DIAGNOSTIC STUDY REPORT

Business Development Services (BDS) for MSMEs in Cashew and Kewda Cluster in Ganjam and Gajapati Districts of Orissa

Submitted by

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A C K N O W L E D G E M E N T

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LIST OF ABBREVIATIONS

ADS	**ACCESS Development Services**

AGM	**Assistant General Manager**
AG DEPT.	**Department of Agriculture**
APITCO	**Andhra Pradesh Industrial Technical Consultancy Organization**
AP	**Andhra Pradesh**
BDS	**Business Development Services**
BDO	**Block Development Officer**
CA	**Commission Agents/Chartered Accountant**
CCC	**Cluster Coordination Committee**
CCD	**Center for Community Development**
CWC	**Central Warehouse Corporation**
CNSL	**Cashew Nut Shell Liquid**
DIC	**District Industrial Centre**
DCCB	**District Central Cooperative Bank**
DFID	**Department for International Development**
DRDA	**District Rural Development Agency**
DS	**Diagnostic Study**
EU	**European Union**
FGD	**Focus Group Discussion**
FFDC	**Fragrance and Flavor Development Center**
HORT.DEPT	**Department of Horticulture**
HPS	**Hand Pick Selection**
JKP	**Jana Kalyana Pratisthan**
KVK	**Krishi Vignyan Kendra**
MIS	**Management Information System**
MSME	**Micro Small Medium Entrepreneurs**
MT	**Metric Tons**
NABARD	**National Bank For Agriculture and Rural Development**
NGO	**Non-Government Organizations**

NHM	**National Horticulture Mission**
NIC	**National Informatics Center**
OUAT	**Orissa University of Agriculture and Technology**
OSPCB	**Orissa State Pollution Control Board**
OSCDC	**Orissa State Cashew Development Corporation**
OSWC	**Orissa State Warehouse Corporation**
PACA	**Participatory Appraisal of Competitive Advantage**
PREM	**Peoples Rural Education Movement**
RCN	**Raw Cashew Nut**
RGB	**Rushikulya Gramya Bank**
RRB	**Regional Rural Banks**
RMC	**Regulated Market Committee**
SBI	**State Bank of India**
SIDBI	**Small Industries Development Bank of India**
SME	**Small Medium Entrepreneurs**
SPARC	**Small Producers Assistance Resource Centre**
SRMT	**Sri Ram Motor Transport**
SWWS	**Society for the Welfare of Weaker Sections**
SWOT	**Strengths, weakness, opportunities and threats**
TCI	**Transport Corporation of India**
TSC	**Technical Support Centre**
UP	**Uttar Pradesh**
WC	**Working Capital**

Business Development Services (BDS) for MSMEs in Fruit and Vegetable Processing Sub Sector in Ganjam and Gajapati Districts of Orissa

A. INTRODUCTION

A.1 Background

India produces over 130 million tons of fruits and vegetables and with that it stands second in world production. The global processing value is estimated around Rs16000 billion and India's contribution to that is Rs 1400 billion. Although India is the second largest producer of fruits and vegetables, hardly 2% of the produce is processed where as in the developed countries the figure is more than 50%. The average annual growth rate of processed fruits & vegetables over the last five years has been around 22%. India is also referred to as the land of spices producing all varieties worth over Rs.3500 crores (US$900million) amounting to 25-30% of world production, which is processed for value-addition and export. The fruits and vegetables processing industry has been termed as the "Sun Rise" industry in India.

In Orissa, the main source of income is agriculture, fishery and allied activities along with seasonal activities. In allied activities like horticulture, food processing takes importance and precedence because this sector is one of the largest in terms of production, consumption, export and growth prospects. The Government of Orissa has accorded this sector high priority, with a number of fiscal relief and incentives, to encourage commercialization and value addition to agricultural produce, for minimizing pre/post harvest wastage and generating employment. In this back drop, the National Horticulture Mission is working in the state to increase production. Of the total land area (89.60lakh hectares) available in the state, around 7% land area (6.55lakh hectare) is under vegetable cultivations (Source: Orissa Agriculture Statistics2006-07). The above statistical analysis gives an indication that there remains a large amount of underutilized potential in Orissa.

Of the 30 districts in Orissa, Ganjam & Gajapati (till 1992 it was known only as Ganjam) are the most potential districts with good concentration of MSMEs on fruits & vegetable sub sector. It also justifies the very literary meaning of Ganjam "Ganj-i-am" which means the 'Granary of the World'. There are 3 subdivisions, 22 blocks and 14 tehsils in Ganjam with a population of 31.60lakh (2001 Census) with a geographical area of 8070.60 square km. Gajapati district envelops a total area of 4325 sq km, with 3 tehsils and 129-gram panchayats with a total population of 5.18 lakhs (2001 Census).

Both the districts make a significant contribution to the state economy in terms of fruits & vegetables. Of the total 3.39lakh hectares[1] under fruit cultivation in the state, Ganjam & Gajapati account for 0.33 lakh hectares. In the vegetables sub sector, both the districts account for 0.27 lakh hectares out of 2.70 lakh hectares under vegetable cultivation in the State. Both the districts have a good concentration of fruits & vegetable and among those most prominent are cashew, kewda, chilly and turmeric, ginger and pineapple.

Under the aegis of the Project Management Division of the Small Industries Development Bank of India (SIDBI), ACCESS Development Services has initiated a 32 month (Mar 2009 to Oct 2011) to implement & extend Business Development Services (BDS) in identified clusters on fruits & vegetable sub sector in Ganjam – Gajapati districts of Orissa. This initiative aims at supporting micro, small, and medium-sized enterprises and cooperatives to overcome barriers to increased profitability, by improving their productivity and access to high value markets. This intends to create employment opportunities and aid the overall growth of MSMEs in the fruits & vegetable sub sector. After initial primary and secondary research in the area, it was found that except for Cashew and Kewda there is no other fruit/vegetable or agri-allied sector where there is any MSME based unit. Hence the project chose Cashew and Kewda processing for intervention.

[1] O/O the Deputy Directorate of Horticulture, Ganjam

Project Objectives

ACCESS, in pursuit of the set objectives as per the Terms of Reference entrusted by SIDBI, has initiated implementation of the BDS programme with the overall objectives of

- Fostering BDS market development in 2 identified sub sectors i.e Cashew and Kewda
- Strengthening access to BDS by the enterprises in these identified clusters by understanding, analyzing & factoring appropriate strategies that are required
- Building a cadre/group of BDS providers in each of the serviced provisions who would be accessible to support enterprises in a sustainable manner & also fee based arrangement
- Developing the identified clusters as "model BDS programmes" that would have high impact and are scalable & replicable.

In order to achieve the set objectives, ACCESS conducted a diagnostic of Cashew and Kewda sub sector in both Ganjam & Gajapati with the broad objective of finding the gaps in the existing skills, activity process, technology, design, credit, marketing, value chain & other linkages in the cluster to effectively address them through a planned development strategy for BDS provisioning. The detailed design and implementation of the study is explained below.

A.2 Methodology

As a first step towards cluster mapping & conducting a diagnostic study, a detailed guide note (Annexure-1) & frame work of the areas covered under the study, scope, stakeholders & sample size was prepared. Both qualitative and quantitative way of data collection was followed. As a part of the methodology for the diagnostic study, individual product wise value chains of the key processed products – cashew and kewda were analyzed.

Sample of respondents and process of information collection from both the subsector is given below.

Sources	**Sample size**	**Survey Type**	**Tools used**
Cashew			
1. Cashew Growers	398 growers in 7 blocks	Primary	FGD and structured questionnaire
2. Aggregators	16 aggregators in 7 blocks	Primary	Interviews
3. Processors	31 processors in 7 blocks	Primary	Interviews/ structured questionnaire
4. BDSP	5- Govt. departments 6-NGOs, 27-Pvt BDS (Marketing), 1-Association,	Primary and Secondary	Interviews, Reports, Publications, Journals, Internet

	7-FIs (5 Nationalized Banks, 1 RRB and 1 Pvt. Bank)		
Kewda			
1. Kewda Growers	248 growers in 4 Blocks	Primary	FGD and structured questionnaire
2. Aggregators	12 aggregators in 4 blocks	Primary	Interviews
3. Processors	22 processors in 4 blocks	Primary	Interviews/ structured questionnaire
4. BDSP	6- Govt. institutions 2-Pvt BDS (Marketing), 1-Association, 7-FIs (5 Nationalized Banks, 1 RRB and 1 Pvt. Bank)	Primary and Secondary	Interviews, Reports, Publications, Journals, Internet search

A.3 Ganjam-Gajapati Cashew and Kewda Cluster

Ganjam-Gajapati Cashew and Kewda Cluster is located in the southern part of Orissa having 140 distillery units processing KEWDA and 120 units processing CASHEW with a total turnover of Rs 240 Crs and giving direct employment to around 12,650 households in the area. . The selection of these two products was based on factors such as their production / processing, commercial demand, shelf life, potential for building enterprises and need for business development services.

Some of the basic information collected from different sources is presented below.

Cashew:

- 120 Cashew processing units exist in both the districts having a turnover of Rs. 160 Crs.
- Cashew processing units located in 2 major concentrations of Ganjam and Gajapati districts within a radius of 60KM in each.
- Presence of high concentration of cashew orchids and processing units
- Longer shelf life of around 3 to 6 months.
- Abundantly available local raw material
- Demand in the national/international market
- Creation of employment for 12000 poor House holds
- Scope for multiple use of by products

- Cashew corporation/state recognition for the produce
- NHM & KVK working in the cluster
- Presence of MSME networks

Kewda

- The Kewda plant is grown in 4 blocks(Rangeilunda, Chikiti, Ganjam and Chhatrapur) of Ganjam district nearer to seacoast
- More than 40% land area in this 4 blocks are covered under the plantation
- More than 15000 Households depending on the source of income from this product
- More than 140 distillery units are located in a radius of 40 KM in the district and having a turnover of around Rs 80 Crs.
- Kewda Rooh, Attar and scent is in demand by Gutka and perfume industries
- Traditionally knowledge is available with the local entrepreneurs to make good oil
- Scope for future intervention

PART-ONE

CASHEW
(Anacardium Species)

1.0 Frame work

1.1 The Cluster

In Ganjam & Gajapati district 120 Cashew processing units exist with a turnover of Rs. 160 Crs and giving direct employment to around 12,000 people. These units are located in 2 major concentrations of the two districts within a radius of 60KM in each. Cashew has longer shelf life of around 3 to 6 months. The main cashew processing units concentrate in 7 blocks of two districts such as Chattrapur, Ganjam, Chikiti Purusottampur in Ganjam District & Gumma, Kashinagar & Goshani in Gajapati District. Raw materials are also abundantly available in these areas.

