLUP					
Intervention	Target No. of units	Project cost per unit (Cr.)	Total Cost (Cr.)	Subsidy per unit	Govt. assistance (Cr.)
Training and Mentorship (No. of the individual)	122	0.0001	0.12	100%	0.12
Total			**21.2**		**9.43**

7.2 Vision Statement and Key Objectives for SLUP

Vision Statement: To increase the quantity of ginger crop processing from the existing 2% of the total crop processing to 5 to 10% of the total crop production in the district in the coming 3 to 5 years.

Objectives:

- Training and financial support to the existing individual and group units in the district.
- Promoting new enterprises in cardamom processing.
- Creating branding and marketing opportunities for processed products in the district.
- Creating a common facility center for the processing units.

7.3 Strategy for Integrated Development

Integration of stakeholders such as agriculture, horticulture, marketing, financial institution, industries, associations, testing agencies, traders, farmers, and processors are necessary to start the cluster.

Table 45: Strategy for integrated development		
Particulars	Requirement	Supporting Department/Agencies
Marketing	• Training and Skill Development • Packaging, Labeling, and Branding • Qualitative and Quantitative Testing	• DIC and Financial institutions should support Packing, labeling, and branding. • FSSAI should involve in the certification and licensing of the product.
Infrastructure	• Common infrastructure such as a washing unit, grading and sorting unit, and cold storage are required.	• Support from DIC, the state horticulture department, and financial institutions is required for the establishment of the required infrastructure.
Workers	• Training on Post Harvest Management, Processing Technology, and Handling of Machinery	• DIC should train the workers in handling machinery. • Agriculture, Horticulture, and NRLM should train the workers on post-harvest management and processing technology.

Table 45: Strategy for integrated development		
Particulars	**Requirement**	**Supporting Department/Agencies**
Innovations	• Knowledge of building own branding • Digital Marketing • Development of Mobile App, for example, TRIFED developed a mobile app to promote their business	• DIC should organize workshops and train them on how to create their brand. • Support from State and Central governments is required to build a mobile app and digital marketing.

7.4 **Proposed Interventions**

We have proposed a total fund of 21.2 cr. for the up-gradation of existing and new enterprises and the setting of a common facility center and incubation center in the district. We have proposed a budget of 1.3 cr. for the branding and marketing support for the group and individual units in the district.

Table 46: Proposed interventions			
S. No	**Particulars**	**Recommendations**	**Cost (Cr.)**
1	Infrastructure	Proposed one incubation center in the district with 3-4 processing lines and hand-holding support for the existing and new enterprises in the district.	2.75
2	Technology	Proposed up-gradation of the 122 enterprises in the district (Group and Individual units)	11.8
3	Common facilities	Proposed one common facility center and one incubation center in the Longeleng district to increase the quantity of crop processing in the district and to reduce crop loss post harvesting.	4.00
4	Marketing support	Proposed training on marketing and branding of processed products in the district.	1.3
	Total		**23.25**

Individual units (Existing and Potential enterprises) – From the primary survey, (existing individual and potential units) it is observed that approximately 89 new potential enterprises are interested in the food processing business in the district.

Respondents of individual units expressed that there is a lack of funds for upgrading the existing units and a lack of guidance and the necessary funding for the new enterprises to enter the food processing business in the district.

Groups – There are no FPOs or cooperatives involved in processing the ginger crop in the district. Few SHGs are actively involved in the primary processing of the ginger crop and selling it to local retailers. 1.18 Cr. fund is proposed for the groups in the district to purchase the new machinery, skill development, branding, and marketing of the produce.

Common infrastructure – Common infrastructure facilities like cold storage structures, warehouse facilities, and pack houses are essential for the processing enterprises (Primary processing and secondary processing)

A fund of 400 lakhs is proposed to establish the common facility center in the district.

Marketing and branding- the majority of the processing units in the district are not selling ginger paste, powders, and candy through brand and there is no special marketing for the processed produce. All the units in the district are selling the products through the existing sales channel only.

A fund of 1.3 cr. is proposed to create the brand and marketing for the processed products in the district.

Training and skill development- Through the primary survey, we have observed that none of the ginger processing enterprises received training on processing the crop. Skill development training is essential in handling the machinery, and the standardized process of processing and packaging the produce.

A fund of 12 lakhs is proposed for the skill development of the employees working in the local food processing enterprises.

