SLUP

(STATE LEVEL UPGRADATION PLAN)

for

PHEK DISTRICT
IN THE STATE OF NAGALAND

Prepared by

TransGraph Consulting Pvt. Ltd

TRANSGRAPH
RESEARCH - CONSULTING - TECHNOLOGY
commodity market mentors

www.transgraph.com | www.transrisk.net

Table of Content

List of Tables

List of Figures

SECTION II: STUDY FOR ODOP PRODUCTS and 4-5 MAJOR NON-ODOP PRODUCTS

Executive Summary

Agriculture is the main occupation in the district. Jhum cultivation and Terrace Rice Cultivation (TRC) are predominant. The main crops are Rice, Maize, Millet, etc. Besides agriculture varieties of vegetables are found in the district. Phek was a sub-Division under the Kohima district. The district is inhabited by three major tribes, the Kheza, the Chokhri, and the Pochury.

The total area under agricultural crops in the Phek district is 40,036 hectares with a production of 96,016 MT and total area under horticultural crops is 68,783 hectares with a production of 145,139 MT.

Kiwi fruit based value added products is chosen as ODOP product in the district and Honey based value added products and Tree Tomato based value added products is identified as NON-ODOP products for the district.

Kiwi crop was cultivated on 109 hectares of land in Phek, with annual production of 327 MT during the year 2019-20. Phek had the largest area under cultivation of kiwi contributing 41% of the entire area of Nagaland under Kiwi cultivation.

The district of Phek is considered backward as far as Industrial Activity is concerned. Traditionally, the people in the district work on metal with simple technology but most of the production is meant for household needs and requirements.

Currently, in the district approximately 99 per cent of kiwi production is not getting processed and 0.5 to 1 per cent of the production is diverted for kiwi fruit based value added products such as Squash, Jam, Jelly, Dried Slices etc., and the majority of the product is directly sold in the market for fresh consumption.

Major Gaps

Technology: Lack of awareness of food processing technology, processors do not know who to approach for proper machinery such kind of issues need to be addressed in the district. Solution is to provide advance technology to increase the production of finished goods & it will create less dependence on the workers.

Machinery: Various advanced machines require to boost the processing, major machinery requirement are Slicers, Grinder, Fruit cutting machinery, Mini sealer, Juice extractor, Automatic washers, peelers, Dryers, Packing machines, dehydrators, etc. Solution is that the government should provide major machines at subsidized rate.

Public Infrastructure: Good quality road is the basic constraint in infrastructure, almost every respondent mentioned about quality & connectivity of roads. Due to the poor quality of roads, transportation is getting affected.

Common Infrastructure: The district is lack of common infrastructure facilities such as Grading and Sorting Units, Cold Storages, Pack houses, Refer Vans etc., the solution is to establish one common infrastructure facility and one incubation centre at district head quarters.

Skill Training: There is a shortage of skilled labor in the kiwi processing industry and there are no proper skill training facilities available in the district. At present only a few skilled laborers are available in the district and for the rest skill development program needs to be conducted by the concerned department.

Proposed Intervention

A total of INR 24.13 Cr. fund is proposed for the Phek district for the up-gradation of 117 existing and potential new units in the district. INR 10.49 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Intervention	Target No. of units	Total Cost (Cr.)	Subsidy per unit	Govt. assistance (Cr.)
Capital Investment in Plant and Machinery (Individual units)	106	14.6	35%	5.11
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	11	1.46	35%	0.511
Common Infrastructure	1	4	35%	1.4
Incubation Cum Custom Hiring Centre	1	2.75	100%	2.75
Branding and Marketing (Total no. of Units/group)		1.2	50%	0.6
Training and Mentorship (No. of the individual)	234	0.12	100%	0.12
Total		24.13		**10.49**

1. Agriculture Profile of the District (ODOP)

About District

The name of the district Phek is derived from the word "Phekrekedze" meaning watch tower. Phek was a sub-Division under the Kohima district. The district is inhabited by three major tribes, the Kheza, the Chokhri, and the Pochury. There are at least five linguistics groups in the District, namely the Chokri, the Khezha, the Pochury, the Sapu, and the Semas.

Weather and Climate

The summers are moderately warm with the average temperature being 27 °C without exceeding 32 °C. Monsoon starts towards the end of May and is over by the end of September. Winters are cold with the temperature dropping to 0 °C in the coldest months of January and February. The average annual rainfall is 1,527mm.

Agriculture is the main occupation in the district. Jhum cultivation and Terrace Rice Cultivation (TRC) are predominant. The main crops are Rice, Maize, Millet, etc. Besides agriculture varieties of vegetables are found in the district and also engage in salt making (in the Meluri area), paddy cum fish rearing, making fruit juice, etc.

Demography

As per the 2011 census, the Phek district has a population of 163,418. Phek has a sex ratio of 951 females for every 1000 males, and a literacy rate of 79.13%. Gender-wise, male and female literacy were 84.53% and 73.50% respectively.

The initial provisional data released by census India 2011, shows that the density of Phek district for 2011 is 81 people per sq. km. 85% of the population lives in rural areas of the district which are directly or indirectly engaged in agriculture & allied activities.

Table 1: Phek District Demography

Sl.No	Demographic Label	
1	Area	2026 sq Km
2	Total Population	163418
3	Density of Population	81
4	No of Male	83743
5	No of Female	79675
6	Average Literacy Rate	78.05%
7	Literacy rate of Male	83.66%
8	Literacy rate of female	72.21%