1.2 Production Process & Flow charts

The main commercial product derived from the cashew fruit is the cashew kernel which is obtained through factory processing (roasting/ streaming, shelling and peeling). Cashew nut shell liquid (CNSL), used for various applications, is a by – product obtained while processing cashew shells.
The objective of cashew processing is to extract healthy, tasty kernel from the raw cashew shell. Most modern factories are designed to obtain the maximum number of whole nuts and as much shell oil as possible. Processing can be subdivided into a series of steps like:

a) Drying and Roasting

Harvested cashew nuts are dried in the sun for a few days. Properly dried nuts can be stored for 2 years before being shelled. Cashew nuts are roasted to discard the caustic shell oil and acrid fumes. Hand shelling is impossible if the shell oil has not been removed previously. Kernels must be protected from contamination by the shell oil because it would cause blisters in the mouth and throat when eaten. Before the nuts are roasted, they must be soaked in water—the moisture in the shell facilitates the rupturing of the cells containing shell oil and retaining it in the shell. Moisture makes the kernel slightly rubbery and limits breakage of the kernels. The easiest method to wet the shells is to heap the nuts into big piles and to use sprinklers intermittently. Steam may also be used.

The simplest roasting method is to heat the nuts for about a minute in an open pan with holes. Acid fumes are released and cashew nuts should catch fire which can be doused with water. A more efficient method is to use a slanting perforated cylinder that is rotated above fire. The shell oil flows through the holes in the cylinder and is collected in a catch. After the roasting process, the cashew nuts are dumped into ash or sawdust to remove the excess shell oil that is still clinging to the shells.

b) Shelling

This is the most difficult operation in cashew processing. Shelling is mostly done by cheap labour in the cluster. It is carried out by using special wooden mallets and pieces of bent wire. On an average, one labour can shell at a rate of about 200 nuts per hour.

Mechanical shelling methods are difficult to design because of the irregular shape of the nut, hardness of the shell and brittleness of the kernel.

Peeling and grading is on progress in MAHALAXI unit at Gajapti

c) Removal of the Testa or Peeling

After decortications of cashew nuts, the kernels are to be put in the hot chamber for about 12 hrs to make it dry. Kernels are dried on big racks in an oven at 70 °c. The dry kernels are easy to scrap and remove the thin red outer layer called the testa. This is called peeling in the industry which is the most delicate and sensitive operation. The remaining traces of membrane are removed with bamboo knives.

d) Grading

Kernels, whole and broken, are sorted into 9 grading schedules with 4 prominent grades in the industry. The market fixes the price based on the grade of kernels which always fluctuate from national to international market. The details of grading are illustrated below:

Table -5: An Illustration of Cashew Grades	
Grade	**Meaning**
W-180	White wholes,170-180 no. of kernels in1 lb or in 454 grams
W-210	White wholes, 200-210 no. of kernels in 454 grams
W-240	White wholes, 220-240 no. of kernels in 454 grams
W-320	White wholes , 300-320 no. kernels in 454 grams
W-400	White wholes, 380-400 no. of kernels in 454 grams
LWP	Large White Pieces
Pieces-SS	Split, count not applicable
SSW	Count not applicable, scorched and immature and discolored
SSP	Scorched and small pieces

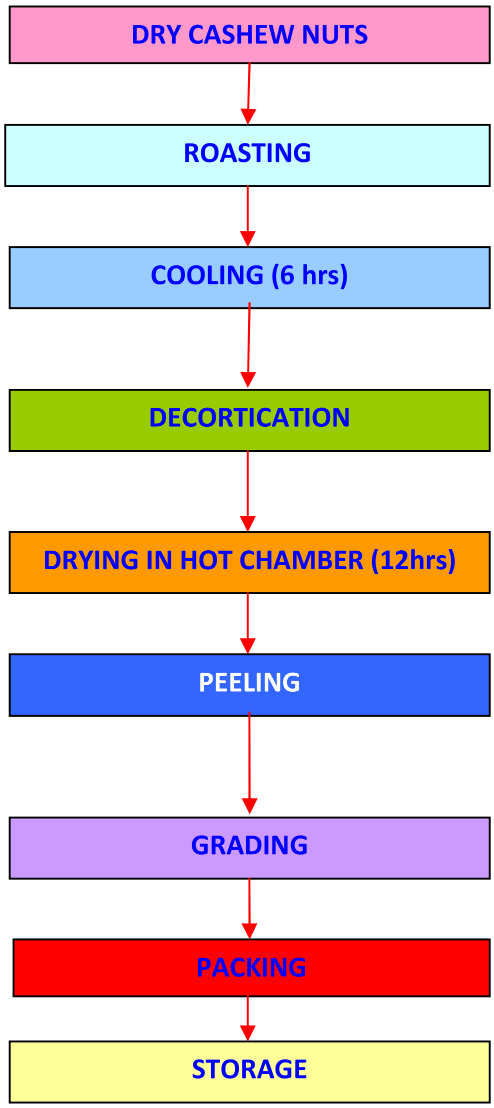
e) Packaging

Kernels are dried to 3 % moisture content before they are packed. Drying is necessary to extend shelf life and prevent fungal and other infections. Dried kernels do not become rancid. Kernels of export quality are vacuum packed in tins.

f) Storage

The finished product of kernel is traded immediately after a stock of one load to the destination. With better godown facility this can be stored for period of 4-6 month to exploit the market situation.

Processing Flow Chart of Cashew Nuts



Production of Grade Kernel

Output (cashew kernels): Standard norm of the industry is to calculate the output in terms of a bag of 80 kg. A standard bag of 80 kg after roasting/ boiling can produce the following type of kernels.

Table -6	
Type	**Quantity**
Whole kernels	18 kg
Broken of half size	3kg
Broken of ¼ size	2kg
Bits	1 Kg
Total	24 Kg

By product of Cashew

a) Cashew nut shell

After roasting of cashew nut and decortications, cashew nut shell is obtained which is used as a fuel for further roasting. But in the boiling plant, the shell can be further processed to extract shell oil and cake. Shell oil represents about a quarter of the mass of an unshelled nut and is approximately equal to that of the kernel. This fluid, which is not an oil as the term "shell oil" indicates, but a mixture of anacardic acid and cardol, is one of the most important inputs in the manufacture of brake linings. Shell oil is also used in the manufacture of numerous materials that have to be resistant to heat, friction, acids and caustic products, for example clutch plates, special isolators, varnish and plastic materials. The cake is not being used right now, given that the oil mills are located very far away.

b) Cashew apple

The apple is highly perishable. It can be eaten fresh or juiced. Syrup, wine, brandy, gin, preserved fruit, pickles and glazed fruit are also made from the cashew apple. In Brazil, fresh cashew-apples are packed in trays and marketed in retail fresh produce outlets. There is no value addition of this in the cluster. It is just the waste part of the fruit.

c) Red testa (Scrap)

It is mostly used as a natural color, and is hence used to a large extent in the *Gutka* industry.

1.3 History of the Cashew processing Cluster

A study of the industry prior to 1985 revealed that most of the plantations were of seedling origin and cashew cultivation was mainly carried out as a forestation and conservation program for waste lands rather than as an economic venture. Since productivity was not the basic objective of such a program, cashew was grown under highly neglected conditions. Poor soil fertility in cashew growing areas, seedling progenies of nondescript origin and negligence of the crop resulted in low productivity. This was prevalent in most of the cashew growing areas including Orissa. Neglected trees established for conservation purposes hardly responded to the application of any inputs. Most of the cashew orchards were developed with the above reasons which resulted with few industries for value addition. As Gajapati & Ganjam districts of Orissa share a border with Andhra Pradesh, which is considered as the main hub for cashew processing industry, some of the entrepreneurs of AP relocated to these two districts to establish their units. The policy change of AP Government to eliminate the roasting units also forced some entrepreneurs to relocate their business to nearby Gajapati district. Most of the processing units are located near the good motor able road point which connects to the nearby market Palasa. Out of the total 250 units in Orissa, this cluster has 120 units. One significant turning point occurred when Sri Govinda Chandra Panda being influenced by M/S Vijaya Laxmi cashew of Kerala, the champion of processing and trading of Kernels started the traditional Kadai roasting at Rambha in 1972.

Drum roasting process was started by Late Sri Purna Chandra Sahu at Chhatrapur in the year 1975. Mr. Sahu learned this new process during his working as a sales agent in M/S Vijaya Laxmi cashew of Kerala. Another unit was established by Mr. Prafulla Chandra Panda at Sabulia with the same technology. Gradually after seeing this process more people in the area came into the trade and stated similar units for processing. Till 2001 more than 60 units were established in the area.

In 2002, Mr.Ajit Sabat of Gopalpur, a proactive entrepreneur in the cluster introduced steam boiling processing, which is a more advanced and sophisticated way of processing to get better productivity, less wastage and quality product. It is also considered as a major breakthrough in terms of pollution control. He got this idea during his exposure to similar units outside the state. Till date 8/9 units in the area have adopted this method.

1.3.1 Overview of Past & Ongoing Intervention

Centre for Community Development (CCD) one NGO working in five blocks of Gajapati District have initiated a process to produce cashew apple juice and RTS (Ready to Serve) in collaboration with OUAT and IDE during the year 2006-07. But the programme failed in providing market for this type of products due to non acceptance in consumer market. They are now in the process of initiating small scale household based cashew processing units through their self help groups (SHGs).

PREM (Peoples Rural Education Movement) is one of the oldest NGOs in the state have conducted a feasibility study for installing federation based cashew processing units in their operational area Gumma block .

Gram Vikash, an internationally recognized NGO which have brought a revolutionary change in NGO movement in Orissa have promoted commercial cultivation of cashew in their project area in 1980s. They are no more involved in the plantation of cashew at present.

