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SLUP

(STATE LEVEL UPGRADATION PLAN)

for

KIPHIRE DISTRICT
IN THE STATE OF NAGALAND

Prepared by

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Executive Summary

In the Kiphire district, the major crops cultivated are Jhum paddy, Maize, WTRC paddy, Rajma/ Kholar, Rapeseed, Soybean, and Cabbage. Beans, Kinnow/ Mandarin orange, Banana, and Ginger.

In 2019-20, the total area under the crops in the districts is 34.4 thousand ha with the production of 113.15 thousand tons. Major crops like pulses, cereals, and oil seeds are cultivated in the area of 28.0 thousand ha with a production of 55.7 thousand tons. Fruit crops and vegetable crops are cultivated in the area of 2.7 thousand ha and 2.1 thousand ha with the production of 30.9 thousand tons and 20.6 thousand tons respectively. Spice crops are cultivated in the area of 1.78 thousand ha with a production of 1.6 thousand tons. Jhum paddy, Maize, and WTRC Paddy are the major crops in the district that are cultivated in the area of 8.43 thousand ha, 7.5 thousand ha, and 3.7 thousand ha with the production of 16.7 thousand tons, 15.0 thousand tons, and 10.7 thousand tons respectively.

In the Nagaland state, the rajma crop is cultivated in an area of 17.1 thousand ha with a production of 21.9 thousand tons. Kiphire district contributes 19.3% of the total area under the rajma crop with the production of 19.3% of the total crop production in the state.

Rajma crop is the ODOP of the Kiphire district and the maize-based products thanamir apple-based products, ginger-based products, banana-based products, gooseberry-based products, pickle-based products (Meat pickle, Gooseberry pickle, Fish Pickle), and bakery-based products are the potential enterprises in the district. 21 enterprises are surveyed in the district involved in the primary processing of the rajma crop in the district. It is estimated that 130 to 150 unregistered food processing enterprises are operating in the district and approximately 400 to 550 employees are working in the unregistered food processing enterprises.

Cluster- All the food processing enterprises are scattered in the district. Potential clusters for the rajma crop in the district are Langkok, lonhthongre, Anatongre, Pungrung, Longmatra, Amahator, Salomi, Pruvkin, and Chikiponger.

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 rajma crop in the district are using advanced machinery and equipment like vibrating pre-cleaner, de-stoner, magnetic separator, gravity separator, color sorting machine, and packaging machine. All the enterprises in the district are manually processing the rajma crop in the traditional method without the usage of the machinery and types of equipment. It is estimated that approximately, only 55 to 60 tons of the total 4237 tons of crop produced in the district is primarily processed and the rest of the crop is used for household purposes and exported to other districts and states through wholesalers and retailers in the district. It is proposed to provide machinery like vibrating pre-cleaner, de-stoner, magnetic separator,

gravity separator, color sorting machine, and packaging machine at subsidized prices under the PMFME scheme for processing rajma 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 (Maize base products, thanami apple-based products, ginger-based products banana-based products, and Pickle based products)

4. Lack of marketing facilities: The rajma grown in the Nagaland state is known for their organic cultivation and the Kiphire district is one of the largest producers of rajma crops in the Nagaland state. Farmers and traders are selling the primarily processed rajma crop 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 the rajma crop and the value-added products of the rajma crop 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 rajma flour and canned rajma, 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 packed 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 25.4 Cr. fund is proposed for the Kiphire district for the up-gradation of 128 existing and new units in the district. Among the total fund, INR 15.5 Cr. fund is proposed to upgrade the 116 individual units and 1.63 Cr. fund is proposed to upgrade the 12 groups in the district. It is proposed to establish one incubation center and one common infrastructure in the district. INR 1.3 Cr. and 0.13 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 the production process for 116 Micro Units (The average fund required per unit is 13.4 lakh)	15.5
Capital investment in plant and machinery (Group units)	To upgrade and scale up the production process for 12 Groups (The average fund required per unit is 13.4 lakh)	1.63
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.	4.00
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 128 individuals. (2 people to be trained from each enterprise/group)	0.13
Total		**25.4**

Expected Government assistance:

A total of INR 25.4 Cr. fund is proposed for the Kiphire district for the up-gradation of 128 existing and potential new units in the district. INR 10.90 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Expected Government assistance					
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)	116	0.134	15.50	0.35	5.43
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	12	0.129	1.55	0.35	0.54
Common Infrastructure	1	4.00	4	0.35	1.4

Expected Government assistance 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	1	2.75
Branding and Marketing (Total no. of Units/group)	128	0.010	1.30	0.5	0.65
Training and Mentorship (No. of the individual)	128	0.0010	0.13	1	0.13
Total			**25.4**		**10.90**

By 2025, with the support of the PMFME scheme, the processing percentage of respective commodities processing may go up. Nearly, 600 to 700 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 Kiphire district of Nagaland state of India.

Sampling Technique and Sample Size adopted

Sampling Technique - Multistage random sampling technique was adopted.

Sample Size

21 Units of food processing enterprises in the district are surveyed.

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 countries in the production of Rajma beans. It is locally called Kholar beans. The survey was conducted in various Kholar processing units located in the Kiphire 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 Kholar beans

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:

The areas under the Kiphire district were part of the 'North Eastern Frontier Agency' (NEFA) as part of the Tuensang area. This part of the state remained untouched by the British colonial administration even after its neighboring areas were subjugated during the 1920s. Though it was included within the category of Naga tribal areas under Assam and placed under political control, practically, there was neither sign of political control nor any administration till the transfer of power in 1947. In the wake of the expansion of civil administrative outposts, a survey for the opening of administrative headquarters was done in 1951. The survey team was led by Shri. H. Zophianga, the then Assistant to Deputy Commissioner of Tuensang, visited the present Kiphire HQ. The land was donated by Kiphire and Singrep villages and subsequently, on 16th June 1952, the Southern Administrative sub-division was established at Kiphire with Shri. S.D. Lakhar as the first Base Area Superintendent. Kiphire remained under Tuensang district as an administrative sub-division till it was bifurcated from Tuensang district and was inaugurated as the eleventh district of Nagaland on 24th January 2004.

Demographics

Kiphire is the ninth district of Nagaland which was carved out of Tuensang on January 24th, 2004, by upgrading the Sub-Division of Kiphire to a fully-fledged district. It shares its borders with Tuensang in the north, Phek in the west, and Myanmar to the east. It is headquartered in Kiphire town, which is at an altitude of 896m MSL. The other towns are Seyochung, Sitimi, and Pungro. Kiphire has the distinction of having Nagaland's highest peak mount Saramati (3,841m MSL), Fakim Wildlife Sanctuary, and the Likhimro MiniHydro power station. Recently Kiphire has come to the forefront for its exquisite apple produce at Thanamir village. Another vital source of food is the traditional harvesting of honey from rock bees located in Mimi village. The predominant tribes of the district comprise the Eastern Sangtam, Yimchungru, and Sumi.

Table 1: Demographic Profile of the district

Demographic Label	Value
Location	25°54'N 94°47'E
Area	1255 Sq. Km
Boundary	Tuensang (North); Myanmar (East); Zunheboto (West) and Phek (South);
Recognized Village	104
Total Population	74,004 (As per Census, 2011)
Female	36,174
Male	37,830
Sex Ratio	956 females per 1000 males (as per Census 2011)
Population Density	65 per Sq. Km (as per Census 2011)
Literacy	69.5 % (as per Census 2011)
Recognized Tribes	Sangtam, Yimchunger, Sumi
Language	Sangtam, Yimchunger, Sumi

A. Agriculture Profiling of the Districts in the State

In 2019-20, the total area under the crops in the district is 34.6 thousand ha with the production of 113.3 thousand tons. Pulses, cereals, and oil seeds are cultivated in the area of 28.2 thousand ha with a production of 59.9 thousand tons. Vegetables and fruit crops are cultivated in the area of 2.1. thousand ha and 2.7 thousand ha with the production of 20.6 thousand tons and 30.9 thousand tons respectively. Spice crops are cultivated in the area of 1.7 thousand ha with a production of 1.6 thousand tons.

Jhum paddy, maize, and WTRC paddy are the major cereal crops cultivated in the area of 8.4 thousand ha, 7.5 thousand ha, and 3.7 thousand ha with the production of 90.8 thousand tons, 126.1 thousand tons, and 69.1 thousand tons respectively. Cabbage and beans are the major vegetable crops in the area of 0.45 thousand ha and 0.35 thousand ha with the production of 5.4 thousand tons and 2.1 thousand tons respectively. Mandarin and Banana are the major fruit crops cultivated in the area of 0.61 thousand ha and 0.60 thousand ha with the production of 3.6 thousand tons and 9.0 thousand tons respectively. Ginger is the major spice crop cultivated in the area of 1.4 thousand ha with a production of 11.9 thousand tons.

ODOP

i. Total Production of the produce 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 28,027 ha with a production of 59,986 tons. Major crops cultivated in the district are Jhum paddy, Maize, WTRC Paddy, and Kholar in the area of 8,430 ha, 7,595 ha, 3,720 ha, and 3,310 ha with the production of 16,770 tons, 15,037 tons, 10,758 tons, and 4,237 tons respectively.

Table 2: Area and production of pulses, cereals, and oil seed crops in the district

S. No	Crop	Area (Ha)	% Share	Production (MT)	% Share
1	Jhum Paddy	8,430	30.1%	16,779	28.0%
2	Maize	7,595	27.1%	15,037	25.1%
3	WTRC Paddy	3,720	13.3%	10,758	17.9%
4	**Rajma/Kholar**	**3,310**	**11.8%**	**4,237**	**7.1%**
5	Rapeseed Mustard	1,220	4.4%	1,231	2.1%
6	Soybean	1,113	4.0%	1,396	2.3%
7	Ricebean/Nagadal	391	1.4%	452	0.8%
8	Pea	351	1.3%	381	0.6%
9	Perilla	234	0.8%	143	0.2%
10	Linseed	220	0.8%	180	0.3%
11	Sesamum	192	0.7%	120	0.2%

Table 2: Area and production of pulses, cereals, and oil seed crops in the district					
S. No	Crop	Area (Ha)	% Share	Production (MT)	% Share
12	Beans	170	0.6%	229	0.4%
13	Yam	165	0.6%	1198	2.0%
14	Sugarcane	162	0.6%	6976	11.6%
15	Small Millet	130	0.5%	150	0.3%
16	Jobstear	101	0.4%	101	0.2%
17	Tur/Arhar	100	0.4%	90	0.2%
18	Mesta	71	0.3%	73	0.1%
19	Groundnut	42	0.1%	44	0.1%
20	Bajra	40	0.1%	40	0.1%
21	Gram	40	0.1%	30	0.1%
22	Black gram	40	0.1%	30	0.1%
23	sun-flower	40	0.1%	30	0.1%
24	Tea Green	40	0.1%	171	0.3%
25	Ragi	30	0.1%	30	0.1%
26	Barley	30	0.1%	30	0.1%
27	Oats	30	0.1%	30	0.1%
28	Horse gram	20	0.1%	20	0.0%
	Total	**28027**	**100.0%**	**59,986**	**100.0%**

Area and Production of vegetable crops in the district

In 209-20, the total area under the vegetable crops in the district is 2,113.67 ha with a production of 20,658.60 tons. Major crops cultivated in the district area are cabbage, beans, and green chili in the area of 451 ha, 350, and 350 ha with the production of 5,412 tons, 2,108 tons, and 2100 tons respectively.