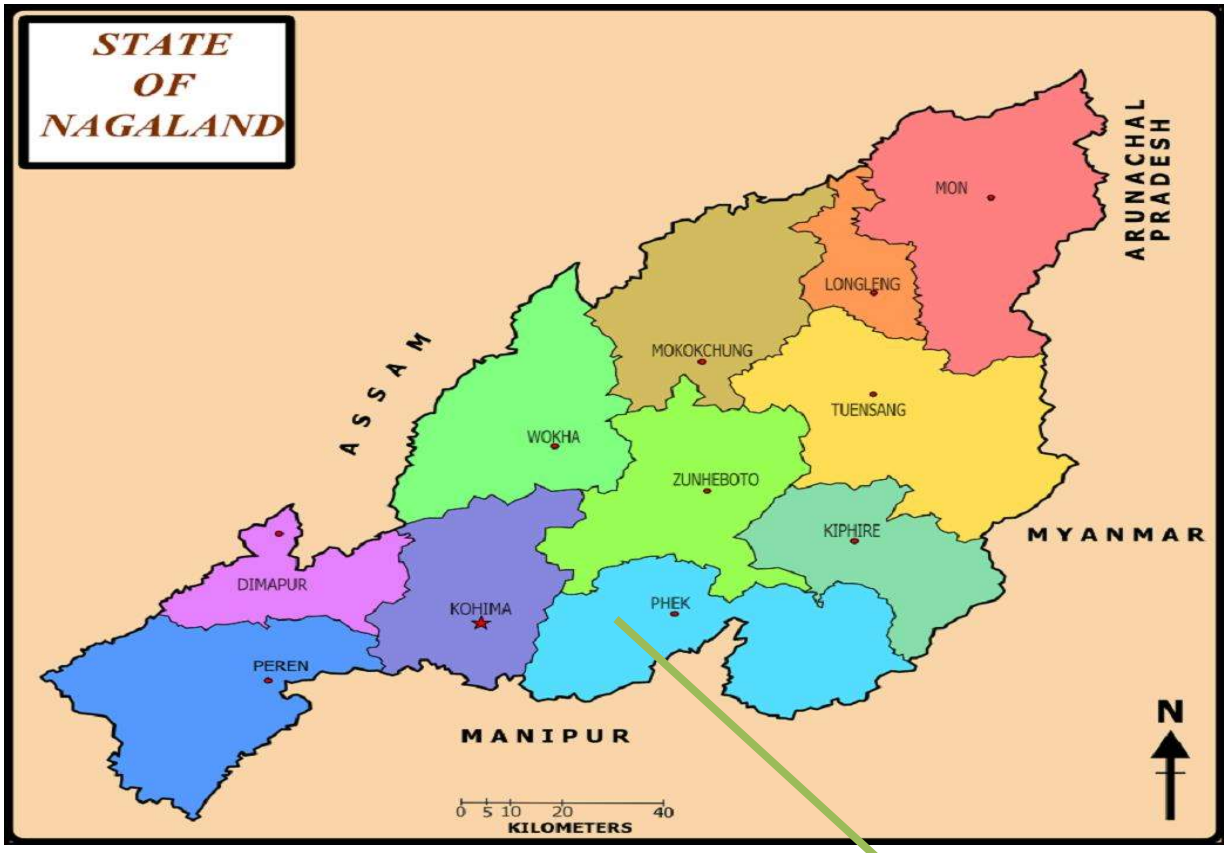
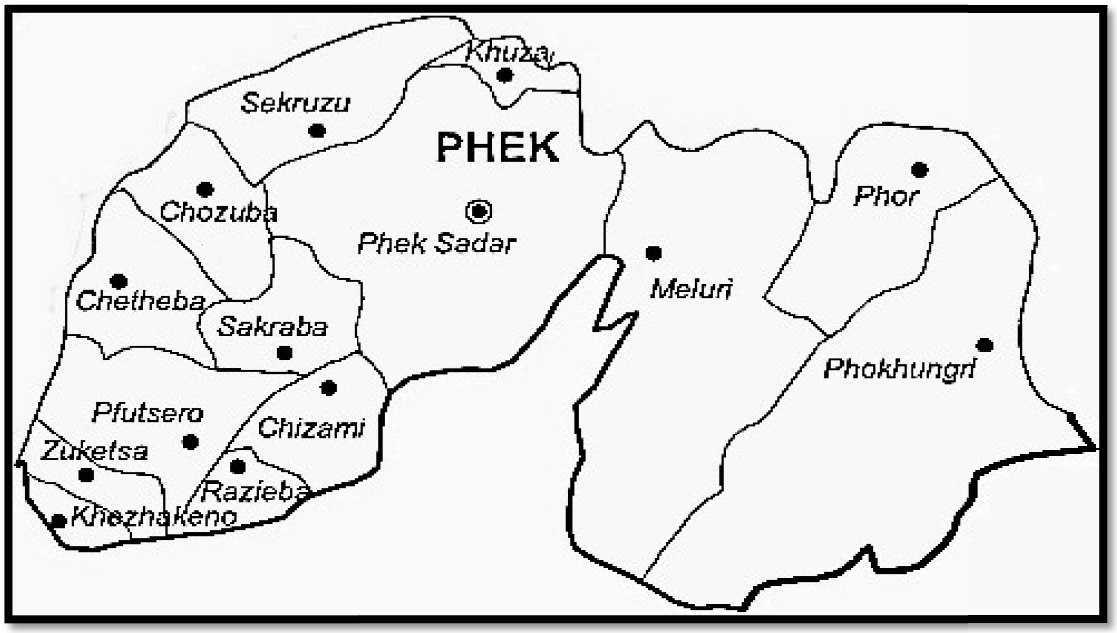


Figure 1: Phek District Map



a. Agricultural produce was chosen as ODOP

Agricultural Crop Scenario in Phek District

During 2019-20, the total area under agricultural crops in the Phek district is 40,036 hectares with a production of 96,016 MT. The major crops grown in the district are Paddy, Maize, Sugarcane, Tea, Rapeseed, Mustard, etc., the respective crops area and production are provided in the below table

Table 2: Area and Production of Agricultural Crops in Phek District

Sl.No	Crop	Area (Ha)	Production (MT)
1	WTRC Paddy	15,730	45,512
2	Maize	8,857	17,584
3	Sugarcane	260	11,336
4	Jhum Paddy	1,630	3,254
5	Tea Green	672	3,008
6	Rapeseed Mustard	2,902	2,922
7	Soybean	2,135	2,711
8	Small Millet	2,102	2,362
9	Sweet potato	184	1,564
10	Ricebean/Nagadal	793	915
11	Rajma/Kholar	657	839
12	Wheat	351	641
13	Linseed	660	530
14	Beans	320	439
15	Tur/Arhar	460	420
16	Mesta	244	270
17	Perilla	366	221
18	Cowpea	143	210
19	sun-flower	337	205
20	Sesamum	323	195
21	Jobstear	161	172
22	Lentil	183	150
23	Groundnut	73	84
24	Bajra	70	70
25	Barley	60	70
26	Horsegram	60	70
27	Gram	80	70
28	Black gram	80	70
29	Jowar	60	50
30	Oats	30	30
31	Urd/Moong	30	30
32	Castor	20	10

Table 2: Area and Production of Agricultural Crops in Phek District			
Sl.No	Crop	Area (Ha)	Production (MT)
33	Cotton	3	2
34	Total	40,036	96,016
Source: Department of Agriculture, Phek, Nagaland, 2019-20			

Horticultural Crops Scenario in Phek District

Horticultural Crops include Fruits, Vegetables, Flowers, Spices, and Plantation Crops.

During 2019-20 in the Phek district, the total area under horticultural crops is 68,783 hectares with a production of 145,139 MT. The major horticultural crops cultivated in the district (as per production) are Alstroemeria, Lilium, Cabbage, Tapioca, Banana, Pineapple, Potato, Orange, Green-Chili, etc. and respective crops area and production are provided in below table.

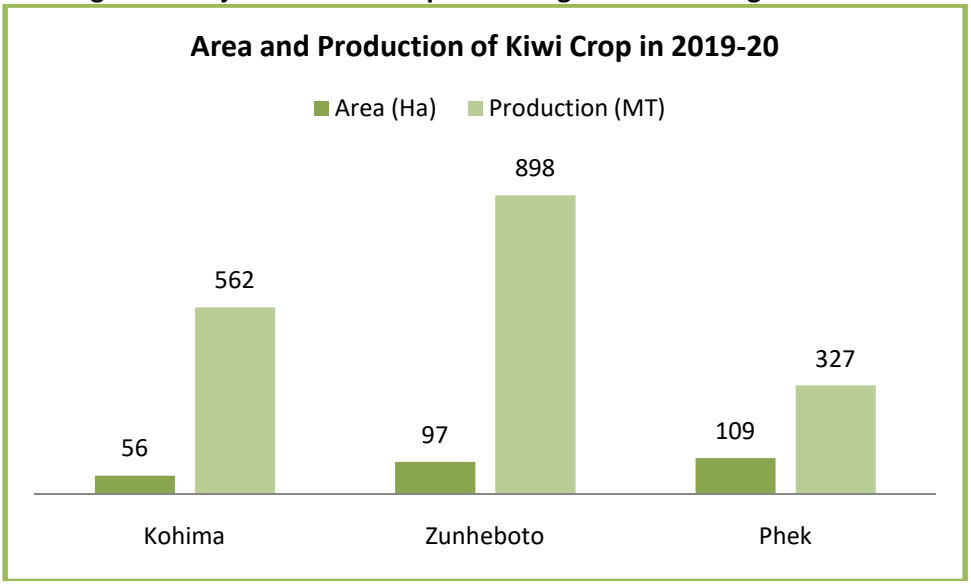
Table 3: Area and Production of Horticultural Crops in Phek District in 2019-20			
Sl.No	Crop	Area (Ha)	Production (MT)
1	Alstroemeria	30,000	30,000
2	Cabbage	1,306	28,782
3	Lilium	30,000	17,875
4	Tapioca	645	9,765
5	Banana	632	9,454
6	Pineapple	490	9,320
7	Potato	750	7,872
8	Kinnow/Mandarin Orange	498	4,482
9	Green chilly	522	3,587
10	Leafy Vegetables (Amaranthus, Kashmiri Sag, Spinach, Celery, etc.)	350	3,148
11	Arbi/Colocasia	237	2,845
12	Ginger	390	2,340
13	Passion Fruit	695	1,738
14	khaddu/pumpkin	75	1,686
15	Sweet Potato	130	1,481
16	Beans (All Including Lab-lab)	156	1,322
17	Tomato	190	850
18	Papaya	118	811
19	Radish	74	760
20	Peas (Green)	122	756
21	Carrot	40	610
22	cucumber	36	554
23	Plum	90	515
24	Aonla/Gooseberry	40	390