In recent past, the National Horticulture Mission has taken Ganjam & Gajapati as their piloting districts for replacement of old cashew plantation with hybrid clones. In addition, the recently announced Industrial Policy (2007) of Govt of Orissa put cashew production & processing in their priority sector list.

1.4 International, National and State Scenario

1.4.1 International Scenario:

Initially, cashew grew wild in Brazil, and the Portuguese were the first Westerners to spot this tree when they invaded Brazil in the year 1500AD. Portuguese sailors brought the seeds of the cashew nut trees from Brazil and planted them on the east coast of Africa. The trees in no time grew wild along all the entire coast of Mozambique, and then also spread to Tanzania and Kenya.

The first to harvest these wild cashew nuts were native Africans. Later, these nuts were sold to the Portuguese traders, who in turn sold them to the merchants who shipped them to India, where these nuts were shelled.

Table 3: Top Ten Cashew Nuts (With Shells) Producers as on June08

Country	Production (Tons)
Vietnam	961000
Nigeria	660000
India	665000
Brazil	176384
Indonesia	146000
Côte d'Ivoire	130000
Philippines	118000
Tanzania	92000
Guinea-Bissau	81000
Mozambique	58000

The cashew fruit is unusual in comparison with other tree nuts since the cashew nut is outside the fruit. The cashew apple is an edible false fruit, attached to the externally born nut by a stem. In its raw state, the shell of the cashew nut is leathery, not brittle. It contains the thick vesicant oil, Cashew nut shell liquid (CNSL), within a sponge-like interior. A thin testa skin surrounds the kernel and keeps it separated from the inside of the shell. The primary products of cashew nuts are the kernels which have value as confectionery nuts. CNSL is an important industrial raw material for resin manufacture and the shells can be burned to provide heat for the decorticating operation[2].

At present, cashew is cultivated in abundance in areas having a sufficiently warm and humid climate. The cashew plantations are spread across almost 32 countries of the world. Total area under cultivation across the globe is about 33,900 km^2. The average yield of the cashew crop across the globe is 817 pounds per acre that is approximately 916 kg/hectare of land.

World over the cashew nut market is highly concentrated, with India and Brazil providing almost half of total production, along with Vietnam, Nigeria, Mozambique and Tanzania. These six countries contribute to more than 95 percent of world production. The above table shows the top ten

[2] Source: Research paper on cashew by Professor LM Gadnaik, OUAT

cashew growing countries in the world. India is second biggest consumer of cashew kernel after USA, which accounts 50 percent of the global imports of cashew kernels. The price of cashew nut is characterized by unpredictably fluctuations in the global production. The international cashew nut price is fixed in New York and Rotterdam. The market of cashew nut grows 10 percent every year.

2.4.2 National Scenario

In India cashew was first introduced in Goa, from where it slowly trickled down to the Konkan coastline to Malabar and the rest of Kerala. It had spread other parts of India only towards the last quarter of the 20^{th} century. Around 65,000 hectors land is under cashew cultivation in India, with Maharashtra being largest producer state, with 1, 50,000 hectors dedicated to this plantation. It was as early as 1905 that Kochi started exporting cashew nut to the USA. Today, India produces around 6, 65,000 tones of cashew nuts per annum. A few of the most prominent trading centres of cashew kernel in India are Palasa, Kollam, Mangalore and Kochi.

Area, Production and Productivity of Cashew in India
A - Area in '000 Ha.
P - Production in '000 MT.
APY - Average Productivity in kg per hectare

Table 4

STATE	2003-04			2004-05			2005-06			2006-07			2007-08		
	A	P	APY	A	P	APY	A	P	APY	A	P	APY	A	P	APY
Kerala	101	95	890	102	64	900	80	67	900	80	72	900	84	78	900
Karnataka	94	46	500	95	43	680	100	45	700	102	52	700	103	56	710
Goa	55	32	690	55	26	660	55	27	690	55	29	690	55	31	700
Maharashtra	148	120	1100	160	174	1200	160	183	1300	164	197	1500	167	210	1500
Tamil Nadu	95	51	600	105	53	610	121	56	640	123	60	670	123	65	700
Andhra Pradesh	136	95	750	150	88	840	170	92	880	171	99	890	171	107	900
Orissa	**124**	**71**	**850**	**126**	**74**	**810**	**120**	**78**	**860**	**125**	**84**	**860**	**131**	**90**	**860**
West Bengal	9	9	760	9	8	800	10	10	950	10	10	1000	10	10	1000
Gujarat	-	-	-	-	-	-	4	4	900	4	4	900	4	4	1000
NE States	-	-	-	-	-	-	14	10	640	15	11	700	15	12	750
Others	18	16	790	18	14	800	3	1	400	5	2	500	5	2	500
T O T A L	780	535	800	820	544	810	837	573	815	854	620	820	868	665	860

Source: NIC

Table 5: Pricing trend of Raw Cashew Nut (RCN) in different states in India (Rs. per KG)

Year	Keral	Karnataka	AP	Tamilnadu	Goa	Orissa
2003	29.75	31.5	28	35	35.5	30.25

2004	28.5	30	28.75	35.63	35.1	31.75
2005	37.88	35.2	38.10	47.75	45.20	39
2006	28.35	28.7	31.7	37.2	37.6	33.25
2007	27.1	30.5	29.4	36.25	37.7	31.4
2008	34	33	30	36.5	47.2	35.6

In view of large demand for kernel in domestic as well as in international market, the processing capacity of the industry is almost double of production of RCN. That is the reason the import of raw cashew nuts plays an important role. The major import is from South African countries to India. During 2007 to 2008 6,05,970 tons valued at Rs.1746.80 crores of RCN have been imported against 5,92,604 tons at Rs.1811.62 crores during 06-07, which has been growing constantly in quantity term but decline value particularly due to the slide of value of the dollar against rupees. The average import price was Rs.28.26 per/kg during 07-08 against Rs.30.7 per /kg during 06-07.

Table 6: Import of RCN from 2001-2008 by India (Fig in MT)

Year	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**
Quantity(in MT)	356566	400659	452898	578884	565400	592604	605970
Value(in lakh)	96001	123657	140093	218324	216295	181162	174680

Table 7: Processing of RCN in India

Raw cashew nuts processed in India from 2003-2008

Fig in 000' MT

Year	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**
Own RCN	535	544	573	620	665
Imported RCN	452.9	578.9	565.4	592.6	605.9
Total processed	987.9	1122.9	1138.4	1212.6	1270.9

Source: NIC

The processing capacity of the country is growing constantly with steady increase of imported RCN.

2.4.3 Cashew Processing Industry in Orissa

One of the most important commercial crops grown in the State is cashew-nut. Orissa is the third largest producer of cashew-nuts after Maharashtra and Andhra Pradesh. Presently, the area under cashew-nut in the state is 1, 31,000 hectare, with production of approx. 90,000 M.T. Though the average productivity in the State is lesser than the national average, there is ample scope to further increase the productivity. Approximately, 40% of the plantation is old, senile and uneconomic and variety is also traditional. A special programme has been launched under NHM for replacement of the old plantations with clones of High Yield Variety in a time bound manner. Though Orissa is the 3rd largest cashew grower in India, the processing and value addition chain of the state is very weak. As per the state processors association, there are 250 cashew processing units in the state but they have no access to the Government policy due to weak networking of the association.

Districts like Puri, Khurda, Ganjam, Dhenkanal, Cuttack, Keonjhar, Koraput and Nawarangpur are prominently figured in cashew production and processing. Each of these centres has excellent potential to become major cashew hubs in the state & country. Orissa produces around 90,000 M.T of raw cashew with an area of 1,31,000 lakh hectares as on 2007-08, State Govt, has proposed to cover additional 7810 acre of land under cashew plantation to boost agricultural economy in Orissa. The processing units of Jeypore are adopted steam roasting technology using steam roast and shelling machines. Orissa shares 13.5% of cashew production -as per 2007-08 figures.

Though there are approximately 250 cashew processing units (both in registered and unregistered) having capacity of processing of 75000 MT per annum of RCN, but actual capacity utilization of RCN is approximately 50,000 MT per annum. This shows that Orissa is surplus state of RCN. But unfortunately the processor of the state also imports about 5000-10,000 MT of RCN for last two to three years. This is because in the harvesting period the RCN are traded out to processor of other state. At present the sector creates 30 lakh man days’ p.a. and value addition is nearly up to 60 crores. Most of the MSME are rural based small investors. Most of these enterprises lack expertise in the field of processing, marketing & finance. The State having ample source of raw material and unemployed women labor force could elevate to top position not only nationally but also internationally with proper strategy and action plans. Ganjam and Gajapati together constitute around 50% of the total processed cashew in the state.

1.5 Vital Statistics

1.5.1 Principal Stake holders:

Cashew processing units run with the support of various stakeholders. The principal stake holder is processor.

Processors (Entrepreneurs):
In the cashew industry, the processors are the main link of the value chain and the entire economy of the cashew revolves around them. This industry has a turnover of 160 crores per annum (approximately).

- Those cashew processors who have the capacity to process more then 25 bags (80 kg each) per day are called as **big processors**. There are 22 such units in the cluster with an annual turnover up to 44 crores (approximately).

- Those cashew processors who have the capacity to process 20 – 25 bags per day form the **medium processors** category and there are 40 such units in the cluster with an annual turnover of 60 crores (approximately).

- **Small processors** are those who have the capacity to handle up to 20 bags per day. There are 58 such units in the cluster with an annual turnover of 58 crores (approximately).