Table 3: Area and production of vegetable crops in the district					
S. No	vegetables	Area (Ha)	% Share	Production (MT)	% Share
1	Cabbage	451.00	21.34%	5,412.00	26.2%
2	Beans (All Including Lab-lab)	350.00	16.56%	2,108.00	10.2%
3	Green chilly	350.00	16.56%	2,100.00	10.2%
4	Potato	241.00	11.40%	4,436.00	21.5%
5	Other vegetables Specify Crop in Remarks Column)	200.00	9.46%	2,549.00	12.3%
6	Tomato	192.00	9.08%	1,228.00	5.9%
7	Peas (Green)	70.00	3.31%	568.00	2.7%
8	Cauliflower	48.00	2.27%	432.00	2.1%
9	Carrot	41.00	1.94%	451.00	2.2%
10	Cucumber	36.00	1.70%	288.00	1.4%

Table 3: Area and production of vegetable crops in the district					
S. No	vegetables	Area (Ha)	% Share	Production (MT)	% Share
11	Kaddu/Pumpkin	26.00	1.23%	210.00	1.0%
12	Onion	22.00	1.04%	341.00	1.7%
13	Radish	21.00	0.99%	267.00	1.3%
14	Brinjal	20.00	0.95%	120.00	0.6%
15	Leafy Vegetables (Amaranthus, Kashmiri Sag, Spinach, Celery, etc.)	20.00	0.95%	50.00	0.2%
16	Bottle gourd	5.00	0.24%	12.50	0.1%
17	Okra/Ladies Finger	5.00	0.24%	12.50	0.1%
18	Arbi/Colocasia	5.00	0.24%	30.00	0.1%
19	Bitter Gourd	3.00	0.14%	9.00	0.0%
20	Ash Gourd/Petha	2.00	0.09%	12.00	0.1%
21	Sweet Potato	2.00	0.09%	11.00	0.1%
22	Capsicum	1.59	0.08%	6.75	0.0%
23	Broccoli	1.00	0.05%	2.00	0.0%
24	Ridge/Sponge Gourd (Torai)	1.00	0.05%	0.15	0.0%
25	Mushroom	0.08	0.00%	2.70	0.0%
	Total	**2,113.67**	**100.00%**	**20,658.60**	**100.0%**

Area and Production of fruit crops in the district

In 2019-20, the total area under the fruit crops in the district is 2,776 ha with a production of 30,908.10 tons. The major fruit crops cultivated in the district are mandarin orange, banana, and passion fruit in the area of 614 ha, 600 ha, and 470 ha with the production of 3,684 tons, 9,000 tons, and 2,153 tons respectively.

Table 4: Area and Production of fruit crops in the district					
S. No	Fruits	Area (Ha)	% Share	Production (MT)	% Share
1	Kinnow/Mandarin Orange	614.00	22.12%	3,684.00	11.92%
2	Banana	600.00	21.61%	9,000.00	29.12%
3	Passion Fruit	470.00	16.93%	2,153.00	6.97%
4	Pineapple	410.00	14.77%	7,380.00	23.88%
5	Tapioca	189.00	6.81%	3,832.00	12.40%
6	Apple	130.00	4.68%	1.040.00	3.36%
7	Papaya	65.00	2.34%	1.369.00	4.43%
8	Guava	46.00	1.66%	276.00	0.89%
9	Mango	40.00	1.44%	252.00	0.82%
10	Pear	40.00	1.44%	336.00	1.09%
11	Aonla/Gooseberry	32.00	1.15%	280.00	0.91%

Table 4: Area and Production of fruit crops in the district					
S. No	Fruits	Area (Ha)	% Share	Production (MT)	% Share
12	Other Citus (specify Crop In Remarks Column)	31.00	1.12%	620.00	2.01%
13	Plum	30.00	1.08%	180.00	0.58%
14	Litchi	25.00	0.90%	95.00	0.31%
15	Sweet Orange/Mosambi	20.00	0.72%	112.00	0.36%
16	Other Fruits (Specify Crop in Remarks Column)	13.00	0.47%	130.00	0.42%
17	Watermelon	10.00	0.36%	89.00	0.29%
18	Jackfruit	8.00	0.29%	72.00	0.23%
19	Peach	3	0.11%	8.10	0.03%
	Total	**2,776.00**	**100.0%**	**30,908.10**	**100.00%**

Area and Production of spice crops

In 2019-20, the total area under the spice crops in the district is 1,781 ha with the production of 1,603 tons. Major spice crops cultivated in the district are ginger, and cardamom large in the area of 1,498 ha, and 175 ha with a production of 1,198 tons and 53 tons.

Table 5: Area and production of spice crops in the district					
S. No	Spices	Area (Ha)	% Share	Production (MT)	% Share
1	Ginger	1,498.00	84.1%	1,198.40	74.8%
2	Cardamom Large	175.00	9.8%	53.00	3.3%
3	Red Chilly	67.00	3.8%	87.61	5.5%
4	Garlic	26.00	1.5%	234.00	14.6%
5	Turmeric	15.00	0.8%	30.00	1.9%
	Total	1,781.00	100.0%	1,603.01	100.0%

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

In 2019-20, the total area under the crops in the district is 34.6 thousand tons with a production of 113 thousand tons. Rajma crop is cultivated in the area of 3.3 thousand ha with the production of 4.2 thousand tons which is 9.5% of the total area and 3.7% of the total crop production in the district.

Table 6: ODOP production as a percentage of total agricultural production in the district				
Crop	Area (Ha)	% Share	Production (MT)	% Share
Rajma/Kholar	**3,310**	**9.5%**	**4,237**	**3.7%**
Other pulses, cereals, and oil seeds	24,717	71.2%	55,749	49.3%
vegetable crops	2,113.7	6.1%	20,658.6	18.3%
Fruit crops	2,776	8.0%	30,908	27.3%
Spices	1,781	5.1%	1,603	1.4%

Table 6: ODOP production as a percentage of total agricultural production in the district				
Crop	Area (Ha)	% Share	Production (MT)	% Share
Total	**34,697.7**	**100.0%**	**1,13,155.6**	**100.0%**

iii. Perishable nature of the produce

Rajma crop is perishable and has less shelf life. Moisture content in the crop should be maintained between 5 to 18% to increase the shelf life of the crop.

Table 7: Perishable nature of the produce		
S. No	**Product**	**Shelf life**
1	Fresh rajma	2-3 days
2	Dried rajma	2-3 years
3	Canned beans	3-5 years
4	Rajma flour	4-6 months

iv. Production of ODOP Agriculture Produce in that district compared to other districts and states

In 2019-20, the rajma crop is cultivated in the area of 17.1 thousand ha with the production of 21.9 thousand tons in the Nagaland state. In the Kiphire district, the rajma crop is cultivated in the area of 3.3 thousand ha with the production of 4.2 thousand tons respectively which is 19.3% of the total crop area and 19.3 % of the total crop production in the state.

Table 8: Production of ODOP agriculture produce in the district compared to other districts				
District	**Area (Ha)**	**% Share**	**Production (MT)**	**% Share**
Tuensang	6,081	35.4%	7,751	35.3%
Kiphire	**3,310**	**19.3%**	**4,237**	**19.3%**
Longleng	1,,948	11.3%	2,485	11.3%
Mon	1,287	7.5%	1,654	7.5%
Mokokchung	1,256	7.3%	1,612	7.4%
Zunheboto	942	5.5%	1,196	5.5%
Wokha	932	5.4%	1,186	5.4%
Kohima	757	4.4%	970	4.4%
Phek	657	3.8%	839	3.8%
Nagaland	**17,170**	**100.0%**	**21,930**	**100.0%**

v. Number of workers engaged in the ODOP cultivation

In 2019-20, the rajma crop is cultivated in the area of 3310 ha with the production of 4237 tons in the Kiphire district. The average land holding in the Nagaland state is 0.6 ha and he average household size is 5.

The number of households involved in the cultivation of the rajma crop in the district is 1986 households and the number of workers involved in the cultivation of the rajma crop in the district is 9930. It is estimated that 13 to 15% of the total population in the Kiphire district is involved in the cultivation of the rajma crop.

Non-ODOP:

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

Jhum paddy, Maize, WTRC paddy, Rapeseed mustard, Soybean, cabbage, beans, kinnow/mandarin orange, banana, and ginger are the major crops cultivated in the district apart from the chosen ODOP.

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

Jhum paddy, Maize, WTRC paddy, and Rapeseed mustard are cultivated in the area of 8,430 ha, 7,595 ha, 3,720 ha, and 1,220 ha with the production of 16,779 tons, 15,037 tons 10,758 tons, and 1,231 tons respectively. The major pulses, cereals, oil seeds, fruits, vegetables, and spices crops are cultivated in the area of 25,591 ha with a production of 61,287 tons.

Table 9: Total production of each of the produce in the district

S. No	Crop	Area (Ha)	Production (MT)
1	Jhum paddy	8,430	16,779
2	Maize	7,595	15,037
3	WTRC paddy	3,720	10,758
4	Rapeseed mustard	1,220	1,231
5	Soybean	1,113	1,396
6	Cabbage	451	5,412
7	Beans	350	2,108
8	Kinnow/ Mandarin orange	614	3,684
9	Banana	600	3,684
10	Ginger	1,498	1,198

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

Maize and apple-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 Non-ODOP crops in the district

In 2019-20, the total area under the crops in the district is 34,697.7 ha with a production of 1,13,155.6 tons. Maize and apple contribute 22.3% of the total agricultural area in the district with the production of 14.2% of the total crop production.

Table 10: Area and production of Non-ODOP crops in the district				
Crop	Area	% Share	Production	% Share
Maize	**7,595**	**21.9%**	**15,037**	**13.3%**
Apple	**130**	**0.4%**	**1,040**	**0.9%**
Other Pulses, cereals, and oil seeds	20,432	58.9%	44,949	39.7%
vegetable crops	21,13.7	6.1%	20,658.6	18.3%
Other Fruit crops	2,646	7.6%	29,868	26.4%
Spices	1,781	5.1%	1,603	1.4%
Total	**34,697.7**	**100.0%**	**1,13,155.6**	**100.0%**

iv. Perishable nature of the Non-ODOP produce:

The perishable nature of the non-ODOP crops is listed below

Table 11: Perishable nature of the non-ODOP produce		
S. No	**Product**	**Shelf life**
1	Maize flour	2-4 months
2	Maize flakes	12 months
3	Apple RTS	3-5 months
4	Apple pulp	3-5 months
5	Apple jam	3-5 months

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 7725 ha in 2019-20. It is estimated that approximately 4700 to 5000 employees are engaged in the cultivation of the non-ODOP crops in the district which is 25 to 27% of the total population 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 12: 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 12: 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 12: 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 13 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 NABARD and focusing on the creation of FPOs in Peren, Kiphire, and Kohima. 3 under the cooperative act under NABARD / NCDC and 10 under SFAC under the Companies Act. He further informed that at Block level 5 villages engage in the cooperative activity; hence they are trying to develop an Integrated Multipurpose Cooperative Society to tap the small group on their Aadhar 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 eco system:

1. Industrial Profile of the Districts in the State

There are 64 registered units in the districts and one industrial area in the district. There are no medium and large enterprises registered in the district. 402 employees are working in the registered enterprises in the district.

Table 14: Industrial Scenario of Kiphire District

S. No.	Head	Unit	Particular
1	Registered industrial unit	Number	64
2	Registered medium and large unit	Number	Nil
3	Estimated average no. of daily workers employed in small-scale Industries	Number	402
4	No. Industrial area	1	N/A
Source – Brief Industrial Profile Report by MSME, GOI			

2. Identifying Non-ODOP Products:

Identified Non – ODOP products through a primary survey in the district are listed in the below table

Table 15: Non-ODOP value-added products

S. No	Crop Name	Value added products
1	Maize	Maize Starch, Maize Oil, Sorbito
2	Apple	Jam, Jelly, Sauce, etc.,

4. District-wise profiling based on secondary research

Traditionally, the people in the district work on metal with simple technology but most of the production is meant for household needs and requirements. Basketry, weaving, Stone crushing, Wood based units, Sawmill, Cement craft, Steel Fabrication, wood carving, pottery, Handloom products, Cane and Bamboo products, Stone Tiles, Spinning and Black smithy, Food processing units, Carpentry are traditional activities in which a sizeable number of the local people are skilled.