Table 3: Area and Production of Horticultural Crops in Phek District in 2019-20			
Sl.No	**Crop**	**Area (Ha)**	**Production (MT)**
25	Garlic	54	372
26	Gauva	44	353
27	Apple	45	338
28	Kiwi	109	327
29	Onion	32	288
30	Mango	31	273
31	Brinjal	36	271
32	Cardamom Large	630	270
33	cauliflower	53	270
34	Watermelon	9	225
35	Jackfruit	12	222
36	Pear	26	204
37	Turmeric	14	180
38	Peach	27	157
39	Okra/Ladies Finger	13	155
40	Lichi	25	142
41	Pomegranate	11	70
42	Grape	11	62
43	coriander seed	15	17
44	Mushroom	0	0
45	**Total**	**68,783**	**145,139**
Source: Department of Horticulture, Phek, Nagaland, 2019-20			

1. Total Production and Acreage of the Produce in the District

Kiwi crop was cultivated on 109 hectares of land in Phek, with annual production of 327 MT during the year 2019-20. Phek had the largest area under cultivation of kiwi contributing 41% of the entire area of Nagaland under Kiwi cultivation.

Figure 2: Major Kiwi Fruit Crop Producing Districts in Nagaland State



Source: (HAPIS 2020)

2. ODOP produce as a percentage of total agricultural produce of the district:

The percentage share of ODOP production to total agricultural production in the district is less than 1% during 2019-20.

3. Perishable nature of the produce;

Kiwi is perishable. The shelf life of kiwi depends upon when they were picked, how they are handled, and how they are stored.

Table 4: Perishable Nature of Value Added Products of ODOP

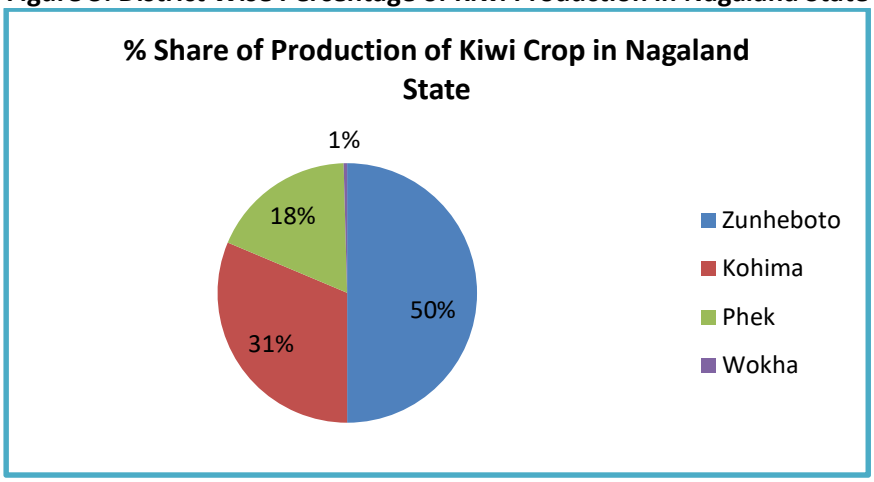
Particulars	Counter	Refrigerator	Freezer
Kiwi (Whole) lasts for	7-14 Days	7-21 Days	10-12 Months
Kiwi (Cut) lasts for	2-4 Hours	4-7 Days	10-12 Months
Kiwi Jam	12-18 Months (Canned)		
Kiwi Candy	12 Months		
Kiwi Squash Drink	12 Months		

Source: (Indiamart 2021)

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

In terms of production, the Phek district contributes only 18% of the entire Kiwi production of Nagaland. Zunheboto district has the highest production of 898 MT contributing 50% of the district, during the year 2019-20.

Figure 3: District Wise Percentage of Kiwi Production in Nagaland State



Source: (HAPIS 2020)

b. Food product chosen as ODOP

1. Total estimated production of the food product or its category chosen as ODOP

Kiwi was cultivated on 109 hectares of land in Phek, with an annual production of 327 MT during the year 2019-20. During the primary survey noticed that farmers/traders/micro unit owners are not involved in the production of kiwi fruit value-added products such as jam, candy, squash, etc; and they are involved only in preprocessing activities like grading and sorting.

2. Total requirement and movement of Raw material or Agricultural produce required for manufacturing this food product.

There are no value-added products of kiwi fruit being manufactured by micro units/traders in the district. More than 99% of the product is under pre-processing and consumed as fresh within the district and also exported to other districts and countries.

2. Identifying Non-ODOP Products

The Non – ODOP of the Phek district are Honey-based value-added products and Tree Tomato-based value-added products.

Honey: An individual in some villages rare Bees in their own house and sell honey in the local market and at certain times companies from other department purchase from them.

Table 5: Identified Value Added Products of NON-ODOP

Sl.No	Commodity	Value Added Products
1	Honey	Baked Products
		Confectionary and Snack Bars
		Beverages and Ice-Cream

Table 5: Identified Value Added Products of NON-ODOP		
Sl.No	**Commodity**	**Value Added Products**
2	Tree Tomato	Tomato Puree
		Tomato Sauces
		Tomato Pickle
		Tomato Chutney etc.,

3. Industrial Profiling

1. Mapping of the Micro, Small, Medium and Large Industries in the District involved in food processing in the District

Industrial Scenario of Phek District

Sl.No	Head	Unit	Particular
1	Registered industrial unit	no	22
2	Total Industrial unit	no	22
3	Registered medium & large unit	no	1
4	Estimated average no of daily workers employed in small-scale Industries	no	935
5	Employment in large and Medium Industries	no	45
6	No Industrial area	no	1
7	Turnover of small-scale Industries	In lacs	55.00
8	Turnover of Medium &large scale Industries	In lacs	45.00

(Source-MSME)

The district of Phek is considered backward as far as Industrial Activity is concerned. 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 & Bamboo products, Stone Tiles, Spinning and Blacksmithy, Food processing units, Carpentry are traditional activities in which a sizeable number of the local people are skilled. Along with traditional activities, The DIC, Chozuba of Phek district can introduce new Schemes for the benefit of Entrepreneur, to take up programs for up-gradation new Technology under M/o MSME, Govt. of India like MSE-CDP, MSE-MDA, TREAD for women, Lean manufacturing, Design clinic, ICT, Bar Code, IPR, etc in long run. Development of agro-processing units like extraction of fibers from pineapple leaves, dehydration unit for ginger and cardamom, and extraction of citronella oil are some potential non-farm activities, which can be developed in the district. New schemes are patchouli cultivation, Tea garden, and vanilla cultivation in the district. Based on the availability of raw material, labor, and other infrastructure, non-farm sector investment in the district can be in the following areas: -