1.5.2 BDSP

1.5.2.1 Private Unorganised BDSPs:

There are very few BDS used in the clusters. Private BDSPs are available in the area of raw material, machines, equipments and marketing. Raw material and equipment suppliers are providing embedded services to the firms.

a) Raw Material Suppliers

Cashew is a high value seasonal crop, and there are many intermediaries who supply cashew from the village to the processing units. In most of the cases, the entrepreneurs have their agent in the locality to source out the raw materials. Apart from that, there are village aggregators who collect the cashew nuts from the growers and sell it to the processors. The major cashew producing areas of the cluster are Gosani, Kashinagar, Gumma and Raygada in Gajapati district and Chhatrapur, Gopalpur, Rambha, Belaguntha, Buguda, Soroda, Keshpur, Mandipali and Khalikote in Ganjam district. All these areas combined are able to meet 40% of the industry need and the remaining 60% is taken care of by imports.

b) Equipment Suppliers

Equipment suppliers are important players of the chain who take care of the mechanization of the unit. It is observed that most of the roasting equipment is fabricated by the local mechanics. The new boiling plant machinery is available in Kerala, Pune, Mumbai and Calcutta. However, after sale service is available in Palasa in AP as the supplier has a tie up with the local fabricator. These are the types of embedded services. The local fabricators design and fabricate the required drums and hot chambers for the roasting units. These fabricators, which have linkages with MSMEs, are based at Berhampur. Some of the equipment and machine suppliers are:

- Kamath industrial Estate, Housing Bazaar, Mangalore
- Hawai Engineering Works, Mangalore
- Orbit equipment, Kollam, Kerala
- Rotex Industries, Pune

c) Traders

The main cashew trading centre is Palasa in Andhra Pradesh. This market controls the cashew trading of Orissa and A.P. There are both wholesalers as well as retailers in this market and it is well organized. The high grade cashew kernels are transported to Kerala for export. Raipur is another important market where commission agents operate to control the national market. In some cases, they act as both the wholesaler as well as the commission agents (CA). The other important market is the north Indian market at Kanpur and Allahabad. Some entrepreneurs store their stock at Kanpur to sell during the peak demand period.

d) Transporters

They play an important role in transportation of raw materials & finished products from the processing units. The supply of RCN from the village level to processing units is highly unorganized where the aggregators and traders use the local small transport like auto rickshaws, mini trucks and private bus services. The transportation of RCN from the port to the unit is usually carried out by the nationally recognized transport companies like TCI and in some cases the MSMEs are also utilizing railway parcels service. For the transportation of finished product to up markets they use the services of District Truck Owners association through TCI, Sawani, and SRMT etc. But most of the cases the transport facility is arranged by the buyers.

1.5.2.2 Government Support Institutions

a) The Orissa State Cashew Development Corporation Ltd

The main objective is to give thrust on development of cashew plantation and strengthen the economy by commercially exploiting cashew crop in the State. Its primary function is to auction the cashew orchids and generate revenue for the state government. They are controlling activities from the state head quarters Bhubaneswar. OSCDC helps cashew growers in the area in getting land on lease for cashew cultivation.

b) District Industries Centre (DIC)

Each district has one centre to promote and guide the industry sector .The DIC is headed by a general manager who is authorized to issue the certificate of registration to the industry and see that it runs as per the state industrial policy. Both the districts have two DICs which provide their services to the cashew industry on a regular basis. There is a system of single window in which an establishment of more than Rs 10 lakh has to pay Rs 1000/- as one time license fee. This fee will cover registration, all tax certificates & infrastructural compliances. For units of less than Rs 10 lakh, there is no charge, but they have to arrange for all the services on their own. The state government subsidy can be availed through the DIC only. The Industrial Promotion Officer (IPO) is a field level extension officer, who helps and guides the MSMEs towards accessing services from the various departments of the government and also getting financial linkages from Banks.

c) Regulated Market Committees (RMC)

Regulated market committee has a specific role to play for all agricultural commodities. At present, there are 2 RMCs operating in the cluster. RMCs are used to hoard raw materials by payment of a tax which is 2% of the purchasing value of the commodity.

1.5.2.3 Financial Institutions

a) **NABARD:** Each district has one AGM rank officer to promote financial support for agricultural development. They have their own long term plan to support the various development activities and also have their Potential Linked Credit Plan (PLPC) for 2009-10 for both the districts. This includes the plan for development of cashew plantation.

b) **Other Nationalized Banks:** Nationalized banks are present in the cluster in both the districts. Andhra Bank is the lead bank for cluster. Other than this, SBI, Union Bank, Axis bank, Indian Bank and the RRBs are also supporting the industry by extending credit facility to the MSMEs for establishing units. The entrepreneurs avail loans depending on the project proposal and proximity to the bank.

1.5.2.4 MSMEs Association:

This cluster is extended to two revenue districts and each district has the cashew processors association. But there is little coordination and exchange of information between them. These associations are also not focused on the development of MSMEs, but are rather oriented to take up Government interventions. Both the associations are yet to be registered. There is need to unite both and have one association which will be registered under the Companies Act so that this association will be the sole agency to take up import and export.

1.5.3 Who Does, Who Pays?

During the course of our study, we met the cashew processors and enquired about the service providers and their functions. We also took note of their payment structure with mode of payment. The details of our findings are shown in a matrix form below, which we call the "Who does, who Pays" matrix.

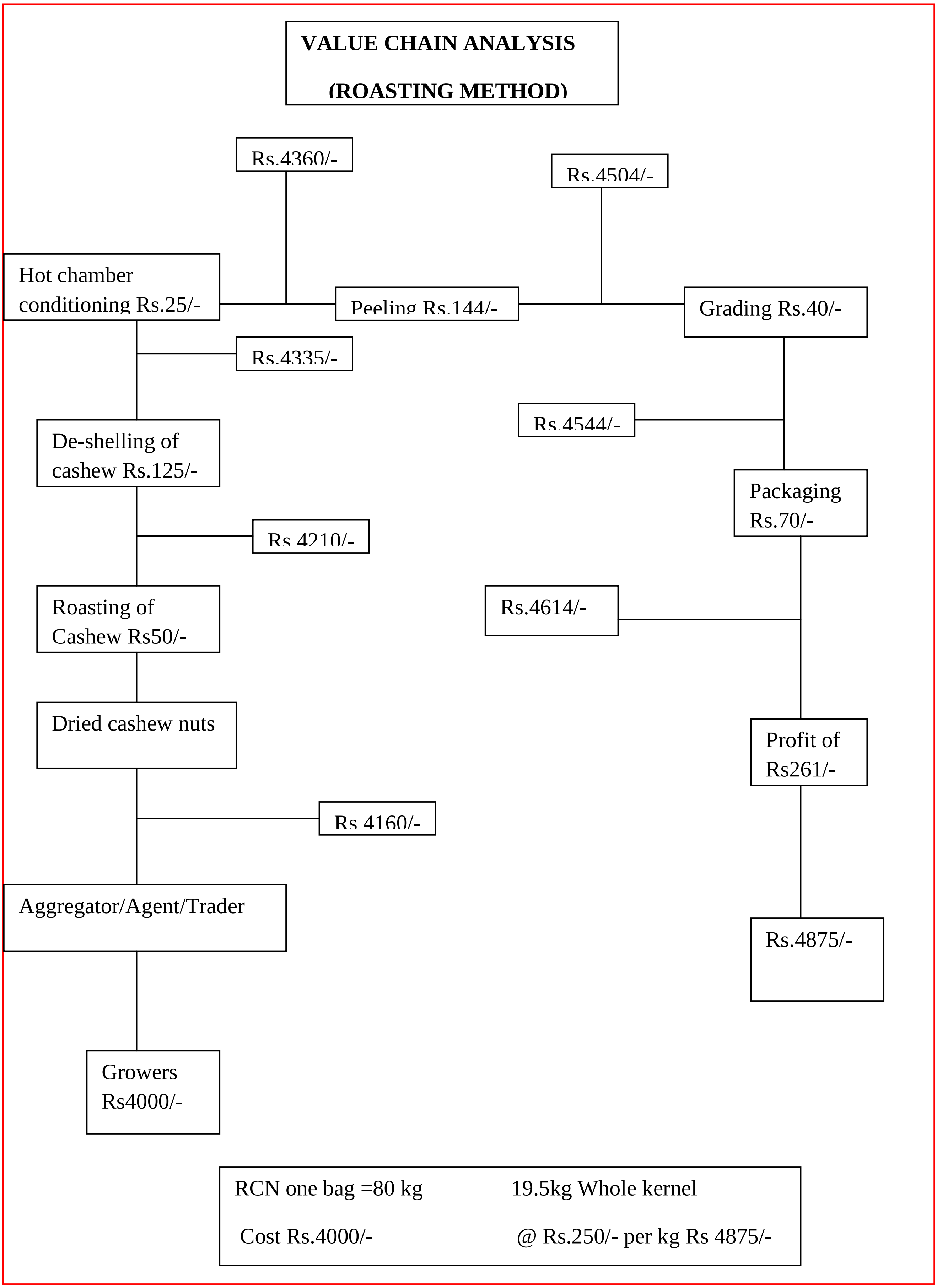
Table 9: The "Who Does, Who Pays" Matrix

BDS Function	Who does?	Who pays?	Payment mechanism
Raw material	Traders/ Agents	MSMEs	Direct
Plant & machinery	Outside suppliers from Kerala & Mumbai	MSMEs	Direct
Production of Kernel	Skill & semi skill labourer	MSMEs	Direct
Financial Management, auditing and accounting	CA and their Munshis	MSMEs	Directly on daily and monthly basis
Marketing: Transportation	Trader/ Commission agent	MSMEs	Indirect
Organization Registration	Government, DIC	MSMEs	Direct
Financial support	Banks, NABARD, SBI, DCCB, RRB	MSMEs	Direct as interest
Infrastructure development	Builders and developers	MSMEs	Direct
Pollution certificate- ISO-14000 (For units having more than 10Lakhs turnover)	Dpt. Of OSPCB through DIC	MSME	Indirect (through DIC)
Pollution certificate ISO-14000 (For units having less than 10Lakhs turnover)	Dpt. Of OSPCB	MSME	Direct