The District Industries Center needs to be strengthened 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. Lemongrass distillation Plant- 1
2. International Border trade center - 1

To encourage prospective entrepreneurs to take up industrial activities, there are provisions to provide margin money/ seed money/ subsidy by the implementing agencies. However several constraints 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 rajma 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 Kiphire District

From the primary survey, it is observed that none of the respondents are aware of the rajma crop as the ODOP of the district. It is suggested for the DIC advertise the schemes and the policies promoting the food processing enterprises in the district.

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

Kholar-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?

'Kholar,' is the local name for French beans or rajma has been the 'manna' to generations of the Yimchungru Naga tribe living in Tuensang and Kiphire districts and on the other side of the Indo-Myanmar border.

'Kholar' is grown extensively in the Shamator-Chessore belt of Tuensang district and Pungro sub-division in Kiphire district and it is the pulse or main source of sustenance and livelihood for many families in these two districts. During the mid-winter season, the hill ranges can be seen dotted with Kholar fields. According to local villagers, there are about 22 varieties of Kholar grown in the region with interesting names tagged (in Yimchungru dialect) to each variety, like 'Jepshiak' (pure yellow), 'Aphimbea' (flying), 'Moho' (irresistible), 'Amurak' (pure black) and 'Amurum' (dog's liver). 'Jepshiak' comes on top of the price list for its unique flavor. A tin (13-15 kg) of 'Jepshiak' costs Rs. 500-600 compared to Rs. 350-400 per tin for other varieties.

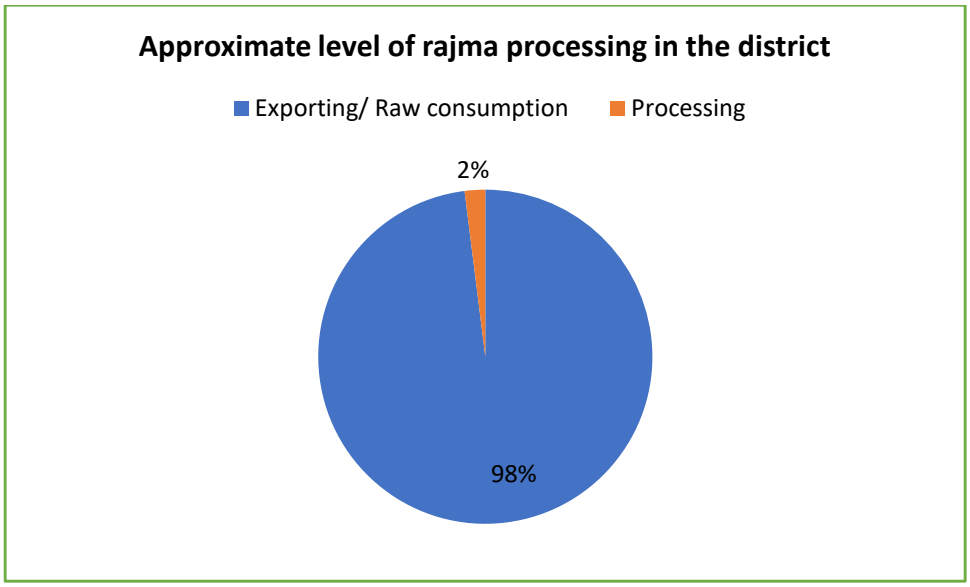
'Aphimbea', the small white bean which becomes slippery after it is cooked is believed to have medicinal value and is recommended as a post-surgery diet as well as for replenishing bone marrow. Villagers say 'Moho' is so named as the crimson pods of 'Moho' are so enticing that thieves or strangers cannot resist the urge to pluck them.

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, 55 to 60 tons of the total crop produced in the district is primarily processed (Sorting, grading, and packing). The majority of the crop produced in the district is exported to other districts and other states in the country.

Currently, the majority of the enterprises in the district are following only the traditional method of drying (Sun-drying), grading, and storing.

Figure 1: Approximately level of rajma 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 16: Details of Existing Micro and Small Enterprises and Artisan units in the Kiphire District

S. No	Type of industry	No. of units	Investment (Lakhs)	Employment
1	Agro based	4	8	12
2	Other industries	97	167.6	265
	Total	101	175.6	277

Source: - Brief Industrial Report of the district by MSME, GOI

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

There is no processing cluster for the rajma crop in the district despite the good amount of crop production.

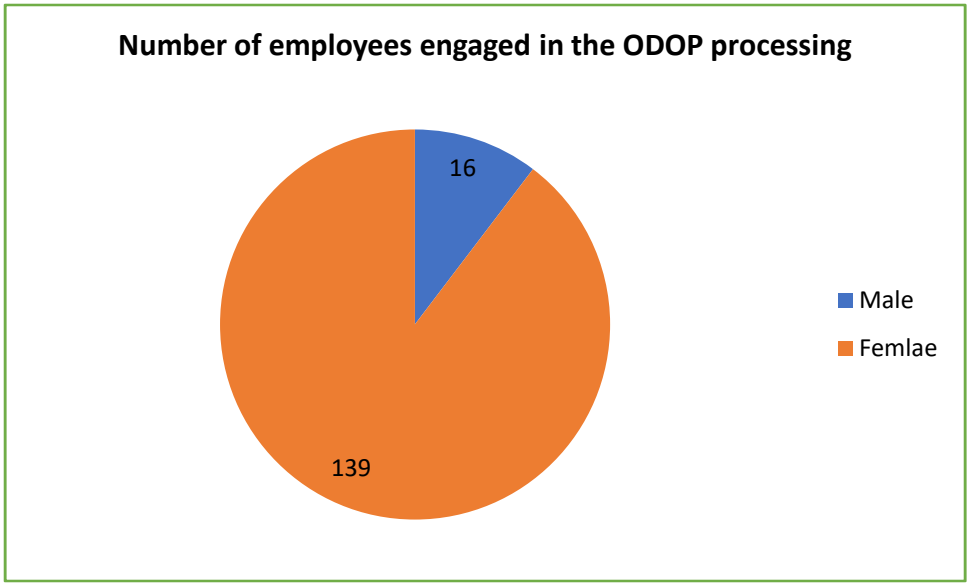
Potential clusters in the Kiphire district for the rajma processing are Langkok, Lonhthongre, Anatongre, Pungrung, Longmatra, Amahator, Salomi, Pruvkin, and Chikiponger.

vii. Number of workers engaged in the ODOP processing

From the primary survey, it is estimated that there are 130 to 150 unregistered enterprises in the district and approximately 400 to 550 employees are working in the food processing enterprises.

In the 21 enterprises processing the rajma crop in the district, it is observed that 155 employees are working in the rajma primary processing in the district. Among the total employees working in the rajma processing in the district, 139 employees are female and 16 employees are male.

Figure 2: Number of workers 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 rajma products 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 (25 to 30 INR Per Kg) and the traders are further selling the produce t the wholesalers (30 to 35 INR Per Kg) and the retailer (35 to 40 INR Per Kg) in the other district after the primary processing. Processing enterprises in the district are purchasing the crop from the traders or the wholesalers at the price of INR 35 to 40 and after the processing sell the produce to the retailers at the price of INR 100 to 120 per kilogram. A retailer in the district sells the produce to the consumer (100 to 120 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.

Figure 3: Packed kholar produce in the district

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

Table 17: APMC in the district

S. No	Name of Market	Location	Delineated Market area
1	Principal Market Yard (PMY) Kiphire	Kiphire Town, Kohima Road	Entire areas under Kiphire District.

Infrastructure in other districts:

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

Table 18: Cold storage in the Dimapur district

S. No	Name and Address	Capacity in MT	Sector	Commodity
1	MARCOFED cold	1,150	Cooperative	Multipurpose

Table 18: Cold storage in the Dimapur district				
S. No	Name and Address	Capacity in MT	Sector	Commodity
	storage, Dimapur			
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.

In 2019-20, rajma was cultivated in the area of 3,310 ha with a production of 4,237 tons. Rajma crop contributes 9.5% of the total crop area in the district with the production of 3.7% of the total crop production. Kiphire district contributes 19.3% of the total crop area under the rajma crop in the state with the production of 19.3% of the total crop production in the state.

Per kilogram of the rajma crop is sold at the price of approximate price of 40 to 50 INR per kg. It is estimated that INR 1,694.8 to 2,118.5 lakhs worth of rajma crop is produced in the district. Among the total crop produced in the district approximately, 55 to 60 tons of the crop is primarily processed (Sorting, grading, and packing). It is estimated that INR worth 30 to 40 lakhs worth of primary processed crops 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

21 food processing enterprises are surveyed during the primary survey in the district.

Kholar processing units are involved in primary processing (Drying, sorting, and grading of the produce) and selling the product in villages, nearby towns, and also in other districts. Traders and aggregators are procuring the produce from farmers at farm gates and trading to nearby districts also.

The interviewed respondents/processing units are not involved in the processing of kholar products such as canning or bean flour.

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

Achingkehda Self-help group and Kiphre district Farmers association are engaged in production activities of maize and Kholar. However, they are involved in the primary processing (Drying, cleaning, grading, and sorting) of the Kholar beans, there is no secondary processing like canning, or flouring of the beans.

Altogether 12 farmers' organizations in the district. Under the District, the State Government has promoted an FPO by the name, 'Kiphire District Organic Farmer Co-operative Society Ltd.' with 670 farmers as registered members.

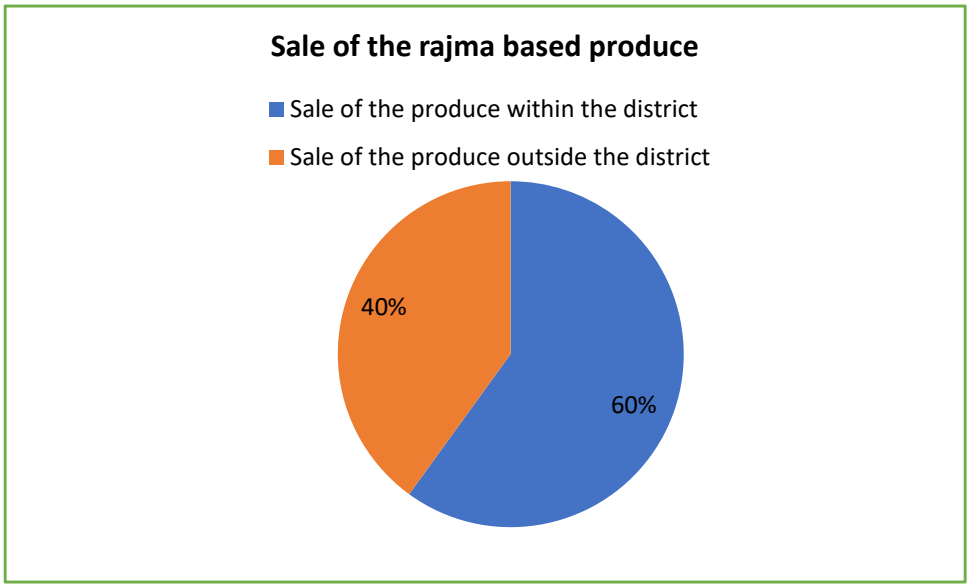
There are 45 SHGs in the district engaged in food processing, out of which 12 are covered in the survey and are dealing with Kholar processing.