Agro-based	Forest-based	Mineral Based	Textile based	Engineering based	Demand Based
Rice Mill	Agarbati bamboo sticks	Stone crushing	Tailoring unit	Fabrication of grills, iron gates, etc	Auto repair works
Ginger processing (dehydration plant)	Furniture making	Stone cutting & polishing	wool weaving unit	Repairs to machinery	Confectionery unit
Fruit/vegetable preservation/canning centers	Cane and bamboo unit	Stone curving	Handloom unit	Motor works	Electrical Repair unit
Starch production unit	Handicrafts	Boulder mall.	Thread making unit	Printing press	Pickle making
Poultry/ cattle feed plant	wood curving	Stone dressing	Ready-made garments unit	Barbed Wire	Fish dry making
Patchouli, Ginger, Tea garden, Vanilla etc	Broom unit	cement Jally& other products		Agricultural Implements	Cyber café
Food processing products etc	Ayurveda Medicine	Pottery		Tin-smithy	Green vegetables shop etc
Piggery farm	bamboo Mat Door & window frame	Brickfield		Wax candle	
Soya milk and toffee processing unit				Washing Soap	

2. Number of clusters or locations (if any) where the processing of this product happens;

There is no cluster for Kiwi fruit and its value-added products in the district. Only pre-processing is happening at the farmer's level.

3. The number of units engaged with producing the specific ODOP product and 4-5 major non-ODOP products.

There are seven micro units are existed in the district and are actively involved in the processing of a few agricultural-based commodities. Details of the units are provided below the table;

Table 6: Details of ODOP and NON-ODOP Units in the Phek District

Sl.No	Name of the Unit	Contact person Name	Village & Mandal	Contact	Products Name (finished produce)
1	M/s Thuyenuyi Khusoh Beekeeping	Thuyenuyi khusoh	Chozu Basa village, Phek District,	9383150946	Honey (bee) and Triguna honey

Sl.No	Name of the Unit	Contact person Name	Village & Mandal	Contact	Products Name (finished produce)
	unit		Nagaland		
2	Chakhesang Women Multi-Purpose Co. Soc. Ltd.	NEZELU Nyekha	R. Chikri Pfursero , Phek district, Nagaland	8974775883	Squash, Pickle, Jam, Candies (dry) Ready to Serve(RTS)
3	Lirhuwe group	Neikrolo	Losami village , Phek dist.: Nagaland	9612961378	Banana chips
4	Küsazo	Vechitalu Swüro	Chozuba town: Phek dist.: Nagaland	7085654083	Ginger juice, lemon juice and wild apple juice.
5	Kuto ko Krotho	Puhulu Hesuh	Porba Village, Phek dist.: Nagaland	9612584047	Cold juice and squash
6	Rhazhuwe group	Neigupe u Tara	Losatephe village, Phek dist.: Nagaland	986220858	Banana chips, puffed rice, sticky rice cake.
7	Chansu Organic Kiwi Producer Co. Ltd.	Wezete u kronu	Pfutsero	9862462888	

4. Approximate Level (%) of processing happening for ODOP (out of total production) in the district,

Currently, people in the district cultivate the Kiwi and sell it to traders or small processors in the district. There is no significant kiwi processing happening in the district. The major focus is on selling fresh fruits.

Notably, a minimal amount of value addition happens in the kiwi value chain in terms of secondary and tertiary processing. The majority of the product is directly sold in the market for fresh consumption. Thus, there is a presence of potential opportunity to link the processing sector with farmers for better value addition and usage of second-grade kiwi.

Based on the primary survey observation, it is estimated that 0.5% to 1% of Kiwi fruits are diverted for processing in the district.

5. Number of Self Help Groups, Farmer Producer Organisations and Cooperatives currently engaged in the processing of this product.

There's only one unit of food processing in the Phek district, which is known as Chakhesang Women Multi-Purpose Company Society ltd. Located in pfutsero town, it was established in the year 1985 and registered under MSME. Currently, the products are Squash (kiwi), Jam (Kiwi), Candies (kiwi and other fruits) (Dried), Pickles (different items of fruits), and Ready to Serve (RTS). The marketing is within Nagaland State only.

Table 7: Detail List of FPOs for assessment under PM-PME in Phek District

Sl.No	Name of the FPO	Location	Contact details	Total No of Registered members	Produces/ Products manufactured
1	Tsapvuri farming Cooperative Society Ltd. NL/9007 Dated 17.04.2015	Phokhungri Town Dist, Phek	Haratsu. 9612683546	35	Plum Juice, Gooseberry juice & Dried
2	Posy farming Cooperative Society Ltd. NL/8316 Dated 10.11.2015	Meluri Town, Phek	Yutsole 8974741780	25	Gooseberry juice & Dried berry
3	Mathu farming Cooperative Society Ltd. NL/8478 Dated 30.06.2016	Upper Khomi village, Phek	Thupuruda 9862670209	25	Wild apple juice & Dried wild Apple
4	Phek District Organic farmers Cooperative Society Ltd. NL/8791 Dated 13.02.2018	Phek Town, Phek	Theyehuyi 7085176382	30	Ginger juice & powder

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

The Nagaland State Co-operative Marketing & Consumers' Federation Ltd. popularly known as MARCOFED is an Apex Level Co-operative Institution for Marketing 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 undertaking with its Registration No. NL/0222 Dt. 17-08-1968 and based in Dimapur as its Head Office, Nagaland.

TotalNumberofCooperativeSocietiesAson30.01.21.

Sl. No	TypeofSociety	Kma	Dmp	Mkg	Tsg	Wka	Zbto	Phk	Mon	Peren	Kpre	Lglg	Mba	Pftr	Stk	Total
A			**STATELEVELSOCIETIES**													
1	NagalandStateCooperativeBankLtd.		1													**1**
2	MARCOFEDLtd.		1													**1**
3	NagalandStateCoop.Union		1													**1**
4	NagalandApexWeaversFederation		1													**1**
5	NagalandStatePiggeryFederation		1													**1**
6	NagalandStateDairyFederation	1														**1**
7	TheNagalandStateEntrepreneursAssociatesThrift&CreditCoop. FederationLtd.	1														**1**
		2	**5**													**7**
B			**DISTRICTLEVELSOCIETIES**													
1	KohimaDist.MilkUnion	1														**1**
2	DimapurDist.MilkUnion		1													**1**
3	MokokchungDist.MilkUnion			1												**1**
		1	**1**	**1**												**3**
C			**PRIMARYCOOPERATIVESOCIETIES(DISTRICTWISE)**													
1	**LampsC.S.Ltd.**	-	1	-	-	-	-	-	-	-	-	-	-			**1**
2	**ConsumerC.S.Ltd.**	68	24	24	31	9	25	21	12	6	11	2	7	1	-	**241**
	1.PetrolPumpC.S.Ltd.	-	-	1	-	-	-	-	-	-	-	-	1	-	-	**2**
3.	**ServiceC.S.Ltd.**	-	37	16	-	9	4	2	1	6	-	-	4			**79**
	InstitutionC.S.Ltd.	-	1	-	-	-	1	-	-	-	-	-	-			**2**
	TransportC.S.Ltd.	-	2	1	2	-	-	-	-	-	-	-	-			**5**

	CanteenC.S.Ltd.	-	-	1	-	-	-	-	-	-	-	-	-			**1**
	Education&TrainingC.S.Ltd.	1	-	-	-	-	-	-	-	-	-	-	-			**1**
	DryCleaners	1	-	-	-	-	-	-	-	-	-	-	-			**1**
4	**MultiPurposeC.S.Ltd.**	854	974	320	249	426	287	231	97	104	160	35	118			**3855**
5	**MarketingC.S.Ltd.**	10	28	19	28	5	9	13	3	2	5	1	1			**124**
	Trading	-	-	1	-	-	-	-	-	-	-	-	-			**1**
6	**Weaving&Handloom/Knitting /Handicraft/IndustrialC.S.Ltd.**	127	155	37	49	43	76	34	40	22	26	12	7	-		**628**
7	**DairyC.S.Ltd.**	**37**	**58**	**13**	**25**	**6**	**20**	**30**	**17**	**7**	**9**	**1**	**2**		**1**	**226**