8. Key Impacts

Table 47: Key Impacts

Particulars	Impact
Opportunity to increase processing activity	• Through support under the PMFME scheme, there is a possibility of an increase of 10% to 15% processing of total crop production in the district in the next three to five years.
Employment	• Each unit will employ 4-5 members on average i.e. approximately 450-600 employments will be created in the next three years with the help of the PMFME scheme.
Income	• Through proper branding and marketing, the net profit of units will increase by 25%-35 %
Reduce waste	• Through processing and common infrastructure, farm-level waste might reduce to 5 % from current 10 %
Better Profits	• Micro Units can expect a 25 % increase in profits with Better market linkages and Branding
Better Price Realization	• An export window will be opened to micro and small entrepreneurs. Better price realization can be observed by micro and small entrepreneurs' by exporting turmeric powder to major importing countries in the world.

Annexure:

Detail List of FPOs for assessment under PM-PME in Longleng District

S. No	Name of the FPO	Location	Contact details	Total No. of Registered members	Produces/ Products manufactured
1	Ngochai Agri & Allied CS Ltd., PPC Ward	Longleng	Smti. Nyumei 9612015201	30	Dried Bamboo Shoot, Fruits Pickle, Chilly pickle, fruit jam
2	Yongmao frui & Vegetable Marketing CS Ltd.,	Dungkhao village, Longleng	Shri. Benkau 9612015201	25	Wild Apple pickle, Dried yam leaves, Mango Pickle
3	Aokla Fruit & Vegetable Marketing CS Ltd.,	Tamlu Town, Longleng	Smti. Bongjai 8731983567	30	Mustard oil, Pineapple juice, Oil cake, Orange juice, Mango pickle, wild apple etc

The Nagaland State Co-Operative Marketing & Consumers' Federation (Marcofed) Ltd.,H.O. Dimapur

The Nagaland State Co-operative Marketing & Consumers' Federation Ltd. popularly known as MARCOFED is an Apex Level Co-operative Institution for Marketing of Agricultural produces and distribution of essential commodities in the State which was established in the year 1968 under the sponsorship of the State Govt. as a public sector undertaken with its Registration No. NL/0222 Dt. 17-08-1968 and based in Dimapur as its Head Office, Nagaland.

Total Number of Cooperative Societies as On 30.01.21.

S. No	Type of Society	Kma	Dmp	Mkg	Tsg	Wka	Zbto	Phk	Mon	Peren	Kpre	Lglg	Mba	Pftr	Stk	Total
A		State Level Societies														
1	Nagaland State Cooperative Bank Ltd.		1													1
2	MARCOFED Ltd.		1													1
3	Nagaland State Coop. Union		1													1
4	Nagaland Apex Weavers Federation		1													1
5	Nagaland State Piggery Federation		1													1
6	Nagaland State Dairy Federation	1														1
7	The Nagaland State Entrepreneurs Associates Thrift & Credit Coop. Federation Ltd.	1														1
		2	5													7
B		District Level Societies														
1	Kohima Dist. Milk Union	1														1
2	Dimapur Dist. Milk Union		1													1
3	Mokokchung Dist. Milk Union			1												1
		1	1	1												3
C		Primary Cooperative Societies (District Wise)														
1	Lamps C.S. Ltd.	-	1	-	-	-	-	-	-	-	-	-	-			1
2	Consumer C.S. Ltd.	68	24	24	31	9	25	21	12	6	11	2	7	1	-	241
	1. Petrol Pump C.S. Ltd.	-	-	1	-	-	-	-	-	-	-	-	1	-	-	2
3	Service C.S. Ltd.	-	37	16	-	9	4	2	1	6	-	-	4			79
	Institution C.S. Ltd.	-	1	-	-	-	1	-	-	-	-	-	-			2
	Transport C.S. Ltd.	-	2	1	2	-	-	-	-	-	-	-	-			5
	Canteen C.S. Ltd.	-	-	1	-	-	-	-	-	-	-	-	-			1