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

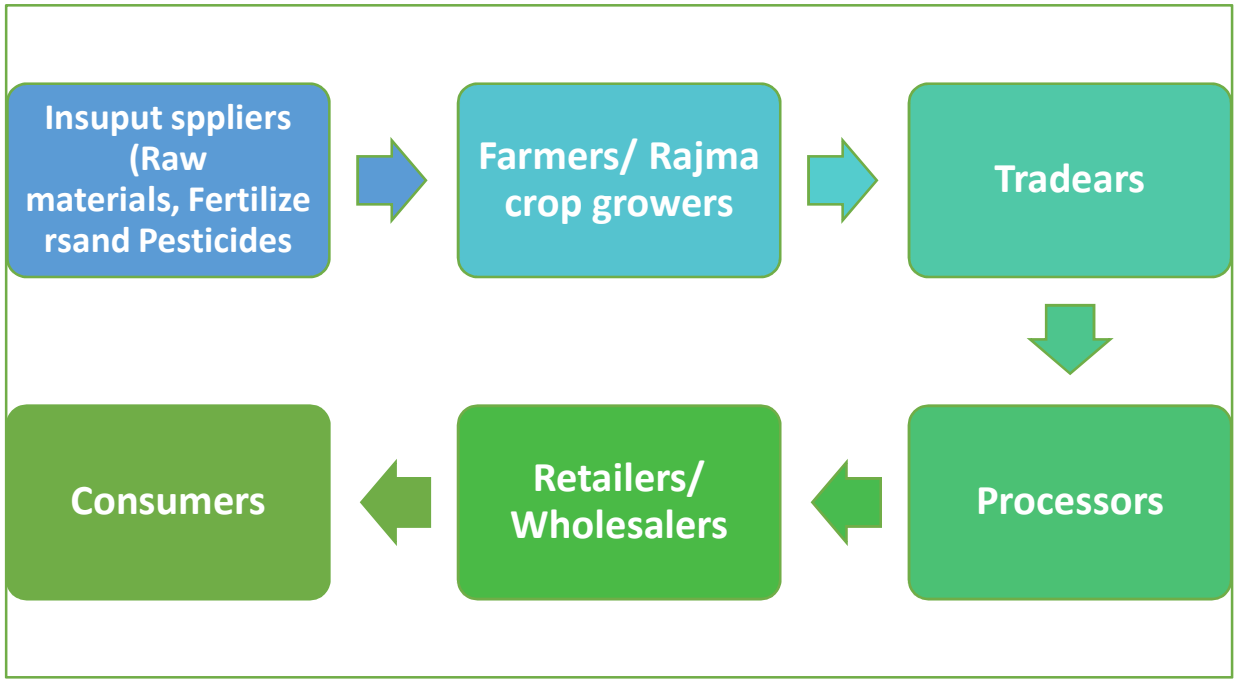
From the primary survey, it is estimated that 40 to 50% of the 55 to 60 tons of the primary processed rajma crop in the district is exported to other states through wholesalers and retailers. 50 to 60% of the crop processed in the district is sold in the district through retailers and wholesalers.

Figure 4: Sale of the rajma based produce



5. Mapping the value chain aspects

Figure 5: 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 rajma-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 rajma crop 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 the county.

Table 19: Infrastructure constraints faced by micro-enterprises	
Infrastructure	**Up-gradation proposals**
A) Public Infrastructure	• Rajma crop growers and the rajma processing enterprises 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 Vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Coloring sorting 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 20: 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 new entrepreneurs on the standardized process of rajma processing, canned rajma, and rajma flour and training on the branding and marketing of the processed products. • Skill development training on handling advanced machinery and equipment like Vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Coloring sorting machine, and Packaging machine	13
2	Manufacturing practices	• Existing farmers/Traders' Enterprises are following the traditional method of rajma processing 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 advanced technology or machinery in the district by the existing enterprises. • Existing farmers/Traders and processing enterprises are following the traditional method of rajma processing (Sun drying, manual grading, and sorting).	• Provide advanced machinery and equipment like machineries like Vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Coloring sorting machine, and Packaging machine at subsidized prices for the existing and new	1549.33

Table 20: Mapping the firm-level issues				
S. No	**Sectors**	**Gaps**	**Recommendations**	**Costing (Lakhs)**
			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

1. Industry and Market Analysis

1.1 Introduction –

Common bean or kidney bean (Phaseolus vulgaris) is a major grain legume crop present all over the world, and third in importance after soybean and peanut. This is one of the most ancient crops, and the ancestors of P. Vulgaris appear to have spread in both North and South from a region centered in Ecuador and Northern Peru. Kidney beans then were brought to Europe and Africa during the sixteenth century by visiting Spanish and Portuguese explorers. Major producing countries for national consumption are Brazil and Mexico. The crop is also important in a range of developing countries in Central America, the Andean region of South America, and Eastern and Southern Africa. Common beans are both consumed as mature grain and immature seed. Common bean is also known as green bean, string bean, wax bean, snap bean, field bean, pinto bean, haricot, kidney bean, black bean, turtle bean, navy bean, and great northern bean in different parts of the world.

Market Drivers

- Minimal cooking time: Hectic lifestyle of consumers has led to reduced available time for cooking. Food choices are increasingly based on cost, taste, convenience, quality, and cooking time. Canned beans being precooked offer the convenience of easy preparation and minimal preparation time.
- High shelf life
- Convenient packaging
- Effective marketing strategies
- Growth of the organized retail sector in developing countries

1.2 Benefits of the product

Nutritive Value and Health Benefits of the product

Table 21: Nutritional composition of Kholar

Nutritional components	Value per 100 grams
Vitamin A	313.9 µg
Vitamin B1 (Thiamine)	0.1 mg
Vitamin B2 (Riboflavin)	0.1 mg
Vitamin B3 (Niacin)	0.5 mg
Vitamin B9 (Folic Acid)	161.7 µg
Vitamin C	14.7 mg
Calcium	136.9 mg
Iron	2.4 mg
Magnesium	78.6 mg
Phosphorous	178.6 mg

Table 21: Nutritional composition of Kholar	
Nutritional components	Value per 100 grams
Sodium	34.5 mg
Potassium	634.2 mg
Zinc	1.8 mg

Health benefits of Kholar

- Have anti-inflammatory properties.
- Rich source of protein.
- Prevent constipation.
- Boost immunity.
- Lowering the blood pressure.
- Promoting Healthy Skin.
- Consumption of rajma helps in reducing LDL (bad) cholesterol.
- Preventing the symptoms of diabetes.

1.3 Global Market for the Product:

The Global Canned Beans Market size is projected to reach approximately USD 1.46 Billion by 2026, at a CAGR of 3.47% from 2020 to 2026.

The global pulses market to reach a volume of 148.5 Million Tons by 2026, exhibiting moderate growth during the forecast period (2021-2026). In 2019, the Indian pulses market reached a volume of 27.5 million tons. Vegetarians account for a sizable portion of the Indian population, and pulses are the primary source of protein in their diets. Pulses are high in carbohydrates, vitamins, minerals, fatty acids, dietary fibers, and other nutrients. In addition, India's large consumer base is a major driver of the pulses market. India's population is expected to surpass 1.5 billion by 2030, up from 1.3 billion in 2018. This is expected to result in a significant increase in food demand during this time, driving up pulse consumption in the country. Pulses have also found uses in the food processing industry, in addition to being a staple food for people.

Europe is the largest market for canned beans and pulses in the world, accounting for more than half of world imports. Large importing and consuming markets such as the United Kingdom, Germany, and France offer you the best opportunities. A main driver of demand is the growing consumer interest in vegetable substitutes for meat protein, as well as additive-free and convenience products.

The United Kingdom, Germany, and France offer you the best opportunities, because of their large size. Growing markets such as the Netherlands, Romania, and Denmark also offer opportunities.

Kidney bean Importing countries

In 2019, Brazil was at the top to import kidney beans with 150 thousand MT quantity, followed by Turkey, Italy and Mexico.

Table 22: Kidney bean importing countries

S. No	Country	Qty (MT)	Value (000USD)
1	Brazil	1,50,394	94,999
2	Turkey	1,34,716	1,25,552
3	Italy	1,26,392	1,41,551
4	Mexico	1,21,923	1,03,153
5	India	1,14,783	1,04,496
6	U K	1,00,031	95,313
7	Pakistan	83,067	59,522
8	Canada	52,029	44,717
9	Spain	48,599	57,194
10	France	35,787	49,989

Source: UN Comtrade

1.4 Indian Market and Valuation for the Product

Changes in lifestyle, a rise in the working population, and increasing demand for healthier food and easy consumption coupled with growing health concerns are the key factors driving the market growth.

Beans are a popular form of nutritional value and also one of the most planted species in the world. However, instant foods have taken the food industry by storm and food packaging turns out to be one of the lucrative businesses within the food and beverages sector. Modern consumer demands and industrially processed beans have gained wide attention owing to the rise in consumer needs for the consumption of processed canned beans. Canned beans can prove as a good substitute for preparing dry packaged beans that comprise solids and liquids termed brine that enhances the sodium content when consumed in minute quantities. In addition, the consumption of dried beans develops a good diet quality and minimizes health risks. However, many consumers are unfamiliar with the concept of dried beans.

Canned beans are also a form of dry beans having a high share of starch, fibers, vitamins, and minerals. Beans have a culinary aspect that enables them to be viable alternatives to fulfill the demand of consumers across the world, thus adding value to the food and reducing cooking times. The nutrient composition for canned beans mainly involves edibility levels without the addition of sodium and fat before cooking. On a commercial basis, pricing for canned beans is mostly based on the nutrient levels offered.

Countries importing Kidney beans from India

India exported maximum kidney beans of 4565 thousand MT to Nepal in 2020-21, followed by the USA, Qatar, Canada, and China.

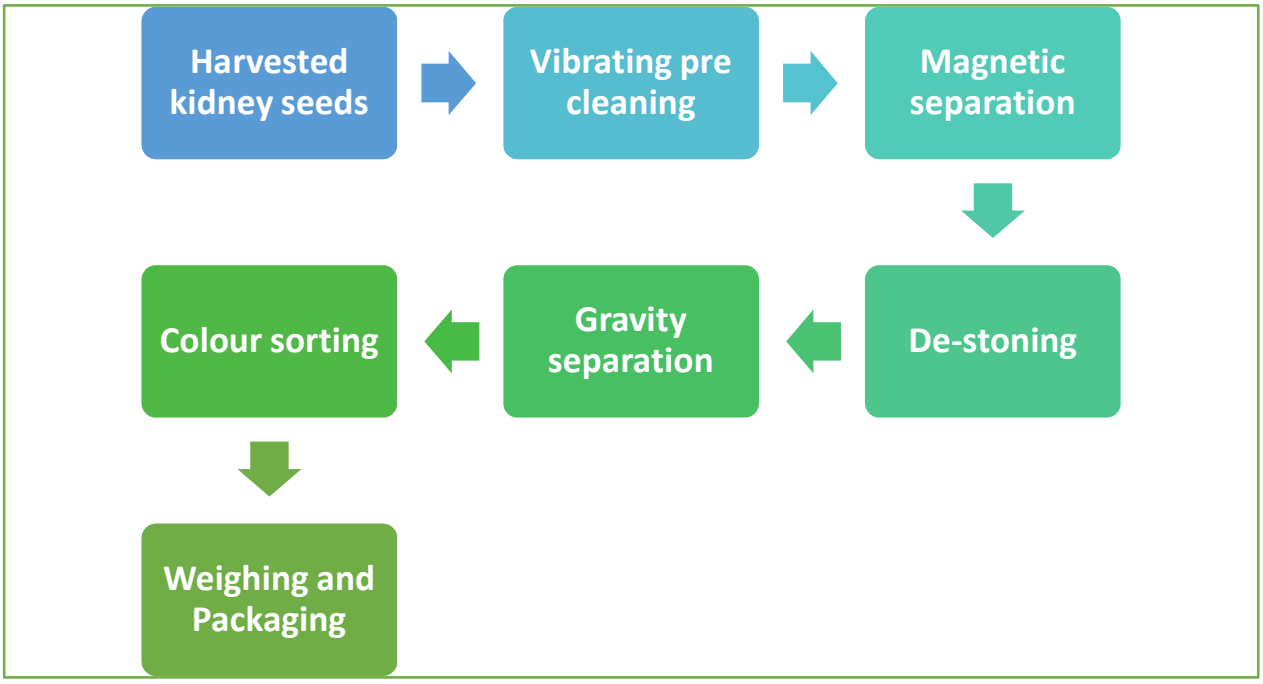
Table 23: Countries importing kidney beans from India