Table 8: List of SHGs in Phek District

SL.NO	NAME OF THE SHG	LOCATION	CONTACT DETAILS	TOTAL NO OF REGISTERED MEMBERS	PRODUCES/ PRODUCTS MANUFACTURED	MARKETING DETAILS OF PRODUCES/PRODUCTS	SCALES OF PRODUCTION (IN MT)
1	RAHCHU	KAMI	8731947144	1	NUTRILA SOYA PICKLE	LOCAL MARKET	10 KGS
2	SEZUKRO	ZAPAMI	9089661936	1	KIWI JUICE	LOCAL MARKET	50 LTR
3	RHIPE	LESHEMI	-	1	GOOSEBERRY JUICE	LOCAL MARKET	60 LTR
4	RHIDE	LESHEMI	-	1	GOOSEBERRY JUICE	LOCAL MARKET	65 LTR
5	LINYI	LESHEMI	8732813112	2	GOOSEBERRY JUICE	LOCAL MARKET	125 LTR
6	LUSO	LESHEMI	9862838748	1	GOOSEBERRY JUICE	LOCAL MARKET	60 LTR

SL.NO	NAME OF THE SHG	LOCATION	CONTACT DETAILS	TOTAL NO OF REGISTERED MEMBERS	PRODUCES/ PRODUCTS MANUFACTURED	MARKETING DETAILS OF PRODUCES/PRODUCTS	SCALES OF PRODUCTION (IN MT)
7	LURHI	LESHEMI	-	1	GOOSEBERRY JUICE	LOCAL MARKET	60 LTR
8	DZUKHUPA	LESHEMI	-	1	GOOSEBERRY JUICE	LOCAL MARKET	60 LTR
9	SESO	LESHEMI	9612957341	1	GOOSEBERRY JUICE	LOCAL MARKET	50 LTR
11	KETSHU	LESHEMI	-	2	GOOSEBERRY JUICE	LOCAL MARKET	75 LTR
12	LINYI	LESHEMI	-	1	GUAVA JUICE	LOCAL MARKET	60 LTR
13	LUSO	LESHEMI	9862202767	1	GUAVA JUICE	LOCAL MARKET	60 LTR
14	KEKHRUHI	LESHEMI	-	1	GUAVA JUICE	LOCAL MARKET	65 LTR
15	SEWA	LESHEMI	8413045834	1	GUAVA JUICE	LOCAL MARKET	55 LTR
16	KUTOKO KROTHO	PORBA	9612584047	10	ICE CREAM	LOCAL MARKET	2000 LTR
17	GRACE	PFUTSEROMI	6009903676	10	I) WILDAPPLE JUICE II) LETANU JUICE (LOCAL DIALECT)	LOCAL MARKET	2400 LTR

4. Profiling of existing Micro Enterprises Ecosystem for the District

1. Specialty of the local agricultural produce/food product, varieties available, seasonality, uniqueness, history etc.?

Kiwi fruit is grown in virgin hills Thipuzu village is free from fertilizers or any other chemicals. Farmers use only natural manure and thus the fruits harvested here are healthy, fleshy, juicy, and tasty and claimed as organic by default.

'Organic cultivation' is the unique selling proposition for the Kiwis from the Phek district.

Varieties: Important kiwi varieties cultivated in India are Abbott, Allison, Bruno, Hayward, Monty, and Tomuri.

Seasonality: Planting is usually done in January.

Harvesting: The fruiting period is two months i.e. October and November, the yield in the region is nearly 3-4 MT/ha

2. Infrastructure

a. Essential Machinery or facilities required for the production of the product

Fruit slicer machines, Mini sealer, Juice extractor, Automatic washers, peelers, Dryers, Packing machines, grinders, dehydrators etc.,

b. Existing level of Mechanizationfor ODOP processing within district, in other districts and States.

There is not much processing is carrying out in the district. Only pre-processing is happening manually based on fruit size.

c. Additional infrastructure and amenities are required.

i. Cold Storage
ii. Transportation/Logistics
iii. Refer Vans
iv. Pack House

Incubation Centre: One incubation center is required for every five blocks/taluka in the district.

Common Infrastructure Facility (CIF): One common infrastructure facility needs to be established for every 100 to 120 processing units. CIF should consist of a minimum of four processing lines for various commodities

3. Support Infrastructure:

Good quality roads, Warehouses, Cold storage, Reefer vans, advance machineries is require supportive infrastructure.

Mission for Integrated Development of Horticulture (MIDH)

The mission for Integrated Development of Horticulture (MIDH) is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa, and bamboo. Under MIDH, the Government of India (GOI) contributes 60%, of the total outlay for developmental programs in all the states except states in North East and the Himalayas, 40% share is contributed by State Governments. In the case of the National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute for Horticulture (CIH), Nagaland, and the National Level Agencies (NLA), GOI contributes 100%. MIDH also provides technical advice and administrative support to State Governments/State Horticulture Missions (SHMs)

Integrated Post Harvest Management Support under RKVY

Broad Activity	Sub Activity	Pattern of Assistance	Name of Scheme
Integrated Post Harvest Management	Pack-house / On-farm Collection & Storage unit	50% of the cost, INR 2.00 lakhs per unit with a size of 9m x 6m	Sub Schemes of NHM & HMNEH under MIDH
	Integrated pack-house with facilities for grading, sorting, etc.	35% in general areas, 50% in Hilly, and scheduled areas as credit-linked back-ended subsidy up to INR 17.50 lakhs per unit with size 9m x 18m	Sub Schemes of NHM & HMNEH under MIDH
	Pre Cooling Unit	35% in general areas, 50% in Hilly and Scheduled Areas, as credit-linked back-ended subsidy, INR 8.75 lakhs per unit for 5 MT capacity	Sub Schemes of NHM & HMNEH under MIDH
	Mobile Pre Cooling Unit		
	Cold Storage Units (Construction/Expansion and modernization) (Maximum 5000 MT capacity)	35% in general areas, 50% in Hilly and Scheduled Areas, as credit-linked back-ended subsidy (i) INR 2800/- per MT for Type 1	Sub Schemes of NHM & HMNEH under MIDH
		(ii) INR 3500/- per MT for Type 2	
		(iii) INR 3500/- MT for Type 2 with add-on the component of controlled atmosphere technology	
	Ripening Chamber (maximum of 300 MT)	35% in general areas, 50% in Hilly and Scheduled Areas, as credit-linked back-ended subsidy, up to INR 0.35 lakh/MT	Sub Schemes of NHM & HMNEH under MIDH
	Post-harvest storage and treatment facilities for	40% of the cost, as credit-linked back-ended subsidy up to INR 10.00 lakhs	Sub-schemes of National Bamboo

Broad Activity	Sub Activity	Pattern of Assistance	Name of Scheme
	bamboo		Mission (NBM) under MIDH
	Integrated Post Harvest Management for Commercial Horticulture: Retail Outlet, Pre- Cooling Unit, etc.	35% of the project cost in general areas and 50% of the cost in NE, Hilly, and Scheduled areas up to INR 50.75 lakhs per project.	Sub scheme of National Horticulture Board (NHB) under MIDH
	Cold Storage Units for Commercial horticulture	35% of project cost (50% in NE, Hilly, and Scheduled areas) for capacity above 5000MT, as credit linked back-ended subsidy,	Sub scheme of National Horticulture Board (NHB) under MIDH
		INR 2660/MT for Type 1,	
		INR 3225/MT for Type 2,	
		INR 3500/MT for Type 2 with add-on components of controlled atmosphere technology.	