2.0 ANALYSIS

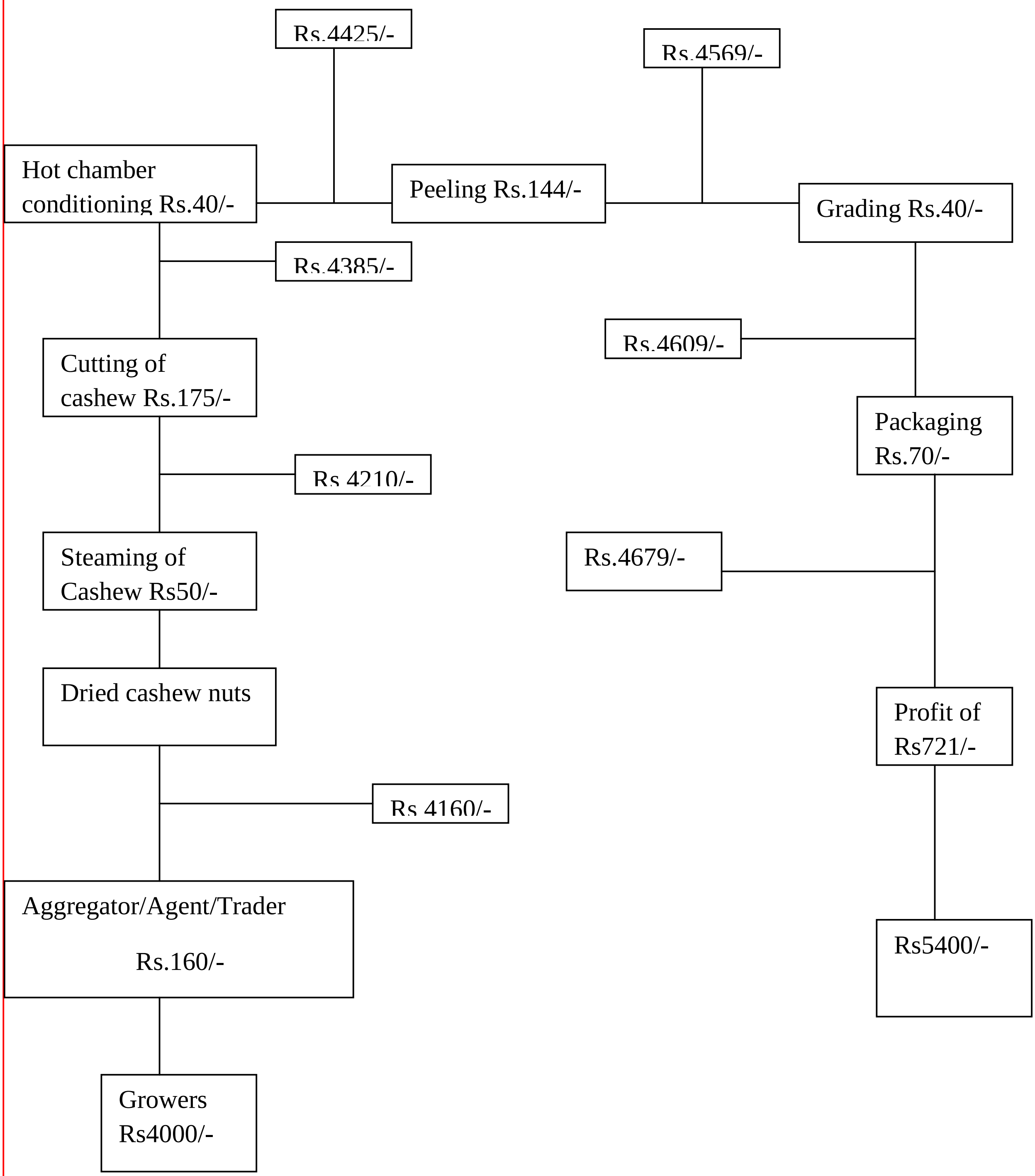
2.1 Value Chain Analysis

Looking at the production process of cashew kernels and its by products in the existing value chain of the cluster which is followed by traditional roasting method shows a net profit of Rs 624/- where as in the proposed future value chain through advanced boiling process, this can be more than double (Rs.1632/-) from 80 Kg cashew nut bag. Both values chains are shown in an analytical form below:


VALUE CHAIN ANALYSIS
(ROASTING METHOD)
Rs.4360/-
Rs.4504/-
Hot chamber conditioning Rs.25/-
Peeling Rs.144/-
Grading Rs.40/-
Rs.4335/-
Rs.4544/-
De-shelling of cashew Rs.125/-
Packaging Rs.70/-
Rs 4210/-
Roasting of Cashew Rs50/-
Rs.4614/-
Dried cashew nuts
Profit of Rs261/-
Rs 4160/-
Aggregator/Agent/Trader
Rs.4875/-
Growers Rs4000/-
RCN one bag =80 kg
Cost Rs.4000/-
19.5kg Whole kernel
@ Rs.250/- per kg Rs 4875/-

VALUE CHAIN ANALYSIS

(BOILING METHOD)



RCN one bag =80 kg — 20 kg whole kernel

Cost Rs.4160/- — @ Rs.270/- per kg Rs.5400/-

From the value chains shown above it is observed that both roasting & boiling methods are highly labour intensive and the labourers are mostly unskilled .These labourers work in the processing of cashew after it came out from the roasting drum or boiling apparatus. They work from cutting to grading. The payment is made to them on piecemeal basis. The cashew processing units are also run by semi skilled labourers whose number is very few. They work on roasting / steaming. The machines used in roasting method are old, obsolete and fabricated. The processors also lack the basic understanding of quality aspect of the product & the possibility of addition. There is absolutely no further development of the product after grading. There is also a sense of fear among the processor about marketing of the processed product.

By comparing both the value chain, it can be observed that boiling method is superior to roasting method owing to its less pollution, breakage percentage, quality of finished product & marketability. This will be taken as our future intervention as bench mark. The present cashew processing units can be upgraded to steam boiling which will emit less pollution, produce high grade quality of cashew kernels with less percentage of breakage(2% -3%) which is currently seen as 30%. The other value addition in the product can be taken in making the tin packs with tight containers for targeting niche market. . Further value addition by making the product more diversified by making it cashew chocolates, cashew burffies, cashew sweets & salted cashew. Also the cashew kernels of the cluster can be given a brand name of its product which can help in reaching international markets.

Some suggested steps for upgrading the present value chain may be summarised as follows.

- Converting the roasting to boiling
- Having proper packaging with gas filling to increase the self life
- After grading cashew can be further value added as roasted and fry cashew
- Proper brand name can be created and developed for domestic as well as international market

2.2 BDS Analysis:

2.2.1 A brief note on BDS market

A quick assessment of BDS market by the Diagnostic study reveals a broad overview of the BDS market in the cluster. It covers assessment of present demand & supply of strategic services, its identification & profiling of existing services. This also helps in finding critical gaps in respect of certain services and range of possible interventions.

BDS market analysis

BDSP	Critical services	Purpose	Quality of service offered (P-Poor, A-Average, G-Good)	Remark
Govternment BDSPs				
OSCDC	Plantation leasing	Raw material	P	Set up to look after the plantation only
DIC	License Infrastructure Technology support Financial linkage	Support to establishment of unit and having necessary certificates	G	Have presence in the district having a strong human resource base equipped with skills & expertise
NHM	Cashew Plantation	Promoting plantation	G	Introducing plantation of hybrid clone
Nationalized Banks	Credit	Working capital	A	Lot of documents and collateral needed for SMES to avail credit
Private Unorganised BDSPs				
Raw material suppliers	Raw Cashew		A	No/low awareness on quality No storage facility Availability of adequate working capital
Equipment suppliers	Machinery and after sales service	Fabrication and repairing of machinery and equipment	A	Since the SMEs of the cluster are having less information on this , so the demand is not assessed so far
Traders	Marketing support	Connecting the MSME to national and export market	P	Quality is not up to required standard. Low capital
Transporters	Marketing support		A	Availability of less no of destination trucks

CA Firms	Accounting and auditing		G	The Units are not interested to avail services due the their cost
Pvt Banks	Credit		A	Too much pressure through unethical means for repayment Focusing more on Medium and big entrepreneurs
BMOs				
MSME Association			P	No proper governance system, No registration No infrastructure to run the services, Information dissemination is not happening

3.2.2 Problems affecting development of BDS market

Demand side problems	Supply side problems	Transactional problems
Entrepreneurs are not financially well enough to avail the BDS cost on individual basis	No scale to operate looking at their business viability	Industry runs with credit
SMEs do not have sufficient working capital to go for value added products. Lack of marketing skill and branding knowledge.	No effort has been made so far in creating awareness of the BDSPs for the scope of work in this area.	Absence of proper documentation
Lack of exposure and knowledge of MSMEs about specialised services available in this sector	Unorganized sector with highly informal set up having less information	Too much dependency on government subsidy
MSME does not see value of service BDS service like financial, marketing &technology up gradation. No innovative in their mindset.	BDS providers looks at their scalability of operation in financial, marketing &technology up gradation	

2.3 AOBO & Pressure Points

2.3.1 Analysis of Business Operation

A) Raw material

Cashew is a seasonal crop mainly collected from December to April. The growers are the primary source to maintain the quality in the processing industry. Though earlier they used to sell the cashew nuts from the orchard itself without drying, the trend has changed in recent times. Now the growers are drying the nuts for 5-7 days before selling it to the aggregators. This fetches them a better price. The raw materials come to the unit largely through the aggregators and the agents appointed by the MSMEs. In some of the remote areas like Gumma and Raygada of Gajapati district, the growers bring the cashew nuts to the weekly market where the traders purchase these nuts and then supply it to the processing units.

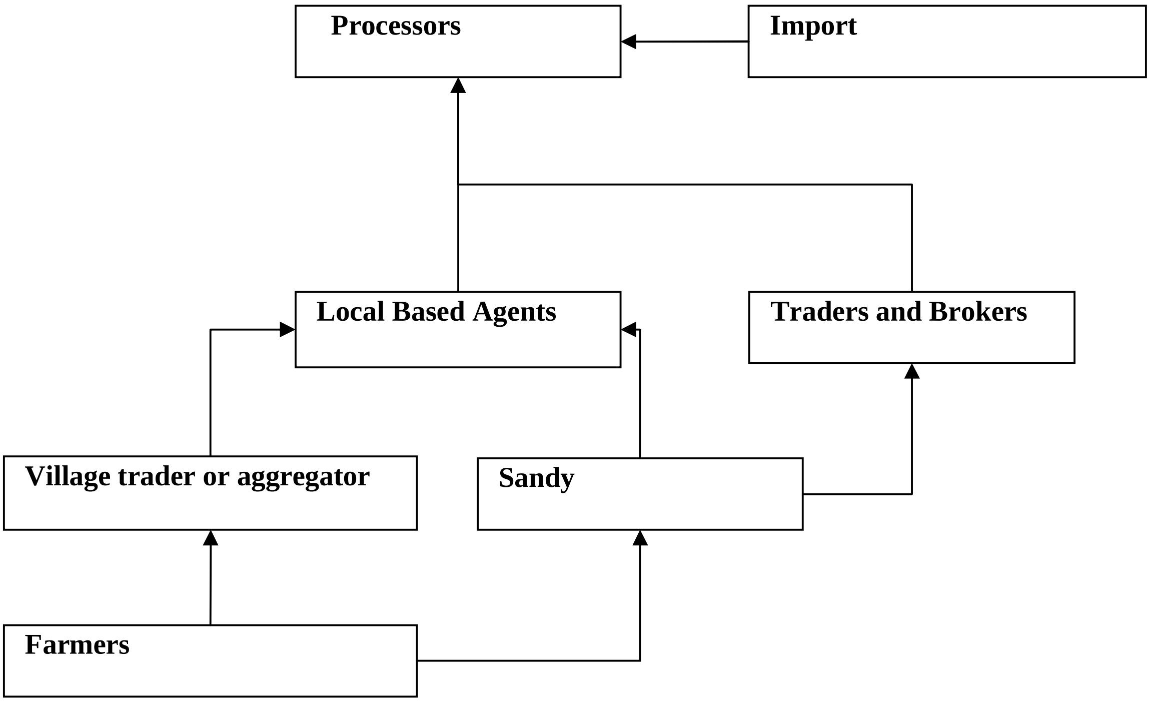
The unit cost of local raw material is Rs. 4000/- per bag (80) and imported raw cashew is Rs.3000/-it may vary from time to time. Imported cashew is inferior in quality. The price fluctuates over the period of time, therefore common procurement can reduce the cost and uniform productivity can be insured.