S. No	Country	Quantity (MT)	Value (000 USD)
1	Nepal	45,65,638	24,15,14,694
2	U S A	5,92,706	7,44,19,510
3	Qatar	4,00,349	3,54,22,609
4	Canada	2,75,082	2,70,41,281
5	China P Rp	2,88,000	1,34,40,708
6	U K	1,44,905	1,23,74,827
7	Sri Lanka Dsr	1,66,280	87,65,773
8	Singapore	65,337	78,64,786
9	U Arab EMTs	74,902	77,61,985
10	Vietnam Soc Rep	76,585	50,59,698

Source: DGCIS Annual Export

1.5 Manufacturing Process

Figure 6: Rajma processing flow chart



Machinery and equipment- Capacity 300 kg/ hr

Table 24: Machinery and Equipment required for rajma processing			
S. No	**Machine**	**Unit**	**Price (lakhs)**
1	Vibrating Pre-cleaner	1	1.50
2	De-stoner	1	1.75
3	Magnetic separator	1	1
4	Gravity separator	1	1.30
5	Color sorting machine	1	6
6	Packaging machine	1	3.80
7	Other materials- Bins, trolleys, conveyors, Silos, weighing machines, bucket elevators, etc.	1	3.50

1.6 Test is done for the Product

At present pre-processors are not practicing qualitative and quantitative tests for the product. Here we are explaining what are all tests and parameters required for testing. Information is provided based on our primary interaction with FSSAI officials and also through secondary research.

The quality of specific dry bean lots is kept in check by following food safety standards and programs like:

- Good Agricultural Practices (GAPs)
- Good Manufacturing Practices (GMPs)
- ISO 9000
- Hazard Analysis Critical Control Points (HACCP)
- Safe Quality Food (SQF) standards

Post-harvest losses critically and extensively influence product quality. These are substantiated by biological and environmental factors like pests, microorganisms, rodents, storage temperature, time, and moisture.

A) Specific Quality Factors associated with Dry Beans

Moisture Content - The moisture levels between 15 to 18% during the packaging and storage are recommended to ensure superior quality of the product

Extraneous Matter - The term accounts for the presence of mineral or organic matter in the final product Less than 1 % extraneous matter is permissible wherein mineral component must not exceed 0.25% while the organic matter must be less than 0.10%

Seed Discoloration - Tannins and polyphenols are the major influencing factors in the deterioration of color, flavor, and nutritional quality of pulses and legumes catalyzing the precipitation of alkaloids, gelatine as well as protein enzymatic oxidation of polyphenols is also associated with the development of hard to cook beans

Mould Development and toxins - High moisture content, high relative humidity, and high temperature during storage result in mould growth on beans Microbial factors like bacterial bloom and root rot during the crop cultivation and development also influence mould growth post-harvest

Cladosporium, Aspergillus amstelodami, Aspergillus dimorphicus, and Penicillium cyclopium are the most common fungal strains infecting kidney beans during storage and the severity of the situation is further escalated by aflatoxin production

Aflatoxins are carcinogenic secondary metabolites produced by Aspergillus fungi commonly associated with food poisoning and liver damage.

Heavy Metals - The presence of heavy metals in the final product at a range above the permissible limit may
cause severe health issues to the consumers According to WHO standards, the concentration of heavy metals must not be higher than 10 mg/kg

Pesticide Residue - The maximum residue limit (MRL) for pesticides is as per the standards of the Joint FAO/WHO Food Standards Programme of Codex Alimentarius Commission wherein the MRL of dry beans is 0 4 mg/Kg.

B) Specific Quality Factors associated with Canned Beans

The quality of canned beans and pulses is evaluated through several characteristics. Some of the most important are:

Color, look, flavor and taste: These are among the most important quality criteria for canned beans and pulses. Quality can be judged according to the number of defects present in the beans, such as loose skin, color variations, the number of broken beans, as well as the presence of beans (in green beans), pods (in other beans), and blemishes.

Size: Canned beans and pulses should be uniform in size. Sizing is optional but frequently performed.

Cut: For green beans, there are different types of cuts such as short, sliced lengthwise, or diagonal.

Brine: The composition and taste of the brine or filling sauce is also evaluated.

Weight: Minimum drained weight is defined for green peas and green beans. For other types of canned beans and pulses, the minimum drained weight is not defined.

Table 25: The test is done for the rajma value-added products from Kholar Beans		
S. No	**Physio-Chemical Test**	**Microbial Test**
1	Brix	Total plate count
2	pH	Yeast and Mold
3	Acidity	E-coli
4		Salmonella

2. District Profiling

There are 108 Grampanchayat in the district. There are almost 20-25 units of Kholar processing in the district. However, there is no cluster for Kholar processing in the district.

2.1 Demographic and Socio-economic profiling

According to the 2011 census Kiphire District has a population of 74044. Kiphire has a sex ratio of 956 females for every 1000 males, and a literacy rate of 69.54%.

Table 26: Demographic and socio-economic profiling of the district				
S. No	**Particular**	**Year**	**Unit**	**Statistics**
1	Geographical features			
A	Geographical Data			
	i) Latitude			25.54N to 25.9N
	ii) Longitude			94.47Eto 94.78E
	iii) Geographical Area		Hectares	125500
B	Administrative units			
	i) Sub Divisions			3
	ii) Tehsil			5
	iii) Sub-Tehsil			3
	iv) Patwar circle			7
	v) Panchayat Simitis			
	vi) Nagar Nigam			3
	vii) Nagar Palika			
	viii) Gram Panchayats		Number	108
	ix) Revenue Villages		Number	108
	x) Assembly Area		Number	2
2	Population			

Table 26: Demographic and socio-economic profiling of the district				
S. No	Particular	Year	Unit	Statistics
A	Sex wise			
	i) Male (Urban)	2011	Number	8555
	ii) Female (Urban)	2011	Number	7942
B	i) Male (Rural)	2011	Number	29203
	ii) Female (Rural)	2011	Number	28333
3	Agriculture			
A	Land Utilization			
	i) Total Area	2011	Ha	125500
	ii) Forest cover		Ha	77467.87
	iii) Non-Agriculture Land		Ha	1820213
	iv)Cultivation of Barren Land		Ha	29830
4	Forest		Ha	77467.87
	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	94
	c) Main District highway	2010-11	Km	20
	d) other districts	2010-11	Km	207
	e) Rural Road/Agriculture Marketing Board Roads	2010-11	Km	80.13
	f) Kachacha Road	2010-11	Km	319
	Communication			
	a)Telephone connections	2010-11	Number	2500
	b)Post offices	2010-11	Number	13
	c) Telephone Centre	2010-11	Number	245
	d) Density of Telephone	2010-11	Number /1000 person	74
	e) Density of Telephone	2010-11	Number /KM	N/A
	f) PCO	2010-11	Number	2563
	g) PCO-STD	2010-11	Number	450
	h) Mobile	2010-11	Number	2645
	Public Health		Number	
	a)Allopathic Hospital(District Hospital)	2010-11	Number	1
	b) Beds in Allopathic Hospital	2010-11	Number	104

Table 26: Demographic and socio-economic profiling of the district				
S. No	Particular	Year	Unit	Statistics
	c)Ayurvedic Hospital	2010-11	Number	Nil
	d) Beds in AyurvedicHospital	2010-11	Number	Nil
	e) Unani Hospitals	2010-11	Number	NA
	f) Community Health Center	2010-11	Number	1
	g) Primary Health Centre	2010-11	Number	4
	h)Dispensaries	2010-11	Number	
	i)Sub-Health center	2010-11	Number	19
	j)Subsidiary Health Centre	2010-11	Number	Nil
	k)Private Hospitals	2010-11	Number	NA
	Banking Commercial		Number	
	a)Commercial Bank	2010-11	Number	2
	b)Rural Bank products	2010-11	Number	
	c)Co-operative bank products	2010-11	Number	1
	d)PLDB Branches	2010-11	Number	
	IX)Education	2010-11	Number	
	a)Primary School	2010-11	Number	84
	b)Middle Schools	2010-11	Number	25
	c)Secondary and Senior Secondary Schools	2010-11	Number	13
	d)Colleges	2010-11	Number	1
	e) Technical University	2010-11	Number	Nil

2.3 Industrial Profiling

In the Kiphire district, there are altogether around 101 industrial units. There are no large industries in the district.

It is estimated that there are 130-150 unregistered food processing enterprises operating in the district with approximately 400 to 550 employees working in the unregistered 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 Langkok, lonhthongre, Anatongre, Pungrung, Longmatra, Amahator, Salomi, Pruvkin, Chikiponger are the potential cluster for the rajma crop processing in the district. 21 surveyed samples are involved

in the primary processing of the rajma crop (sorting, grading, and packing of the crop) and selling to the wholesalers and the trades in the district.

3.2 Turnover and Employment

From the primary survey, it is estimated that 55 to 60 tons of the total 4237 tons of crops produced in the district are primarily processed. It is estimated that around only 2% of the total crop produced in the district is processed. It is estimated that 30 to 40 lakhs worth of rajma-based products is processed in the district.

Employment:

From the primary survey, it is observed that 155 employees are working in rajma processing enterprises in the district. Among the 155 employees working in rajma processing enterprises, 139 are female employees and 16 are male employees.

It is estimated that there are 130 to 150 unregistered food processing enterprises operating in the district with approximately 400 to 550 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

Machinery and equipment- Capacity 300 kg/ hr

Table 27: Essential machinery for the rajma processing

S. No	Machine	Unit	Price (lakhs)
1	Vibrating Pre-cleaner	1	1.50
2	De-stoner	1	1.75
3	Magnetic separator	1	1
4	Gravity separator	1	1.30
5	Color sorting machine	1	6
6	Packaging machine	1	3.80
7	Other materials- Bins, trolleys, conveyors, Silos, weighing machines, bucket elevators, etc.	1	3.50

Source: NIFTEM Manual

Figure 7: Essential machinery for the Rajma crop processing

1. Destoner	2. Magnetic separator
	
3. Colour sorting machine	**4. Packaging machine**
	

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 (Primary processing) 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 machineries like Vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Color sorting 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 material

3.5.1 The vital raw materials and all the added materials along with that

Rajma is the major raw material in rajma processing. 90% of the rajma is recovered from the rajma processing. 10% of the wastage includes split grains, stones, metals, other metals, etc.