Source – RKVY 2021

4. Testing

During the primary survey, we observed that no micro and small units are involved in the processing of kiwi-based value-added products. Hence, there is no testing exists in the district but a few new potential entrepreneurs are interested in kiwi processing for them a testing facility is required and the testing lab should be established at district headquarters.

5. Value Chain\Channels of movement

Value Addition at Farm Level: The farmers carry out the manual sorting and grading of the fresh produce based on weight as follows:

Grade	Weight	Market
A Grade	90 gram and above	Export
B Grade	60-90 gram	Domestic/Local
C Grade	50-60 gram	Domestic/Local
D Grade	40-50 gram	Processing

Table 9: Value Chain\Channels of movement of Kiwi Fruit-Primary Processing		
Sl.No	**Particulars (Cost for 1 kg of Kiwi Fruit-Primary Processing)**	**Cost (Rs.)**
I	**Farmers to Traders**	
a.	Raw Material Cost (Kiwi Fruit)	150.0
b.	Loading and Unloading Cost Rs.	1.5
c.	Transportation Cost Rs.	1.0

Table 9: Value Chain\Channels of movement of Kiwi Fruit-Primary Processing		
Sl.No	**Particulars (Cost for 1 kg of Kiwi Fruit-Primary Processing)**	**Cost (Rs.)**
d.	Sub Total 1	152.5
II	**Processor to Wholesaler**	
b.	Garding and Sorting (Labour + Machinery Cost + Miscellaneous) Rs.	3.0
c.	Packaging Cost (Polyethene Material) Rs.	3.0
d.	Marketing Cost Rs.	5.0
e.	Sub Total 2	163.5
f.	Profit Margin of Processor (@ 15%) Rs.	24.5
g.	Processor Selling Price Rs.	188.0
III	**Traders to Wholesalers**	
a.	Loading and Unloading Cost Rs.	1.0
b.	Storage Cost Rs.	2.0
c.	Sub Total 3	191.0
d.	Profit Margin of Wholesaler (@ 10%) Rs.	19.1
e.	Wholesaler selling price Rs.	210.1
IV	**Wholesaler to Retailer**	
a.	Storage Cost Rs.	1.5
b.	Sub Total 4	211.6
c.	Profit Margin of Retailer (@ 15%) Rs.	31.7
d.	Retailer selling price Rs.	243.4
V	**Consumer Purchase Price/kg Rs.**	**243.4**

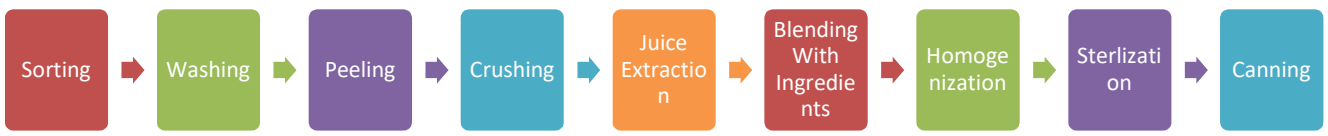
6. Manufacturing Process

a. Product Range

Currently, one FPO is involved in the kiwi fruit processing, and various value-added products produced are Squash (kiwi), Jam (Kiwi), Candies (kiwi and other fruits) (Dried), Pickles (different items of fruits), and Ready to Serve (RTS). The marketing is within Nagaland State only.

b. Production Process and Technology

Kiwi is suitable for making juice as it contains 83% of water. Kiwi Juice can be extracted by using a screw juice extractor. The process includes



Types of machinery:

Grading and Sorting Machine

Kiwi Fruit Slicer

Kiwi Ready to serve (RTS): Capacity 150 MT/per Annum

S. No	Equipment	Quantity	Area (Ft)	Capacity	Price (Lakhs)
1	Cold store	1	9.2 x 8.6 x 10	1500 Kg	6
2	Fruit Washer	1	6 x 4	100 Kg/hr	1.5
3	Pulper	1	3 x 4	100 kg/hr	1
4	Sugar Syrup preparation tank	1	3 ft dia.	100 liters	0.8
5	Mixing/Blending tank	1	3.5 ft dia.	100 liters	0.6
6	Filter press	1	3 x 2	100 liters	0.6
7	Homogenizer	1	4 x 6	100 liters/hr	1.8
8	Pasteurizer	1	7 x 6	100 liters/hr	1.6
9	Filling and Capping	1	8 x 4	Suitable	1.4
10	Weighing balance	1		Suitable	0.06
11	Accessories	1		Suitable	0.5
				Total	**15.86**

Technology

The Kiwi processing units in the district use a simple form of primary processing i.e. cleaning, grading, sorting & packaging of fresh fruits. Only one processor extract juice from Kiwi or wine is prepared from low-grade kiwi for home consumption.

7. Marketing

Marketing: The fruits are transported in mini trucks without any kind of packaging, or packed in gunny bags. The farmers either sell the fresh fruit directly to consumers at the local or main market, in case the main market is situated close to the production area. The farmers carry the fruit on head loads to the nearest transport point and from there it is transported by jeep/maxi to the local market. The transportation cost per gunny bag comes to Rs. 20-50 depending upon the distance. During the transit from the field to a local market, the post-harvest losses during transportation are 0.5 percent.

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

More than 99% of the product is under pre-processing and consumed as fresh within the district and also exported to other districts and countries.

9. Institutional Support

The Bankers, MOFPI, NABARD, Horticultural department, and Marketing departments who are directly and indirectly involved with the micro food processing industry are extending their support for the growth of the industry with the implementation of schemes that are beneficial to unitholders

SECTION III - DETAILED SAMPLE STUDY TO BE UNDERTAKEN FOR EACH DISTRICT OR PRODUCT CLUSTER

1. Methodology Note for Primary Data Collection

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 Phek district of Nagaland state of India.

Sampling Technique and Sample Size adopted

Sampling Technique - Multistage random sampling technique was adopted.

Sample Size: Total Sample Size taken in the Phek district is 20.

Nature and sources of data

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

Primary Data

Though India is not the leading country in the production of Kiwifruits, the fruit is gaining popularity day by day in India. This fruit is gaining popularity due to its health benefits. The survey was conducted in various Kiwi processing units located in the Phek 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

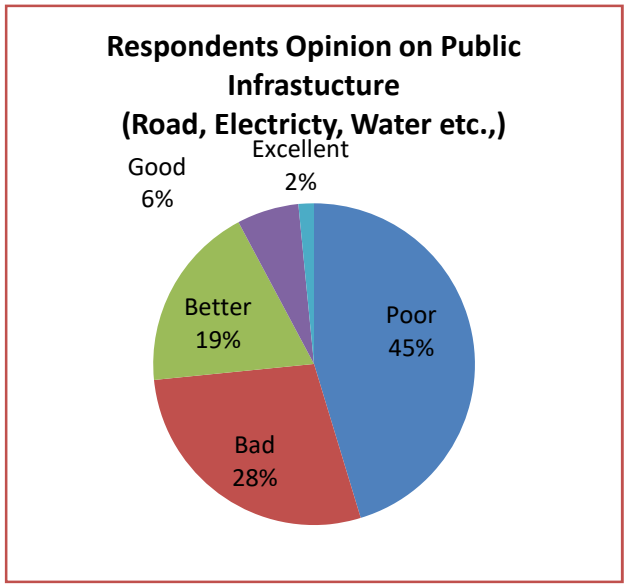
The secondary data is collected from various sources like DICGS annual report, Nagaland Statistical Handbook, APEDA, Indiastat.com, Journals and articles, and other internet sources to know the area, production, export, import of Kiwi