About 4739 hectors of private lands utilized in cashew cultivation are free from chemical fertilizers and pesticides hence cashew cultivation here is called as organic cultivation. This can help the processors getting organic certificate which can help them to export and augment better profit.

80% of raw cashew utilized in the processing units are met by the cluster and near by districts where as 20% procured from neighboring states through importers. In spite of this the existing processing plants are able to utilize 65% -70% capacities due to lack of adequate raw materials (RCN). This problem can be solved only if sufficient credit facilities through banks are available to industries and central storage/godown is established.

Possible BDS providers in this area can be the Processors association, financial institution and the research wing of OUAT. The association can be the sole importer and create the RCN bank which can be accessible to all MSME. It can play the role of facilitator for availing the WC (working capital) from various banks and pass it on to different units and charge the interest from them

Raw Material Procurement Flow Chart



B) Technology

Most of the MSME are still continuing with old method of roasting of RCN. This roasting machine creats lot of smoke which is detrimental to the environment. This also creates unhygienic work space. However the new boiling method can be a solution to this problem where there is no pollution and gives good quality product.

The possible BDS provider can be

- OUAT with the intervention related to design the machinery and provide the research guidance to MSME
- Private Machine and equipment Manufacturer in the locality can be the major BDS provider Financial institution can help the MSMEs to get loan for procuring the new plants and machinery

C) Infrastructure

. The existing infrastructure can be analyzed as

1. Connectivity to the Business centre: Connectivity with in the cluster and to out side cluster i very good as national highway (NH-5) has passed through the cluster. 90% of the units are well connected to the urban areas by metallic/ concrete roads. . Logistic management is relatively easy as they can transport the stock to the national and the major port for export at any point of time. The major transport companies like TCI, Sawani, and district truck association are having their office in Berhampur.The units are well connected with railway stations having access to important cities of India.

Though most of the units are well connected to national high way but they are located in the interior where the access to internet is very limited. They have to come to the near by township for the business communication. The regular power supply is also problematic due to the inadequate power supply form State board. That may be the reason why the improved packaging technique is not being followed.

2. Building and Packaging: Most of the units are having tin or asbestos roof with little ventilation. No sanitation is maintained in the building which adversely affects the quality. Peeling, grading and sorting is going on in open floor which can be developed to larger extent by proving the tables and trays. Most of the units are using the open space of the plant for the packaging which is exposing the kernel to natural hazard. As sealing is being done by hand with candle, so they prefer the open space.

3. Storing: Though State Ware House Corporation and Central ware housing corporations are having their go downs in Berhampur but no body is using it for the storage of kernels. The entire space is booked by the fertilizer companies and FCI for entire year. That is the grey area which limits the hoarding capacity of the MSME and forced them to trade the product immediately after manufacturing.

The possible BDS who can provide the service are

- OSWC/CWC which can increase their present capacity or build new structure for the purpose of storing the finished cashew. They can also provide the storage for RCN during harvesting season
- Financial institution can provide soft loan to the MSMEs association to build the storage for their use
- The district truck owners association can help the MSME by providing the transport facility in time for the destination. It will be great service at the time of export commitment
- The SMEs Association can take step for having a common warehouse type of facility where they can keep their raw material in bulk. This will help the member unit to get the material at the time of need. There should also be a cold storage short of infrastructure developed by the association where finished products can be kept for a longer period before its marketing

D) Finance

A strong banking network is available in the cluster for financial assistance but they are not catering to the need of Cashew processing units. The issues with the banks are

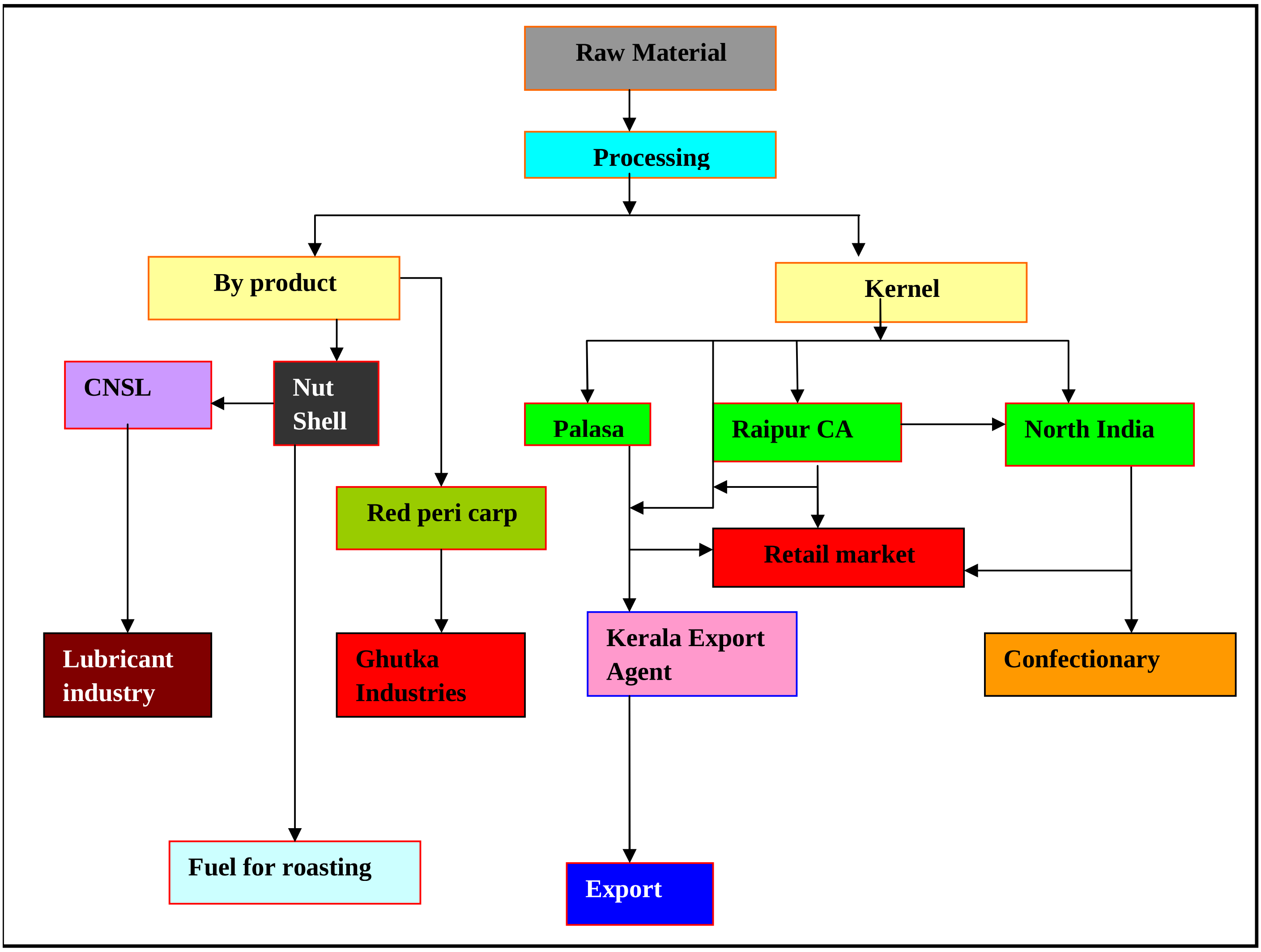
- Tedious and lengthy process of documentation
- Collateral security
- Time consuming process

The possible solution to this can be change in the banker's mindset with flexible rules & documentation and sensitise them to customise their products as per industries demand. .There should also be a single window operation for availing the finance which is not currently available in the cluster.

E) Marketing

The marketing of cashew crop is quite unstable and independent of the local processing scenario. Though Palasa is the big market, but the commission agent from Raipur also plays a major part as they provide the transport and manage the sale. Some of the processors directly access the North Indian market, but the export market rotates through Kerala traders. However, all the deals are made on ex-unit basis. The existing market flow chart has been depicted below. There are issues in marketing which is detrimental for the growth of industry. The marketing for small entrepreneur is quite conventional and dependant on the middleman. They neither have the market information nor have the access to the up market. Though 50 MT of quality cashew being exported from the cluster but it is done through brokers and export house of Kerala. The total turn over of the cluster is about 5300Mt with value of Rs.160 crores. The average domestic price of the cashew varies from Rs.220-/ to Rs. 300/- per kg depending on the quality and grade. At present MSMEs are able to grade only 10 types which can be graded up to 32.