Longleng District Up-Gradation Plan | 2022

S. No	Type of Society	Kma	Dmp	Mkg	Tsg	Wka	Zbto	Phk	Mon	Peren	Kpre	Lglg	Mba	Pftr	Stk	Total
	Education & Training C.S. Ltd.	1	-	-	-	-	-	-	-	-	-	-	-			1
	Dry Cleaners	1	-	-	-	-	-	-	-	-	-	-	-			1
4	Multi Purpose C.S. Ltd.	854	974	320	249	426	287	231	97	104	160	35	118			3855
5	Marketing C.S. Ltd.	10	28	19	28	5	9	13	3	2	5	1	1			124
	Trading	-	-	1	-	-	-	-	-	-	-	-	-			1
6	Weaving & Handloom/Knitting /Handicraft /Industrial C.S. Ltd.	127	155	37	49	43	76	34	40	22	26	12	7	-		628
7	Dairy C.S. Ltd.	37	58	13	25	6	20	30	17	7	9	1	2		1	226

List of SHGs in Longleng District

S. No	Name Of The SHG	Location	Contact Details	Total No. Of Registered Members	Produces/ Products Manufactures	Marketing Details Of Produce/Product	Scale Of Production (Inmt)
1	Oudongla	Tamlu Village	7005835860	9 Members	Banana Chips	20 For Banana Chips,100 For Bundle	50-100 Kg
2	Bongjai (Bangsangla)	Tamlu Village	8731983567		Oil,Axone	Axone-20,Oil-150	50kg
3	Bauom(Likonla)	Tamlu Village	7005958578		Haldi,Dry Shoot,Watershoot	1 Packet Of Haldi Rs.20,Bambooshoot Rs.50	100kg
4	Bongnyei (Pehephangla)	Tamlu Village			Produces As Vegetables	Sold As Per The Rate Of Market	200kg
5	Shemlu(Phangla)	Tamlu Village		10	Tapioca Chips	Rs.20,M-Rs.100	Mushroom 200 Kg
6	Konai(Lemkonla)	Tamlu Village			Pickel,Egg	Rs.150-200,Per Piece Of Egg-7	Chicken-500kg
7	Nyeinyu (Pehephangla)	Tamlu Village			Various Biscuits	Rs.20	Maida 100 Kg
8	Yanlem (Bangshangla)	Tamlu Village			Sold In The Market	Rs.50/Kg	200kg
9	Nyiemthai (Oudongla)	Tamlu Village			Boil,Anishi Etc.	Rs.30,Rs.20	150 Kg
10	Avau(Monglemla SHG)	Netnyu	8132834387	1	Pickles Of Gooseberry,Myrica,Mango	Rs.20-50 Per Packet.Rs.50-100 /Pecket Of Bambooshoot.	300 Bundle,150-200 Kg,75

S. No	Name Of The SHG	Location	Contact Details	Total No. Of Registered Members	Produces/ Products Manufactures	Marketing Details Of Produce/Product	Scale Of Production (Inmt)
							Litre.
11	Chingjela SHG	Kangching	8974288174	2	Biscuits	Rs.20-40 /Packet	10kg
12	Yungli(Mongshenla SHG)	Kangching	8974746202	1	Beef Pickles,Dryfish	Rs 20-50 /Packet Of Beefpickle& Dryfish ,Rs50-100 /Packet Of Treebean.	5kg,10kg And 10 Bundle
13	Doinyei(Choila SHG)	Kangching	7085407424	1	Pickle.	Rs 50/Packet	150 Kg
14	Vaulong(Konom SHG)	Kangching	8730083309	1	Pickle.	Rs20-50/Packet	10 Kg
15	Lihola SHG	Kangching	8730958301	7	Dry Fish Pickle	Rs 30/Packet	3 Kg
16	Loishing(Khangkala SHG)	Kangching	9862606860	1	Beef Pickle	Rs.20-50 /Packet	2
17	Chingku	Yangching	8416059238	8	Ginger, Sticky Rice	Rs. 20 (Bundle Of Ginger)	100 Kg(Ginger)
						Rs.30 (Packet 0f Biscuit)	100-120 Kg Of Rice
18	Chingmei	Yangching	8730018056	7	Soyabean/Axone	Rs.20(Packet Of Axone)	50-60 Kg
19	Pheitan	Pongo	8974463698	8	Yam, Ginger	Rs.40 /Kg Of Yam	120 Kg Of Yam
						Rs. 20(Bundle Of Ginger)	80kg Of