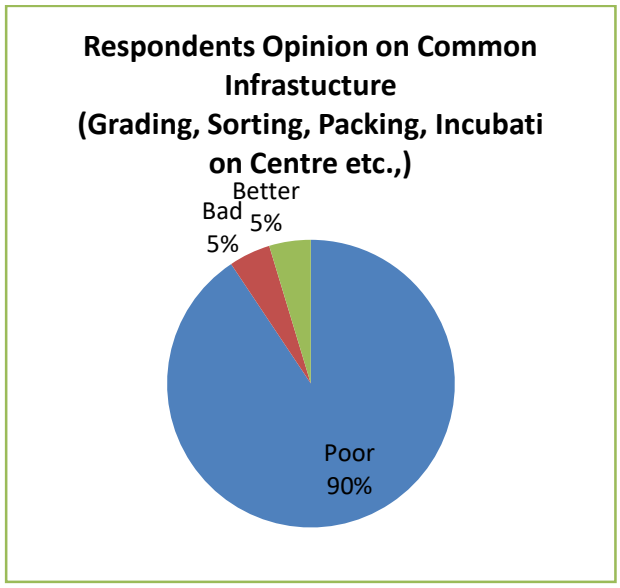
Analytical tools and techniques used

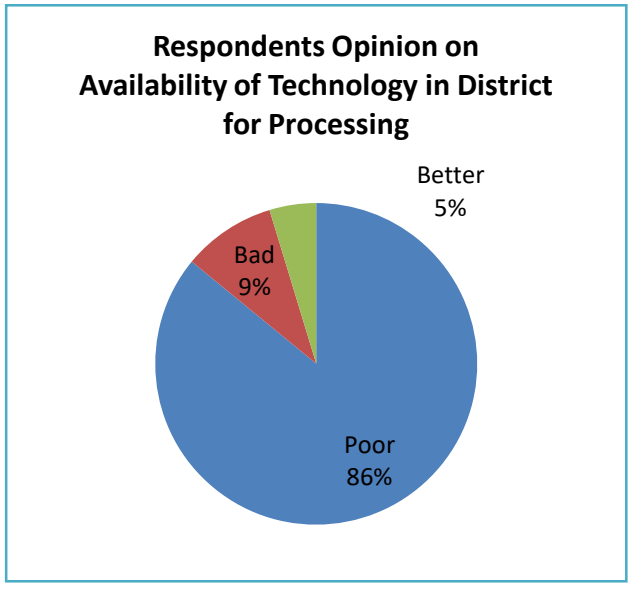
Tabulation of Collected Data, Percentage Analysis and Graphical Solutions were used in order to get a comprehensive picture and analysis of the Data. After the data has been collected, it has been interpreted and presented to arrive at conclusions.

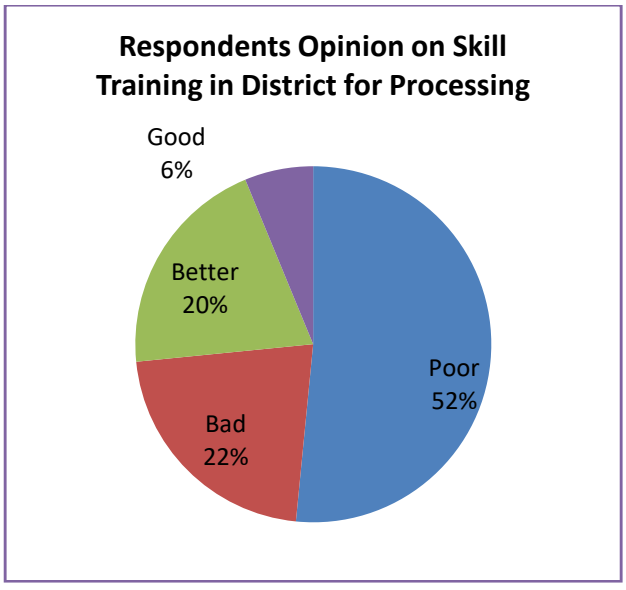
1.1 Individual In-depth Interviews

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.









- 45% of the respondents expressed that public infrastructure in the district is poor.
- 90% of the individual unit entrepreneurs opined that they require common infrastructure facilities such as grading and the sorting unit, incubation centre, cold storages, refer vans etc.,

1.2 Stakeholder Consultation

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 TransGraph to go ahead and present the report.

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

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

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

- Mr.Ashish, Trangraph's Survey lead informed that the touch-based Cooperatives list given by the Department and a few of them are inactive and others have been contacted and information

captured. He further said that as part of the cluster study all the existing cooperatives will be mapped.

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

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

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

The meeting concluded at 13.30 hours.

1.3 Focus Group Discussions

Agenda Points & discussions

The points discussed are;

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

Minutes of Meeting with Various Stakeholders;

- The processing is happening in negligible quantity and small processors are adopted the traditional method of processing.
- The availability of new technology or modern method of processing (using semi-automated and automated machinery) is lacking.
- There is no availability of common infrastructure facilities such as incubation centers, grading, sorting, and packing 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 Kiwi fruit-based value-added 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

2. Cluster Analysis and Discussion

2.1 Location of the cluster

There is no cluster exists in the district for Kiwi fruit. Currently, one cooperative society is involved in the processing of kiwi fruit.

Name of the Society: Chakhesang Women Multi-Purpose Company Society ltd. located at Pfutsero town.

The top 8 villages in Phek district under Kiwi plantation: LASUMI, ZAPAMI, LEKROMI, PFUTSERO TOWN, THIPUZU, TSUPFUME, PORBA, SAKRABA and PHOLAMI. The farmers sold the products within Nagaland State only.

2.2 Skill Development required

There is a need to develop skills in workers who are involved in Kiwi processing, particularly in the handling of machinery such as slicer, dehydrator, pulverizes, packing and sealing machines, for this training is also needed.

2.3 Product Cost Analysis

In Phek district only pre-processing is carried out, below table explains price movement from farm gate to consumer level of kiwi fruit (per kg)

The farm gate price of a kilogram of kiwi fruit is INR 69.5, traders are selling at INR 123.5 after primary processing retailers. The consumer is purchasing around INR 182 for a kilogram of kiwi fruit but the farmer's share in the consumer rupee is 38% only.

Table 10: Product Cost Analysis of Kiwi Fruit

Sl.No	Particulars	Cost (In.Rs)
1	Cost of Cultivation	42
2	Post-Harvest Management (Grading, Sorting, and Packing)	5
3	Transportation	3
4	Post-Harvest Loss	2
5	Farmers Margin	52
6	Farmers Realization	69.5
7	Secondary Transportation	15
8	Handling Cost (Loading + Unloading)	2
9	Traders' Margin	37
10	Trader's Realization	123.5
11	Tertiary Transport	1.5
12	Handling Cost (Loading + Unloading)	2
13	Retailer's Margin	55
14	Consumer Price	182
15	Farmer Share in Consumer Rupee	38%

2.4 Problem Mapping/ Firm level issues of micro-enterprises

Sl.No	Sectors	Gaps	Recommendations
1	Skill training needs	• Lack of knowledge on handling of automated machines • Lack of training	• Skill development is required for the handling of new machines and technology. This training for pre-processors and interested farmers needs to be mapped and provide necessary training.
2	Manufacturing practices	• Currently, there is not much processing is carried out in the district, and only a co-operative involved in the manufacturing of squash, juice, and jelly.	• An awareness program needs to be conducted to explain the demand for organic processed kiwi valued-added products in India as well as outside India.
3	Technologies	• Lack of knowledge of new technologies • For pre-processing still practicing the manual method	• Training for Up-gradation of units and how it will be benefited processors • Up-gradation for automated grading, sorting, and packing machines

2.5 SWOT Analysis

Strength	**Weakness**
• Raw Material- Phek is famous for its organic kiwi cultivation, hence ample raw material is available in the district itself for the Kiwi processing industry • People are interested to enter or expand existing processing businesses if they got financial assistance • Agro-climatic conditions are favorable for the cultivation of the crop	• Less awareness about government support & schemes for the processors in the district • No formal organization or cluster available for kiwi processing units • Lack of essential infrastructure like roads, cold storage, warehouses, etc. • Lack of advanced machinery. • Lack of well-organized market channel & distribution network • Inadequate market information system
Opportunities	**Threats**
• There is a growing demand for organic fruits like Kiwi • Increase in domestic demand for the fruit considering its health benefits.	• Climate change • Competition from other brands

• Demand for healthy & quality organic products • Metro cities, other states & export markets can be captured.	