Exiting Market Flow Chart



Marketing is a grey area for the MSMEs which needs special attention. There is a need to create new BDSP or pull them from various part of the country to the cluster. The possible creation of new BDSP is

- Processors association which will have its own export license and promote the brand by inviting buyers from domestic & international markets.
- Export house in the nearest port town to help in documentation and loading of containers
- Certifying agencies like SGS and Geo chem. in port town which will certify the standard at both end of export
- Transporter like TCI and SRMT which will transport the produce in hygienic condition to the destinations

2.3.5 Human Resource

Cashew processing units are highly labour intensive units where 90% of human force belongs to women who are mostly illiterate and unskilled. Children below 14years of age work in different units which can not be avoided due to the poor financial condition in the family. But the situation in case of the entrepreneurs of the Units are quite different. Though the education level is not so high but all are literate. This low educational qualification may be due to the inheritance of these units from their forefathers which engaged them in business from early childhood. None of the processors have undergone any specialized training for management purpose. They lack the technical knowledge but have the entrepreneur attitude.

2.3.6 Socio-environmental analysis

This industry is directly affecting the socio economy of the cluster. It provides the livelihoods for the 12000 families by direct employment for 220-250 days in a year. Out of the total employment 90% are women. But there is little effort taken to see the minimum facility for these poor women in their regularity & provision of other benefits like insurance, PF & health. Poor health condition and Sanitation is a big problem in the area but no major initiative has been taken to insure their health and life. Use of old roasting method creates the environment pollution by producing lot of smoke**.**

3.0 Derivation

3.1 SWOT Analysis

	Strengths	Weaknesses	Opportunities	Threats
Raw material	• Easy availability of dry cashew nuts in the vicinity. • Organic way of cultivation with no use of chemicals/pesticides	▪ Too much dependency on import of raw materials Aggregators lack the knowledge of quality ▪ Lack of storage facility in processing unit ▪ Lack of insurance coverage for raw material	▪ Government is focusing on increasing the area through various interventions ▪ KVK is accessible for the MSMEs and NHM is also working in the cluster	▪ Degradation /deforestation of cashew plantation in cluster area
Technology	▪ Few units have exposure to advance processing through boiling	▪ Use of old and obsolete methodology ▪ Low sanitation and unhygienic working environment ▪ Most of the MSMEs lack the pollution board certificate	▪ MSMEs are showing interest to adopt the new technology ▪ Subsidiary industry of CSNL can be developed ▪ Government policy is promoting technological changes ▪ CSNL processing units have the knowledge and units are willing to avail the service.	
Infrastructure		▪ Lack of kernel storage facility and poor maintenance		
Finance		▪ FIs are not willing to finance cashew processing due to its seasonality. ▪ Lack of knowledge on book keeping and proper documentation	▪ Presences of nationalised banks ▪ RRB and DCCB are also willing to provide BDS ▪ Presence of private banks	

		for availing loan. ▪ Improper financial flow due to delay in payments		
Marketing	There is demand in the national and international market for all grades of cashew Proximity to Palasa ensures the local market	▪ Lack of quality certification ▪ Too much dependence on local and national market ▪ Lack of understanding of SMEs about the market channels ▪ No systematic MIS ▪ Fluctuation of demand in national and international market ▪ Market seasonality	▪ Growing Export market ▪ Consumption in local market like use in confectionary is increasing day by day	▪ Speculative and volatile market ▪ Changing government policies
Human Resource		▪ Use of unskilled labour ▪ MSMEs lack enterprise skills and knowledge ▪ No second line managers ▪ Poor accessibility to the information related to the industry ▪ More production oriented rather than quality oriented		
Socio/ Others		▪ Lack of minimum facilities for women workers	▪ Development of strong MIS to map the resource planner ▪ Registration of companies under the section 25 Company Act	

The major issues identified by the SWOT analysis are:

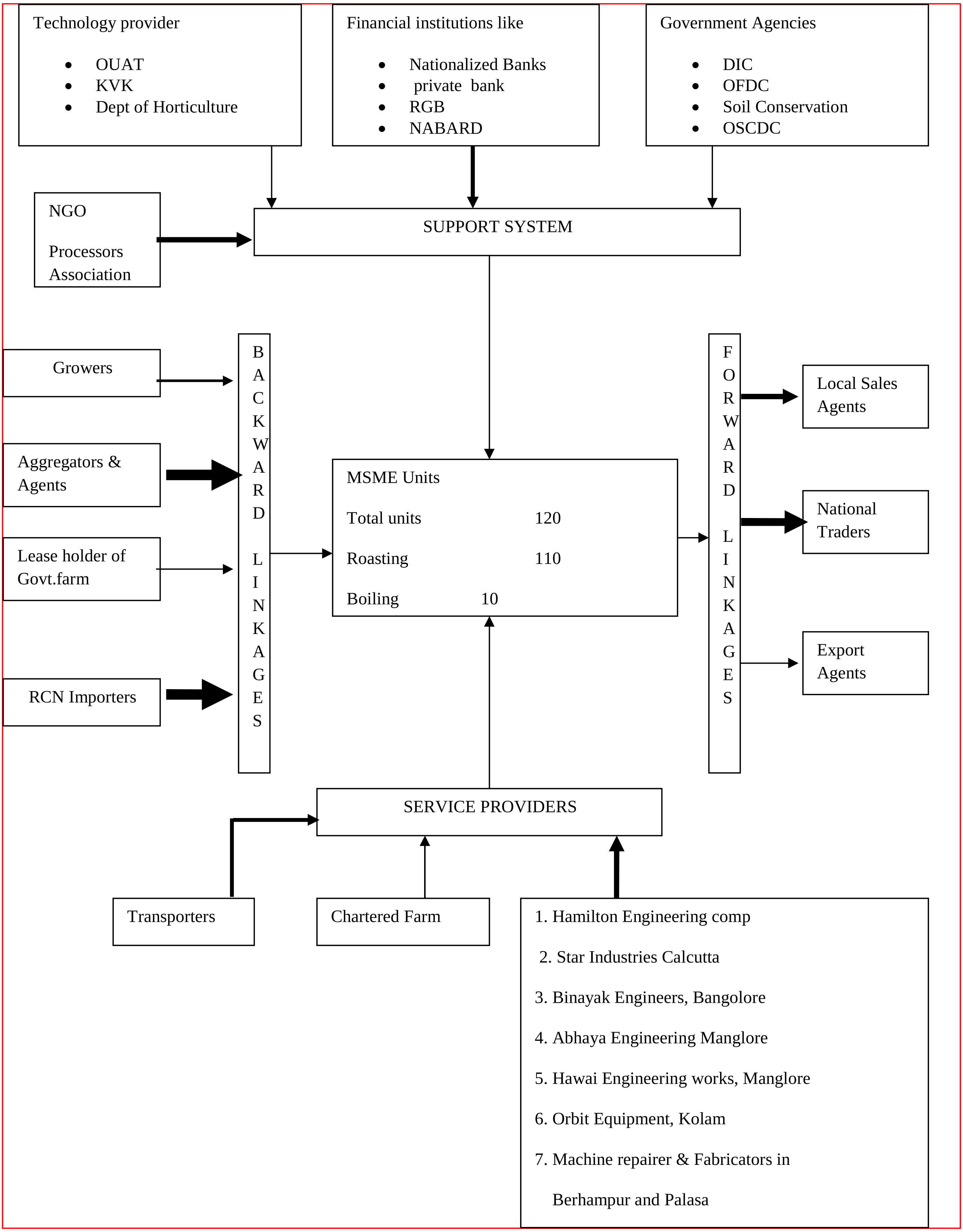
- Information constraints related to appropriate processing technology, future market, raw material prices and existing support system
- Technical constraints related to processing
- Lack of awareness on quality, testing facility and certification
- Restricted product range
- Absence of a strong forum to carry out joint action
- Dissemination of information
- Labor intensive industry with minimum support for them
- Poor financial linkages for processing units

3.2 Current Cluster Map

Cashew processing cluster of the districts of Ganjam and Gajapati is spread over 7 blocks of both districts. The industries are located at the villages of Garabanda, Kasinagar, Rampa and Labanyagada of Gajapati district, and Chatrapur, Gopalpur, Rambha, Berhampur, Belaguntha, Sorada, Keshpur, Mandiapalli and Khalikote of Ganjam district.

Most of industries are producing kernels with adoption of traditional technology like simple frying / roasting technique. Only few of the units (10) in Rambha area of Ganjam process the cashew by adoption of the boiling technology.

The arrows shown in the cluster map given below gives a clear indication of the very strong & weak relationship of the farm/institutions with the MSMEs be it a support service institution or BDSP. A thick arrow shows there is strong relationship in which the MSME is linked with the farm/institution in a day to day basis. The dependency is more & their interaction is frequent.In case of a less thicker arrow it shows the relationship exists which is less in comparison to previous. In case of a weak arrow there exist relations hip which is very causal. We can take the example of the farm with the aggregators & traders which is very thick where as in case of exporters it is very thin at present


Technology provider
OUAT
KVK
Dept of Horticulture
Financial institutions like
Nationalized Banks
private bank
RGB
NABARD
Government Agencies
DIC
OFDC
Soil Conservation
OSCDC
NGO
Processors Association
SUPPORT SYSTEM
Growers
Aggregators & Agents
Lease holder of Govt.farm
RCN Importers
BACKWARD LINKAGES
MSME Units
Total units 120
Roasting 110
Boiling 10
FORWARD LINKAGES
Local Sales Agents
National Traders
Export Agents
SERVICE PROVIDERS
Transporters
Chartered Farm
1. Hamilton Engineering comp
2. Star Industries Calcutta
3. Binayak Engineers, Bangolore
4. Abhaya Engineering Manglore
5. Hawai Engineering works, Manglore
6. Orbit Equipment, Kolam
7. Machine repairer & Fabricators in Berhampur and Palasa

3.3. Vision for the cluster

"We see Ganjam and Gajapati cashew clusters as the preferred centres in the country by providing quality product in domestic and international market with a business turnover of more than 200 crores by the year 2011 by creating BDS market for the processing units in the critical areas of market, finance, technology, skill and other related areas ".

The vision is to bring overall changes in the units in the cluster by adopting new technology and up grading skills to meet the requirements of the export market.