3.5.2 The quality parameters being checked for all the raw materials

Beans shall be sound, clean, sweet, dry, wholesome, and free from admixture of unwholesome substance. It shall also conform to the following standards, namely:

Table 28: Quality parameters for the kidney beans		
S. No	**Particulars**	**Standards**
1	Moisture	Not more than 14 percent by weight (obtained by heating the pulverized grains at 130oC-133oC for two hours).
2	Foreign matter (Extraneous matter)	Not more than 1 percent. by weight of which not more than 0.25 percent. by weight shall be mineral matter and not more than 0.10 percent. by weight shall be impurities of animal origin.
3	Other edible grains	Not more than 0.5 percent by weight.
4	Damaged grains	Not more than 5 percent by weight.
5	Weevilled grains	Not more than 3 percent by count.
6	Uric acid	Not more than 100 mg. per kg.
7	Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains, and damaged grains shall not exceed 6 percent by weight.

3.5.3 Whether the raw materials are perishable

The rajma crop is semi perishable

Table 29: Perishable nature of the produce		
S. No	**Product**	**Shelf life**
1	Fresh rajma	2-3 days
2	Dried rajma	2-3 years
3	Canned beans	3-5 years
4	Rajma flour	4-6 months

3.6 Production Process

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

3.7 Product Range

In the district, only dried bean processing exists. The other possible forms of kholar are listed below

- Canned beans
- Bean flour
- Baked beans
- Rehydrated beans
- Refried beans

3.8 Technology

Farmers and processors are following the traditional method of drying, sorting, and grading the rajma crop in the district. It is suggested to provide the new machinery and equipment like vibrating pre-cleaner machine, de-stoner, magnetic separator, gravity separator, color sorting machine, and packaging machine at the subsidized price for the new and existing enterprises in the district to increase the quantity of crop processing.

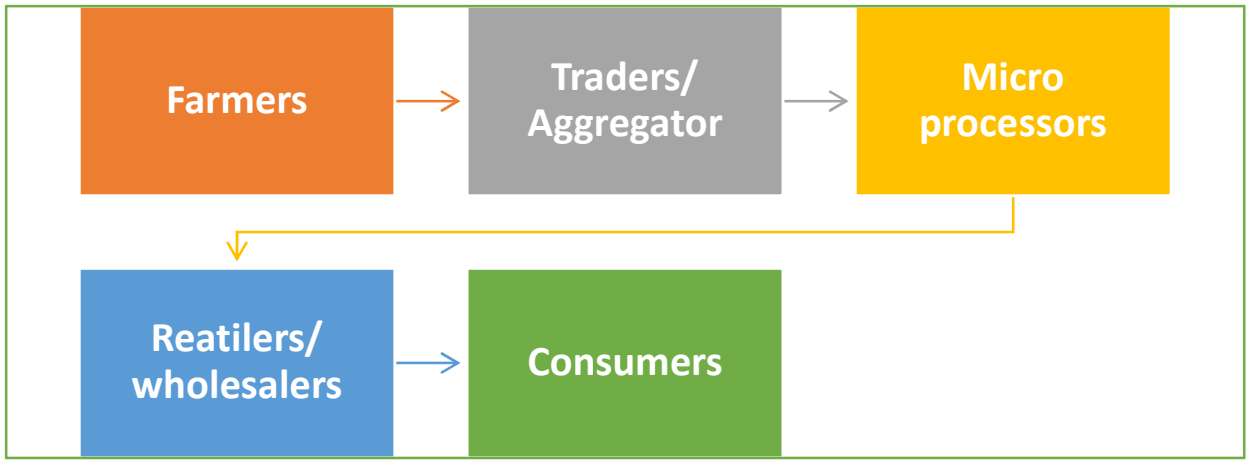
3.9 Marketing

Farmers or traders are processing (primarily processing) the rajma crop and selling it to the local trader or the retail outlets or the consumer.

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 50 to 60% of the total processed rajma is sold within the district through local retailers and approximately only 40 to 50% of the produce is exported to other districts in the state through the wholesalers.

Table 30: Existing sales channels in the district



3.10 Human Resource

From the primary survey, it is observed that 155 employees are working in the 21 surveyed enterprises among the total employees working in the rajma processing enterprises, 139 employees are female and 16 employees are male.

From the primary survey, it is estimated that there are 130 to 150 unregistered food processing enterprises operating in the district. It is estimated that approximately 400 to 550 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 rajma 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 primary processing and secondary processing (Rajm flour, canned rajma). Skill training is required regarding the use of advanced technology and machinery like Vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Colour sorting machine, packaging machine, 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 packed rajma 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 packed rajma are mentioned in section 1.6 (Test done for the produce)

3.13Institutional Support

Agriculture infrastructure fund:

Implementation period:

The Scheme will be operational from 2020-21 to 2029-30. Disbursement in four years starting with a sanction of Rs. 10,000 crores in the first year and Rs. 30,000 crores each in the next three financial years. The moratorium for repayment under this financing facility may vary subject to a minimum of 6 months and a maximum of 2 years.

Eligible organization/ Individuals:

- Agricultural Produce Market Committee
- Agri-Entrepreneur
- Central sponsored Public-Private Partnership Project
- Farmer
- Farmer Producers Organization
- Federation of Farmer Produce Organizations
- Joint Liability Groups
- Local Body sponsored Public-Private Partnership Project
- Marketing Cooperative Society
- Multipurpose Cooperative Society
- National Federations of Cooperatives
- Primary Agricultural Credit Society
- Self Help Group

- Federations of Self-Help Groups
- Start-Up
- State Agencies
- State Federations of Cooperatives
- State-sponsored Public-Private Partnership Project

Eligible projects:

The scheme will facilitate the setting up and modernization of key elements of the value chain including

A. Post Harvest Management Projects like:

I. Supply chain services including e-marketing platforms
II. Warehouses
III. Silos
IV. Packaging units
V. Assaying units
VI. Sorting and grading units
VII. Cold stores and cold chains
VIII. Logistics facilities
IX. Primary processing centers
X. Ripening Chambers
XI. Waxing plants

B. Viable projects for building community farming assets including –

I. Organic inputs production
II. Bio-stimulant production units
III. Infrastructure for smart and precision agriculture.
IV. Projects identified for providing supply chain infrastructure for clusters of crops including export clusters.
V. Projects promoted by Central/State/Local Governments or their agencies under PPP for building community farming assets or post-harvest management projects.

Size of financing facility and eligible beneficiaries:

Rs. 1 Lakh Crore to be provided by banks and financial institutions as loans to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations(FPOs), Self Help Group (SHG), Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups and Central/State agency or Local Body sponsored Public Private Partnership Projects.

PACS that have adopted digitization for handling their operations will be given preference under this scheme.

Participating institutions:

All scheduled commercial banks, scheduled cooperative banks, Regional Rural Banks (RRBs), Small Finance Banks, Non-Banking Financial Companies (NBFCs), and National Cooperative Development Corporation (NCDC) may participate to provide this financing facility, after the signing of the Memorandum of Understanding (MoU) with National Bank for Agriculture and Rural Development (NABARD)/DACandFW.

Sector-specific focus:

24% of total grants–in–aid under the scheme should be utilized for SC/ST entrepreneurs (16% for SC and 8% for ST). Besides this, lending institutions will ensure adequate coverage of entrepreneurs belonging to women and other weaker segments of society. It has to be ensured that the benefits of the scheme are inclusive and accrue to the intended beneficiaries.

Table 31: Crop-wise eligible PHM and Primary processing activities

S. No	Crops	Eligible PHM and Primary processing activities	Not eligible under AIF
1	Cereals (Wheat, Paddy, etc.)	➢ Cleaning ➢ De-stoning ➢ Sorting and grading ➢ Hulling ➢ Milling ➢ Pounding ➢ Grinding ➢ Tempering ➢ Parboiling ➢ Soaking ➢ Drying ➢ Sieving ➢ Irradiation	➢ Fermentation ➢ Baking ➢ Puffing ➢ Flaking ➢ Frying ➢ Extrusion ➢ Blending ➢ Roasting
2	**Fruits and Vegetables**	➢ Washing ➢ Cleaning ➢ Drying ➢ Sorting ➢ Grading ➢ Blanching for primary processing ➢ Cooling ➢ Waxing	➢ Dehydration ➢ Concentrated products ➢ Canning ➢ Juice extraction ➢ Sterilization

Table 31: Crop-wise eligible PHM and Primary processing activities			
S. No	**Crops**	**Eligible PHM and Primary processing activities**	**Not eligible under AIF**
		➢ Conditioning	
3	**Oilseeds**	➢ Cleaning ➢ De-stoning ➢ De-husking (decorticating machines) ➢ Winnowing ➢ Oil extraction (Ghani, hydraulic press, etc.	➢ By-product utilization ➢ Refining ➢ Neutralization ➢ Bleaching
4	**Pulses**	➢ Cleaning ➢ De-stoning ➢ Drying ➢ Sorting and grading ➢ De-husking ➢ Splitting ➢ De-hulling ➢ Milling ➢ Irradiation	➢ Canning ➢ Besan ➢ Papads ➢ Pulse based foods ➢ Puffed chickpea ➢ Pulse polishing
6	**Sugarcane**	➢ Cane unloading ➢ Cleaning ➢ Cane breaking ➢ Cane milling ➢ Straining ➢ Evaporators ➢ Centrifugation ➢ Storage tanks ➢ Dryers	
7	**Spices**	➢ Cleaning ➢ Drying ➢ Sorting ➢ Boiling ➢ Polishing ➢ Grinding ➢ Packaging ➢ Storage ➢ Irradiation	➢ Roasting ➢ Sterilizing ➢ Thermal treatment

Table 31: Crop-wise eligible PHM and Primary processing activities			
S. No	**Crops**	**Eligible PHM and Primary processing activities**	**Not eligible under AIF**
8	**Coffee**	➢ Cleaning ➢ Drying of cherries ➢ Washing ➢ Hulling ➢ Pulping	➢ Roasting ➢ Grinding ➢ Extraction
9	**Cashew**	➢ Cleaning ➢ Streaming in boiler ➢ Shell cutting ➢ Drying ➢ Peeling ➢ Grading ➢ Packaging	

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 rajma crop 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

There is no negative impact on the environment in processing rajma crops. There are no harmful bi-products released in processing the rajma crop in the district.

3.17 Cluster Actors

Almost 155 workers are engaged in the rajma processing units out of which 90% are female workers and 10% of the total employees are male. 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

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

Unit Owners

Approximately 21 enterprises are operating in the district. The majority of the units in the district are primarily involved in rajma crop primary processing.

Raw Material Supplier-

- Rajma 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. rajma crop is available in the district

Enterprise Promotion Councils

An enterprise promotion council does not exist in the district.