S. No	Name Of The SHG	Location	Contact Details	Total No. Of Registered Members	Produces/ Products Manufactures	Marketing Details Of Produce/Product	Scale Of Production (Inmt)
							Ginger
20	Yinglong	Pongo		9	Beans, Sticky Rice	Rs.40 /Kg Of Yam	150 Kg Of Yam
						Rs. 100/Kg Of Rice	100 Kg Of Rice
21	Chingkang	Auching	7630994954	10	French Bean	Rs.1200/Tina	10 Tina
22	Heptu SHG	Hukphang Village	8732008581	10(Ten)	1.Seasonal Fruit Juice Like Pineapple Juice, Pear Juice, Orange Juice	1. Seasonal Fruit Juices(Rts)-Rs 20 Per Bottle(200ml)	Pineapple Juice-100 Litres
					2.Banana Chips And Tapioca Chips	2.Banana Chips Rs 20(100 Gm),	Pear Juice-70 Litres
					3.Pickles-Bamboo Shoots, Gooseberry, King Chilly, Ginger And Mango Pickle	Tapioca Chipsrs 20(100 Gm)	Orange Juice-60 Litres
					4.Candy- Ginger Candy And Pineapple Candy	3.Pickles-Bamboo Shoots-Rs 120(200 Gm Glass Bottle), Gooseberry- Rs 120 (200 Gm Glass Bottle), King Chilly-Rs 200 (200 Gm Glass Bottle), Ginger - Rs 120(200 Gm Glass Bottle), And Mango Pickle- Rs 120 (200 Gm Glass Bottle),	Banana Chips-40 Kg

S. No	Name Of The SHG	Location	Contact Details	Total No. Of Registered Members	Produces/ Products Manufactures	Marketing Details Of Produce/Product	Scale Of Production (Inmt)
					5.Baking-Sticky Rice Cake,Tapioca Cake And Cookies	4.Ginger Candy-Rs 20 (30 Gm)	Tapioca Chips-30kgs
						Pineapple Candy-Rs 10(50 Gm)	Bamboo Shoot Pickle-30kgs
						5. Sticky Rice Cake-Rs 120(400 Gm)	Gooseberry Pickle- 10kg
						Tapioca Cake-Rs 120(400 Gm)	King Chilly Pickle-8 Kg
						Cookies-Rs 20(200 Gm)	Ginger Pickle-30kg
23	Ngahdang SHG	Pongching Village	8974246051	1	1.Banana Chips	1banana Chips Rs 20,	1. 100 Packets
					2.Baking-Banana Cake And Cookies	2.Banana Cake-Rs 40 And Cookies Rs 50 (Per Packet)	2. 5 Kgs
24	Metmoi SHG	Orangkong Village	8119824420	1	1.Banana Cake	1.Rs 40	1.10 Kg
					2pumkin Cake	2.Rs 40	2.10kg
					3.Cookies	3rs 50	3.10 Kg
25	Shonela SHG	Orangkong Village	8837382284	1	1.Green Chilly Pickle	1.Rs 20 Per Packet	1.60 Packets

S. No	Name Of The SHG	Location	Contact Details	Total No. Of Registered Members	Produces/ Products Manufactures	Marketing Details Of Produce/Product	Scale Of Production (Inmt)
					2.King Chilly Pickle	2.Rs 60 Per Bottle	2.60 Bottles
					3.Banana Cake	3.Rs 100	3.20kgs
					4.Bamboo Shoot Pickle	4.Rs 100 Per Packet	4.70 Packets
26	Yaushi SHG	Orangkong Village	8974062303	1	1.Banana Chips	1.Rs 20 Per Packet	1.100 Packets
27	Chungteple SHG	Yaongyimchen Village	8974489829	1	1.Sticky Rice Biscuit	1.Rs 20 Per Packet	1.50 Packets
28	Sungtok SHG	Yaongyimchen Village	8974355355	6	1.Meat Pickle	1.Rs 50 Per Packets	1.70 Packets
29	Lemsachenlok Integrated Multipurpose C.S Ltd.	Yaongyimchen ,Alayong,Sanglu Village	8974121537	82	1.Fermented Colocasia Cake (Hampangnyu)	1.Rs 500 Per Kg	1.Fermented Colocasia Cake (Hampangnyu)-350-500 Kgs (One Year)
					2.Dried Bamboo Shoot		2.Dried Bamboo Shoots-500-800 Kgs (One Year)

THANK YOU

TRANSGRAPH
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