2.6 Need Assessment & Gap Study

Gap Study

Technology

Lack of awareness of food processing technology, processors do not know who to approach for proper machinery such kind of issues need to be addressed in the district. Advance technology will help to increase the production of finished goods & it will create less dependence on the workers.

Machinery

Various advanced machines require boosting the processing like slicers, Grinder, Fruit cutting machinery, Mini sealer, Juice extractor, Automatic washers, peelers, Dryers, Packing machines, dehydrators, etc.

Infrastructure

Good quality road is the basic constraint in infrastructure, almost every respondent mentioned about quality & connectivity of roads. Due to the poor quality of roads, transportation is getting affected. Cold storage, advanced machinery, warehouses, trading platforms, etc are other infrastructure requirements in the district.

Testing Facilities

Proper testing labs are required for TSS, Acidity, and Brix testing of the finished product. As well as microbial, chemical & nutritional testing facilities are also required

Skill Training

There is a shortage of skilled labor in the kiwi processing industry and there are no proper skill training facilities available in the district. At present only a few skilled laborers are available in the district and for the rest skill development program needs to be conducted.

3. Recommendations

3.1 Vision Statement & Key Objectives

Vision Statement: To promote Individual units and SHGs to involve in Kiwi fruit processing activities. Objectives:

- Identifying interested stakeholders in kiwi processing in Phek district.
- Up-gradation of existing microprocessing units in the District

3.2 Strategy for Integrated Development

3.2.1 Scope for processing

The total area under kiwi fruit in Phek district is 109 ha and the district produced around 327 MT of kiwi fruit in 2019-20.

As part of our primary survey, we interviewed the above 20 units, whose primary activity is kiwi fruit production, pre-processing, packing, and selling. The core business of active units is to produce kiwi and sell the product (pre-processed) within the district to local retail shops, and traders and also directly to consumers and also export to neighboring districts and states.

Currently, less than 1 % of the total production of kiwi fruit is under processing. Through the primary survey, we noticed that many of the farmers, and pre-processors are interested in the processing of kiwi fruit into jam and jelly if they get any financial assistance from the state and central government. There is a clear opportunity and possibility to increase the processing percentage by 5% to 10% because Phek kiwi fruit production is organic and chemical-free. In the market, there is a good demand for organically processed products.

3.2.2 Scope for Capital Investment in Processing

Particulars	Capital Investment
Common Infrastructure	• Most of the farmers faced the problem of No Storage room /cold storage room, due to this problem they cannot store the products during Off-season, they had no other option but to sell out all the products during harvesting season, and at this time as it is available in all the areas the price of the products goes down and they faced difficulties of selling out. • The other problem is due to no transportation and road linkage, farmers find it difficult in carrying the product. The majority of the farmers/respondents and FPOs companies requested to provide transportation to carry the products, and capital investment for road lines is required
Skill Development	• Capital investment for skill development, awareness program, training on post-harvest management, and handling of new machinery is required.
Marketing and Branding	• There are many food processors at the micro level, by women folks or unemployed youth. But there are no market linkages. They sell in a disorganized manner. So the first effort should be to create a market for them. To overcome this problem capital investment for training in marketing and branding is necessarily required. • The state government should provide a separate marketplace for Organic Kiwi processors and the capital investment can be supported by the concerned department.

3.3 Proposed Interventions

A total of INR 24.13 Cr. fund is proposed for the Phek district for the up-gradation of 117 existing and potential new units in the district. INR 10.49 Cr. is expected government assistance under the SLUP from the total fund proposed for the up-gradation of the food processing units.

Intervention	Target No. of units	Total Cost (Cr.)	Subsidy per unit	Govt. assistance (Cr.)
Capital Investment in Plant and Machinery (Individual units)	106	14.6	35%	5.11
Capital Investment in Plant and Machinery (FPO/SHG/ Cooperatives)	11	1.46	35%	0.511
Common Infrastructure	1	4	35%	1.4
Incubation Cum Custom Hiring Centre	1	2.75	100%	2.75
Branding and Marketing (Total no. of Units/group)		1.2	50%	0.6
Training and Mentorship (No. of the individual)	234	0.12	100%	0.12
Total		24.13		**10.49**

Individual existing – During the primary survey respondents (existing individual and potential units) expressed that they are interested in the making of processed kiwi products.

Respondents of individual units expressed that they need funds for the purchase of new machinery such as slicers, Grinder, Fruit cutting machinery, Mini sealer, Juice extractor, Automatic washers, peelers, Dryers, Packing machines, dehydrators, etc.

Groups – There are no FPOs for kiwi processing in the district and one cooperative for ODOP processing is exist in the district, but few SHGs are active in kiwi processed product making. The fund requirement for an SHG is for the purchase of new machinery, skill development, branding, and marketing. It was emerging from the primary survey that SHGs are willing to expand and they need funds. PMFME scheme can fill this gap.

An SHG (Kutokokrotho) from Porba Village wants to do kiwi squash if Government gives full support. Currently, the activities are making squash from different fruits. They agreed to run a kiwi products squash too.

Common infrastructure – Common infrastructure facilities such as grading, sorting, and cold storage are required in major kiwi producing villages such as LASUMI, ZAPAMI, LEKROMI, PFUTSERO TOWN, THIPUZU, TSUPFUME, PORBA, SAKRABA, and PHOLAMI.

Marketing & branding-There are many food processors at the home scale level, by women folks or unemployed youth. But there are no market linkages. They sell in a disorganized manner. So the first effort should be to create a market for them.

The areas to be covered in Training and marketing are: Standardization of products, common packaging, and branding, improvement in product quality and processing methods, need for up gradation of equipment, training, a system of procurement, labs for quality control, need for common infra and warehousing, etc.

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. Kiwi needs to be pushed aggressively within this brand, (which is not seen much now), and also independently, promoting the strengths of Nagaland Kiwis.

The effort should be to reach out to Metros and highlight the features of Nagaland Kiwi: Organic, Natural, Healthy, Fleshy, and Juicy.

Training and skill development- Through a primary survey, we observed that the majority of kiwi fruit producers are not involved in post-processing activities and only they are involved in pre-processing. If training on new technologies and modern way of processing which is machine-oriented, training and skill development on machinery and equipment, branding and marketing is given then may show interest to enter into processing activities such as kiwi squash, jam and jelly and this can be done through PMPME scheme.

4. Key Impacts

Particulars	Impact
Opportunity to Increase processing activity	• Through support under PMFME scheme, there is a possibility of an increasing percentage of processing (up to 10%) in the next few years
Employment	• Employment of units will increase at least by 20% who are benefitted from PMFME
Income	• Through proper branding and marketing, the net profit of units will increase up-to to 30%.
Reduce Waste	• Processing can reduce the wastage of the produce at the farm gate.
Better Price	• During the off-peak season the price of the product will be low, to overcome this they can enter into processing activity and earn a better price.