Marketing Players

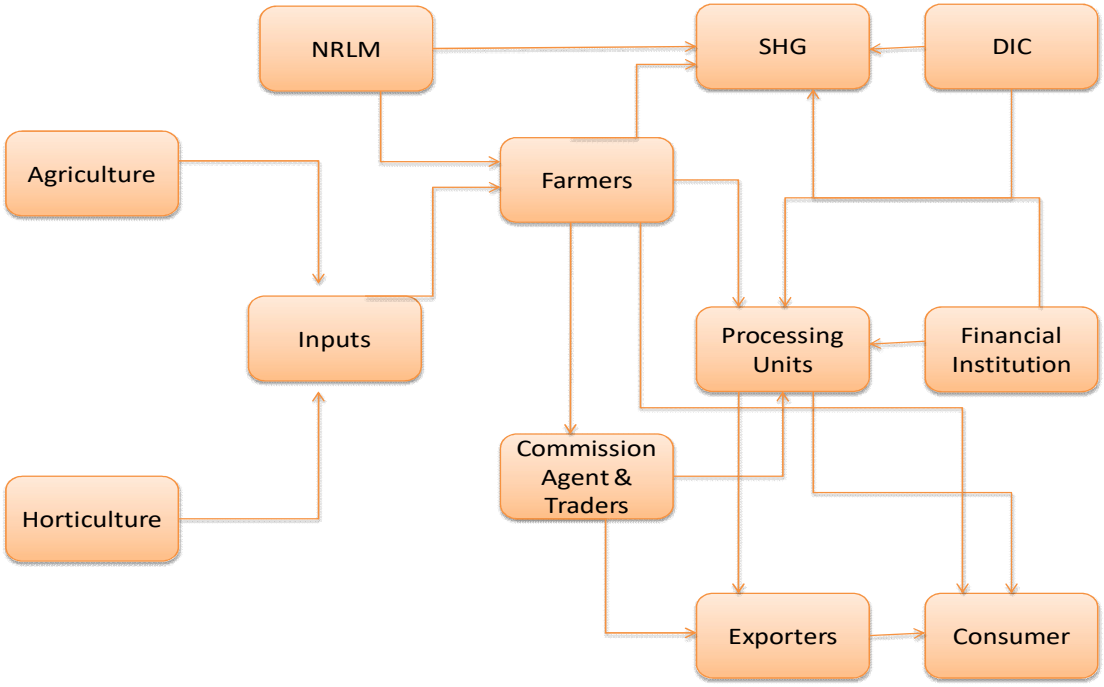
There are no major marketing players in the district. Farmers are selling the produce across the district and traders buy the produce from farmers and distribute it to other districts and states.

3.18 Existing Government Schemes

All schemes from MOFPI, Nagaland government, and PMFME are mentioned in detail in point number 2.1, 2.2 and 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 (25 to 30 INR Per Kg) and the traders are further selling the produce t the wholesalers (30 to 35 INR Per Kg). Processing enterprises are purchasing from the traders or the wholesalers in the district at the average price of INR 40 per kilogram and selling the processed products to the retailer (INR 100 to 105 Per Kg) in the district and retailers in other districts. A retailer in the district sells the produce to the consumer (105 to 110 INR per Kg) in the district.

Table 32: Value chain of the produce

S. No	Particulars	Activities	Purchasing price (Per Kg)	Selling price (Per Kg)	Difference in (Rs)
1	Farmer	Cultivation		25 to 30	
2	Trader	Primary processing, Storage, and Transport	25 to 30	30 to 35	5 to 10
3	Microprocessor	Processing (10% crop waste (Split grains, stones, other metals, etc.)	35 to 40	100 to 105	65-70
4	Retailer	Storage and distribution	100 to 105	105 to 110	5-10

Source- Primary survey

3.21 Product Cost Analysis

It is estimated that INR 72.5 expenditure was incurred in processing the 1-kilogram rajma crop processing. Revenue generated by selling a 1-kilogram rajma crop is INR 100. Net profit incurred in the processing of 1 Kg rajma crop is INR 27.5 with a B: C ratio of 1.4. 90% of the whole rajma is recovered in processing the rajma crop.

Table 33: Product cost analysis

S. No	Particulars	Cost per Kg
	Expenditure	
I	Variable cost	
i	Raw material- Kidney Beans	45.0
	Processed rajma (90% recovery)	49.5
	Total	49.5
ii	Wages	5.6
iii	Electricity bill	1.2
iv	Packaging material	10.0
v	Transportation (Loading and Unloading charges)	5.0
	Total Variable cost	71.3
II	Miscellaneous	1.2

Table 33: Product cost analysis		
S. No	Particulars	Cost per Kg
	Total expenditure (Variable cost+ Miscellaneous)	72.5
	Revenue	
	The selling price of the Processed rajma	100.0
	Revenue	100.0
	Profit (Revenue- Expenditure)	27.5
	B: C Ratio	**1.4**

3.22 SWOT Analysis

Table 34: SWOT analysis	
Strength	**Weakness**
• Abundant availability of the raw material in the district • Organic production of the rajma crop in the district • Strong domestic demand for processed rajma crops in the district.	• The industry is small, unorganized, and scattered. • Lack of awareness about the government promoting schemes and policies for the processors in the district • Lack of funds and financial support to purchase advanced machineries and equipment like vibrating pre-cleaner, De-stoner, Magnetic separator, Gravity Separator, Color sorting machine, and packaging machine. • Processing the district is only confined to primary processing. Lack of secondary processing like rajma flour, canned rajma, etc. • No formal organization or cluster for the rajma processing in the district.
Opportunities	**Threats**
• Opportunity to create the brand for the rajma 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 rajma flour and canned rajma. • The product can be sold through exhibitions, events, online stores, and distributor networks. • There is tremendous scope to cater to foreign	• 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.

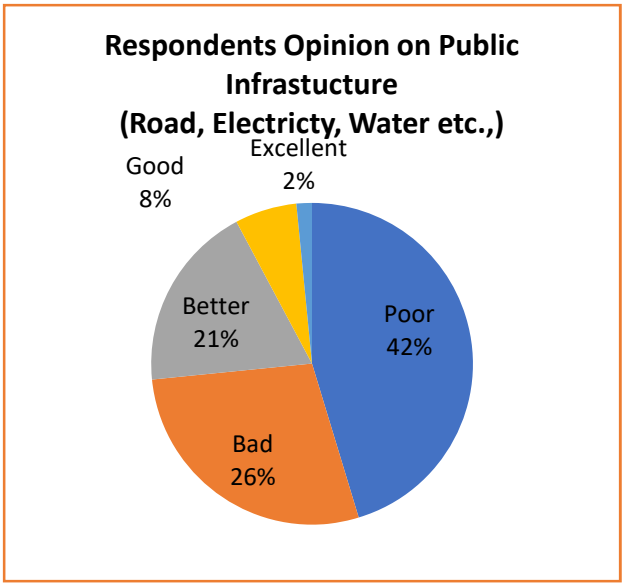
markets for the export of value-added products of the rajma crop.	

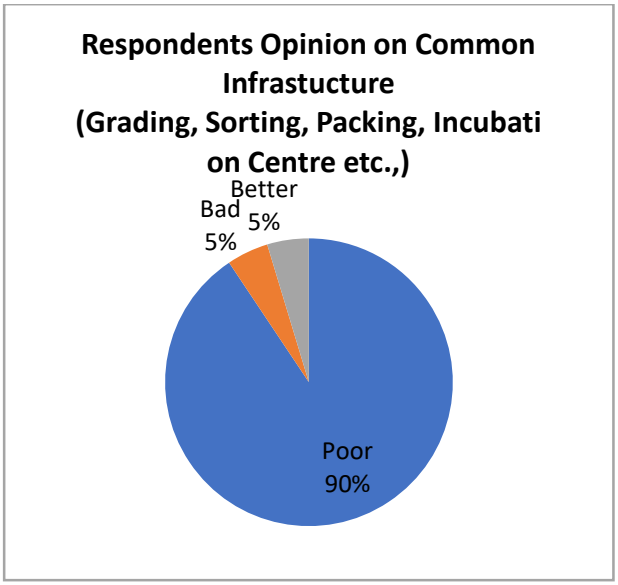
5. Stakeholder Consultation

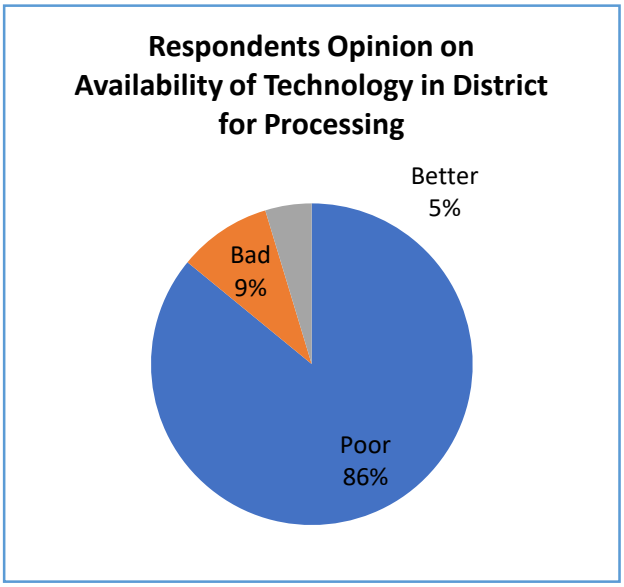
Individual Meetings –

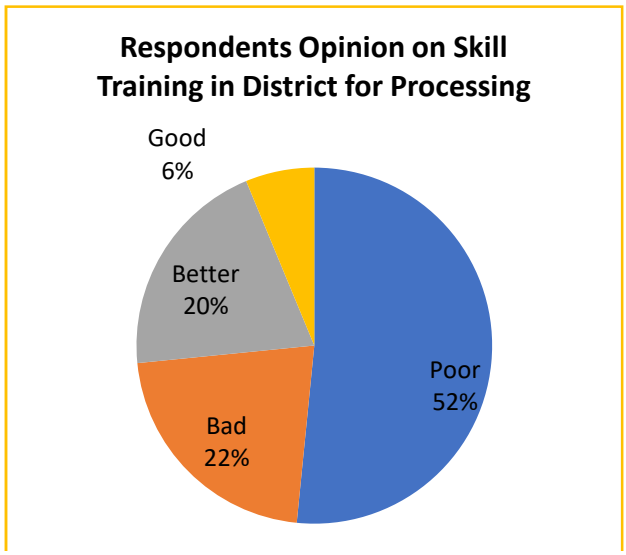
A Survey of 12Kholar processing units is done through face-to-face meetings. To understand their perspective about business and other factors related to processing industries. All the information mentioned in the questionnaire is filled in individual meetings.

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









Agenda Points and discussions

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 center, grading, sorting, and packing units
- Transportation is a huge problem in the district
- The marketing of products is a challenge in the district due to logistic problem
- There is a huge scope for organic pineapple products in the district as well as in nearby districts
- There is a high 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.

Need Assessment and Gap Study

Table 35: Assessment and Gap Study	
Gaps	**Remarks**
Secondary Processing	• Kholar processing in the district is confined only to the primary processing i.e. drying, cleaning, grading sorting, and packaging of the dry beans. • It is suggested to increase awareness among the processors about the secondary processing lines like rajma flour, and canned rajma which have huge demand in the domestic and international market. • It is suggested to promote the Kholar crop produced in the district as 'Organic produce' and can cater premium segment of the market
Technology	• There is no use of advanced technology or machine-like Vibrating pre-cleaner machine, De-stoner, Magnetic separator, Gravity Separator, Color sorting machine, and packaging machine. • It is suggested to provide the machinery for the processing enterprises at subsidized processes to increase the quantity of crop processing in the district.
Public 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 rajma crop and processed rajma based products from the districts to other districts and states.
Testing Facilities	• There are no proper testing labs in the Kiphire 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 Vibrating pre-cleaner machine, De-stoner, Magnetic separator, Gravity Separator, Color sorting machine, and packaging machine 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 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.

Table 35: Assessment and Gap Study Gaps	Remarks
	• 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 rajma procesing in the district as there is no existing infrastructure. • There is enough scope for rajma processing in the district due to the abundant availability of raw materials and demand for canned rajma and rajma flour 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.

S. No	Particular	Response Count					
	Ratings	**1**	**2**	**3**	**4**	**5**	**Total**
1	Public infrastructure such as roads for backward and forward linkages	21	0	0	0	0	21
2	Access to common facilities such as grading, sorting, packaging, cold chain facilities, etc.	20	0	1	0	0	21
3	Access to testing facilities	21	0	0	0	0	21
4	Compliance with standards and the frequency of inspections from the safety regulators	17	4	0	0	0	21
5	Skill training needs	0	21	0	0	0	21
6	Manufacturing practices	20	0	1	0	0	21
7	Technologies Available	20	1	0	0	0	21
8	Access to finance	1	13	7	0	0	21
9	Access to mentorship/ service	19	2	0	0	0	21
10	Awareness of Govt Policies among micro /small manufactures	2	19	0	0	0	21
11	Awareness of ODOP products in the District	19	2	0	0	0	21
12	Marketing/sales facilities	2	18	1	0	0	21
13	Facilities for the workers	20	1	0	0	0	21

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 and 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 and branding to improve their business.

7. Recommendations

7.1 Project strategy and Interventions

Context of ODOP Processing (Kholar)

As part of our primary survey, we interviewed the above 21 food processing units that are involved in processing rajma products (Drying, sorting, and grading). 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 and packed. Few enterprises exporting primarily processed to other districts and states through existing traders are wholesalers.

Table 36: Proposed number of enterprises			
S. No	**Particulars**	**Commodities**	**Number of units**
1	ODOP (Existing Enterprises-Primary processing)	Rajma-based products	21
2	Non-ODOP (Individual Potential Enterprises)	Pickles- Naga chili, bamboo pickle, Fish pickle, and Meat pickle. Banana Based products Maize based products Thanamir apple products Ginger based products Gooseberry based products Mango based products	95
3	Non-ODOP (Group Potential Enterprises)	Pickles- Naga chili, bamboo pickle, Fish pickle, and Meat pickle. Banana Based products Maize based products Thanamir apple products Ginger based products Gooseberry based products Mango based products	12
	Source-Primary Survey		

Proposed fund allocation:

A total of INR 25.4 Cr. fund is proposed for the Kiphire district for the up-gradation of 128 existing and new units in the district. Among the total fund, INR 15.5 Cr. fund is proposed to upgrade the 116 individual units and 1.63 Cr. fund is proposed to upgrade the 12 groups in the district. It is proposed to establish one incubation center and one common infrastructure in the district. INR 1.3 Cr. and 0.13 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 37: Proposed fund allocation		
Intervention	**Target**	**Amount (Cr.)**
Capital investment in plant and machinery (Individual units)	To upgrade and scale up the production process for 116 Micro Units (The average fund required per unit is 13.4 lakh)	15.5
Capital investment in plant and machinery (Group units)	To upgrade and scale up the production process for 12 Groups (The average fund required per unit is 13.4 lakh)	1.63
Incubation center	One incubation center (IC) is proposed for the district. Cost per IC 2.75 Cr.	2.75

Table 37: Proposed fund allocation		
Intervention	Target	Amount (Cr.)
Common infrastructure	One common infrastructure facility (CIF) is proposed for the district. Cost for the CIF 4.0 Cr.	4.00
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 128 individuals. (2 people to be trained from each enterprise/group)	0.13
Total		**25.4**

Expected Government assistance:

A total of INR 25.4 Cr. fund is proposed for the Kiphire district for the up-gradation of 128 existing and potential new units in the district. INR 10.90 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Table 38: Expected Government assistance					
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)	116	0.134	15.50	0.35	5.43
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	12	0.129	1.55	0.35	0.54
Common Infrastructure	1	4.00	4	0.35	1.4
Incubation Cum Custom Hiring Centre	1	2.75	2.75	1	2.75
Branding and Marketing (Total no. of Units/group)	128	0.010	1.30	0.5	0.65
Training and Mentorship (No. of the individual)	128	0.0010	0.13	1	0.13
Total			**25.4**		**10.90**

7.2 Vision Statement and Key Objectives for SLUP

Vision Statement: To increase the quantity of rajma 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 39: 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.
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 40: Proposed interventions

S. No	Particulars	Recommendations	Cost (Cr.)

Table 40: 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 95 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 rajma crop in the district. Few SHGs are actively involved in the primary processing of the rajma crop and selling it to local retailers. 1.6 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 primarily processed rajma crops 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 employees in the food processing enterprises received training in the district. Skill development training

is essential in handling the machinery, and the standardized process of processing and packaging the produce.

A fund of 13 lakhs is proposed for the skill development of the employees working in the local food processing enterprises.

8. Key Impacts

Table 41: 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:

List of FPOs in the district

S .No	Name of the FPO	Location	Contact details	Total No. of Registered members	Produces/ Products manufactured
1	Kiphire District Organic Farmers Cooperative Society Ltd.	Kiphire Town, Kiphire	Luhimong. K 9612888230	30	Kholar, Soyabean, Maize, Ginger and Cardamom etc
2	New Vongti village Apiculture and Allied C.S Ltd	New Vongti Village, Kiphire	Lenpithong Paul 7085319020 8729934807	35	Honey Processing
3	Suvi Fruit and Vegetable Growers Marketing C.S Ltd	Kiphire Town, Kiphire	Thsachumla Sangtam 8119822358 8787548306	25	Juice processing (Mango, Orange, Gooseberry, Peach Fruit, and Wild apple), Banana Chips and Tapioca Chips, Yongchak/Tree Bean Pickle etc.
4	Kuphulo Agri and Allied C.S Ltd	Phuvkiu Village, Kiphire	Bendang Yim 8974028451	30	Orange, Pinapple and Mango
5	Longthri Agri and Allied C.S Ltd	Longthonger Village, Kiphire	T.L Chuba 9612094957 Lipongse 9366584491	28	Fruit and Vegetable

S .No	Name of the FPO	Location	Contact details	Total No. of Registered members	Produces/ Products manufactured
6	Anar Agri and Allied C.S Ltd	Seyochung village, Kiphire	Thsingoto 8787548306	30	Fruit and Vegetable (Wild apple)
7	Tutheze village Apiculture and allied C.S Ltd	Tutheze Village, Kiphire	Ariba 7005467715	25	Honey processing
8	USBLA Agri and Allied C.S ltd	Mission Compound Ward, Kiphire Town	8974539238	80	Juice processing (Gooseberry, pineapple, lemon) Banana Chips etc
9	S.P.K Weaving and Industrial C.S Ltd	Bazaar ward, Kiphire.	9612864892	30	Meat processing (Pickle)
10	Achomang MPCS Ltd	Mission compound ward, Kiphire Town.	8837201903	30	Consumer products (Biscuits and Snacks)

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

The Nagaland State Co-operative Marketing and 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 and 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

S. No	Type of Society	Kma	Dmp	Mkg	Tsg	Wka	Zbto	Phk	Mon	Peren	Kpre	Lglg	Mba	Pftr	Stk	Total
	Education and 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 and 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 Kiphire 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 (In MT)
1	Lovi	Shotumi B	9366775958	7	Wild Apple Jam,Soyabean Fermentation,Banana Chips, Donuts	Local Market	0.5
2	C.W	Seyochung Village	7085422103	8	Chili Pickle, Donut	Local Market	0.2
3	Nilo	Lukhami	7085122331	7	Chilli Pickle, Banana Chips,	Local Market	0.5
4	Asoko	Longmatra Village	8132040740	8	Banana, Gooseberry, Mango	Local Market	0.2
5	Apisa	Ngoromi	8415933624	9	Banana, Gooseberry, Papaya	Local Market	0.2
6	Friends	Sanphure	8729802058	8	Banana, Pineapple	Local Market	0.5
7	Mutsaki A	Yingshikur	8837207031	7	Ginger	Whole Sale	2
8	Sangpu SHG	Pungro Village	7630804568	0	Seasonal Vegetables And Fruits	Sesuyee Rural Hut, Pungro Village	0.98
9	Vitan SHG	Pungro Village	8119889981	0	Seasonal Vegetables And Fruits	Sesuyee Rural Hut Pungro Village	0.42
10	Zukhe SHG	Pungro Village	6009903149	0	Seasonal Vegetables And Fruits	Sesuyee Rural Hut Pungro Village	0.73
11	Lotus SHG	Phuvkiu	8787631759	0	Sale Of Locally Made Biscuits	Village	0.1
12	Ruhle SHG	Phuvkiu	9862535729	0	Sale Of Locally Made Biscuits	Village	0.1
13	Farmer SHG	Phuvkiu	8730040302	0	Fruits And Groundnuts	Village	0.56
14	Aronti SHG	Chikiponger	9862282500	0	Sale Of Ginger And Garlic	Village	0.6

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 (In MT)
15	Soyabean SHG	Longtsonger	8730875981	0	Sale Of Kholar (Beans) And Soyabean	Village And Nearby Villages	1.2
16	Pokphur Vlo	Pokphur	600940519	0	Sale Of Cabbage	Village And Kiusam Town	0.3
17	Lily SHG	Pokphur		0	Sale Of Cabbage And Garlic	Village	0.4
18	Limrongdi SHG	Pokphur		0	Cabbage	Village	0.3
19	Tukin SHG	Pokphur		0	Potato	Village	0.06
20	Tsangreh SHG	Pokphur		0	Garlic	Village	0.08
21	Koktsu SHG	Pokphur		0	Garlic	Village	0.02
22	Taikim SHG	Pokphur		0	Kholar (Kidney Beans)	Village	0.48
23	Sangpin SHG	Pokphur		0	Cabbage	Village	0.3
24	Atanki SHG	Zaonger	8414951210	0	Sale Of Kholar (Kidney Beans)	Village	0.048
25	Shotando SHG	Zaonger	8131924837	0	Sale Of Ginger	Village	0.25
26	Thulun SHG	Zaonger	8414964326	0	Sale Of Peas	Village	0.03
27	Sanjiso SHG	Zaonger	8731821309	0	Sale Of Ginger	Village	0.26
28	Lunso SHG	Zaonger	7628835360	0	Sale Of Kholar	Village	0.5

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 (In MT)
29	Khangtopung SHG	Zaonger	7630001529	0	Sale Of Kholar (Kidney Beans)	Village	0.5
30	Ariako SHG	Zaonger	7629002790	0	Sale Of Kholar (Kidney Beans)	Village	0.5
31	Lunsotsu SHG	Zaonger	9612295741	0	Sale Of Kholar (Kidney Beans)	Village	0.5
32	Rose SHG	Vongva	9862439233	13	Sale Of Turmeric	Community Facility Centre, Phuvkiu	0.1
33	Lotus SHG	Vongva		13	Sale Of Ginger And Kholar (Kidney Beans)	Village	0.5
34	Li-Tsashi	Cedeyevong	9862439233	10	Sale Of Turmeric And Kholar (Kidney Beans)	Community Facility Centre, Phuvkiu	0.5
35	Thulun SHG	Zhimkiur	7628852658	0	Traditional Shaw, Sale Of Chicken	Village	0.24
36	Laso SHG	Zhimkiur	8731828860	0	Sale Of Chicken	Village	0.3
37	Thorun SHG	Zhimkiur	7005727843	0	Traditional Shaw, Sale Of Chicken	Village	0.42
38	Nungri SHG	Zhimkiur	8730866729	0	Sale Of Vegetables	Village	0.1
39	Shorun SHG	Luthure	9612257114	0	Ginger Pickles, Sale Of Vegetables, Traditional Shawls And Sale Of Chicken	Village	0.88
40	Khunongtsu SHG	Luthure	8974918403	0	Sale Of Traditional Shawls, Sale If Pork And Poultry	Village	0.56
41	Elen SHG	Luthure	9862492725	0	Sale Of Vegetables	Village	0.067

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 (In MT)
42	Thorun SHG	Luthure	9612588620	0	Sale Of Vegetables	Village	
43	Aretsu SHG	Luthure	9366281534	0	Sale Of Vegetables	Village	
44	Thulen SHG	Luthure	8731828526	0	Sale Of Vegetables	Village	
45	Tsulen SHG	Luthure	8731051296	0	Sale Of Vegetables	Village	