At the end of the project we have to ensure that the following will be achieved:

- 10 new MSMEs to be added to the industry
- 20 roasting units converted to boiling units
- 40 MSMEs able to access financial institution
- 10 crores - amount of finance availed by the MSMEs
- 80 MSMEs able to access imports
- 30 MSMEs able to access exports (directly)
- 30 units - Quality upgraded
- Registration of association with EXIM license
- Product development with brand name

Broad Strategy:

- Capacity building of various stakeholders
- Creation of new BDS cadre for sustaining activities
- Identification / creation of best technical practices and dissemination
- Organizing a series of workshops and seminars in the cluster
- Exposure visits of MSMEs in and out of the state
- Focusing on exportable quality
- Strengthening the association
- Promoting the association as the sole agency for import and export
- Creating brands
- Availability of working capital
- Creation of SPARC model at cluster level
- Creating a cashew bank

3.4 Suggestive Action Plan

As it was observed and noted in the AOBO & SWOT analysis, the industry suffers from multiple problems such as technology changes, information sharing, financial leveraging for running the unit coordination among the MSMEs, etc. Also in the front of sourcing of raw materials, it is totally controlled by few importers from Kerala seems to be the problem at present due to its pricing. There is also no product development to access the market and the production quality is way behind the international standard. For the above mentioned problems the following action plans are suggested

- Training for improvement of processing & quality
- Organize training for value added products & grading
- Exposure visit to bench marking clusters
- Encouragement to the stakeholders through regular interactive meetings
- Creation of a cadre of new BDS Providers by imparting trainings.
- Organize training programmes for the workers skill up gradation
- Credit linkage with banks & other institutions for technology up gradation /working capital
- Organize training programme for the workers for skill up gradation & grading system of cashew kernel
- Establishment of a raw material bank at the association level
- Creating a brand for the local product & obtaining quality certification of the same.
- Initiating market surveys & linking the units with high value markets

Identification of the Activities as per the suggestive action plan

Trust Building

As cashew is a high value commodity; the processors involved in the activity are more socially recognized and financially well off in the locality. Their support is essential for any changes to be initiated in the sector. Once they are well informed and understand the reality of the sector, they will be motivated to adopt the changes and also help each other grow. At present, each MSME acts independently without interaction with each other. They need to come closer and understand the problem in a collective manner. In order to bring them together, ACCESS will adopt the following strategies:

- Bringing all the processors of the cluster to a common platform for an informal get together. The cashew processors association and the cluster development company will play the lead role.
- Initiating the process of forming a cluster coordination committee (CCC) with membership of different BDS providers
- Ensuring that the CC meeting is conducted at regular intervals. We may start with a quarterly basis meeting.
- Conducting workshops to announce objective and work plan of the project

Technology Upgradation

The cashew sub cluster has 120 units of processing plants out of which only 10 units have modern facilities of the boiling method of production. Majority of the cases are still following the old and obsolete method of processing called the roasting method. Thus, there is an imminent need of introducing/ promoting the new technology by replacing the old one. The advantages of replacement are:

- It is environment friendly
- Recovery of output in new system (boiling) is more than 5%
- The by product can be added to the value chain by extraction of the Cashew Nut Shell Oil (CNSL)
- It produces brighter kernel than the one produced by the roasting method which usually fetches better price

To exploit these advantages, the industry has to understand it completely and take this change seriously. At present, the export scenario of the state is very poor. To take up the activity with the MSMEs, we may have to take up the following strategy:

- Arrangement of workshops with various BDS providers like OUAT, bankers, DIC, Govt. department of horticulture and Agriculture etc.
- Capacity building of the existing units to adopt the new technological changes and to upgrade the skill of the labourers involved in the process
- Provide an opportunity to interface with financial institutions in an organised manner
- Organising the exposure visit of the selected MSMEs inside as well as outside of the state
- Help them to improve their infrastructure so that they can maintain hygiene in the processing unit

Policy Level Intervention

Most of the industry people do not have knowledge of the national as well as the state policy formulated for the sector. They have little interest to understand it and that is the reason why they have not availed the benefit from the policy. To make the MSMEs more convergent to the various agencies, we need to follow the following strategy:

- Organise workshops to brain storm on the requirement to be incorporated in the policy and follow it up
- Explain the policy to each and every MSMEs related to the industry

Promotion of MSMEs Institution/ Association

An institution will provide an opportunity to the MSMEs to increase their collective bargain. Democratic control makes it stronger. There is one state level cashew processors association which is not registered but has a dynamic leader called M.R.Sabat who attends the national as well as state level seminars and workshops. He needs support from the industry people to further increase the participation. A lot of opportunities exist to strengthen the organisation. The strategy to follow is

- The association need to be registered under Company Section 25 Act.
- The association will then be the sole importer and exporter in the state. All the MSMEs will be required to apply for the import of raw material to the federal body. In this manner, there will be no monopoly of the Kerala importers in the operation. Therefore, all the MSMEs of various capacities will be able to avail the opportunity to source out the raw material. In that case, the association will act as the cashew nut bank from where all the MSMEs can access the raw material as per their need and financial strength.
- The association should also then be a member of the export body of cashew at the national level instead of individual MSMEs. This will help to improve the quality of the product to meet the international standard. In that way, all the MSMEs can have uniformity in product and price.
- There will be regular association meetings to take up the matter on a regular basis.

Focused Backward Linkage

The entire industry survives with the low quality of raw material available to them. The sourcing of raw material has a long and unorganized channel which is a grey area of the industry. It creates more dependency on the import of cashew nuts. This area needs a lot of attention to streamline the process. The strategy to follow is

- Organise the growers to have their own group which can be federated to apex cooperative. This will ensure quantity and quality of raw material to the MSMEs. It will also ensure uniform price to all the growers.
- There will be capacity building for the village aggregators to increase their skill in quality maintenance at the field level so that they are well equipped with the necessary machinery to check the moisture at growers' level.
- There will be awareness camp in the cluster for the growers to create a sense of belonging to the industry and also enhance their productivity.
- Building of strong cadre of BDS facilitators
- Establishing the Small Processors Assistance Resources Centre (SPARC) model at the cluster level

Trade Promotion

Cashew is a semi perishable commodity having fixed life span. The most important factor in the entire value chain is to see that how fast the product can be delivered to the wholesale or export market. Increase in sales is the single most important factor to motivate the MSMEs to adopt the industry. There is no product development and brand name in the cluster which signifies the opportunity to launch own product in the national and international market. We may go for the following strategy:

- There is a need for an extensive study in the national and international market to launch a brand name. The brand development and placement in various markets should be focused. Also, once the fair trade certificate is obtained, there will be huge opportunity to explore in the European market.
- There is a need to create a market MIS both at the project and association level
- The focus should be on the export market

- There is a need to attend seminars and trade fairs at the national and international level to present and promote the brand.

Detailed Description of the Work Plan: The work plan for the project can be divided into four parts - preparatory stage, capacity building stage, day to day monitoring and handholding stage and project phase out stage.

- **The preparatory stage –** This stage, spanning around 6 months, will consist of stakeholder analysis and mapping the various BDS providers and entrepreneurs working in the cluster

- **The capacity building stage –** This stage will be covering around two years and all the training, workshop and exposure etc will be conducted in this stage. Systems will be designed based upon the requirement of the organizations and best practices of the sector. Many training programs on skill management, process modification, quality maintenance leadership, operation management, export management etc will be conducted to make the association operational.

- **Day to day monitoring and hand holding stage –** The systems established in the initial phase of the incubation process will be institutionalized during this stage. Any mismatch between the systems developed and the operation in the field will be sorted out through various need based training and workshops. There will be monthly reporting and quarterly formal review.

- **The phasing out stage –** At this stage, the MSMEs institution will be strong enough to handle the work and liaison activity to make the industry sustainable and more profitable. There will be desired growth at each level.

Case Study of an Agro Processing Unit at Chhatrapur

Mr. Sushil Bhattacharjee, an old entrepreneur handing over the baton to his young and dynamic son Mr. Nihar Bhattacharjee

Mr. Sushil Bhattacharjee came to Chhatrapur, Ganjam dist, with his parents before independence and settled there. The young Sushil was a dreamer and wanted to pursue a career in business. 25 years back he came to the industry with a small investment to explore his fortune. Now he owns one roasting unit and one boiling unit with an annual turn over of more than 10 crores.
He started the cashew processing in a small tin thatched house with 2 bags of cashew per day. There was no labour problem but he himself worked like labour. At the end of the day, it was difficult to sell the cashew produced by him and he had to sell at prices quoted by the Palasa traders. Now time has changed, and there are nearly 250 employees working on daily basis in his 2 units and he is able to handle 25 bags (each of 80 kg weight) of cashew nuts in each unit. He has got the proper registration certificate from Pollution Board, FPO, DIC and VAT. He is a fair businessman, who pays his taxes on time. He has developed several contacts in North India and Hyderabad. According to him, the main issues in the industry are:

- No storage facility
- Difficult and tedious banking process to avail loans
- Not able to develop the brand
- Too much dependency for raw material on Kerala importers

The constraints in the industry did not hinder him and he overcame all problems with confidence and has now already made his young son ready to take his business to the next generation.He has set an example for the industry how to be a successful entreprenure.

PART-TWO

KEWDA
(Pandanus fascicularis)

1.0 Frame Work

1.1 The Cluster

Kewda is a dominant species in the costal vegetation of India. The plant grows abundantly in the coast of Ganjam district in Orissa. The plant constitutes the backbone of the local economy by way of providing raw material, male inflorescence, for the perfume industry. Presently, in Ganjam, 140 distillation units are spread over 4 blocks i.e. Chhatrapur, Rangeilunda, Ganjam and Chikiti within 60 kms radius. The plant is also known for its use in traditional medicine as well as in cottage industry. The Kewda processing units located in the district provides direct employment to 2650 individuals those who work as labourers & supervisors where as the total dependent households in sub sector are more than 15000 households in four blocks which includes growers & aggregators.

Ecologically the plant is important. Root system of kewda binds soil and checks soil erosion. Owing to the benefits that the people derive from the plant, it is being conserved and propagated (as a cash crop) on a large scale. The aromatic principle extracted from the inflorescence of the plant from Ganjam coast reportedly is of higher quality than that from other regions of the country. (Source: FFDC, Berhampur, Orissa)

Agricultural Production and Existing Trade Patterns

The Kewda shrub starts flowering after 4-5 years of planting. 5-year-old plants attain an average height of 170 cms with a stem circumference of 50 cms and with 20-25 aerial roots and bears about 4 flowers. The flower production increases with age, up to about 25 years (24 flowers per plan/per year). The flowering depends on the branching of the plant, the rainfall and closeness of a water source. There are two main seasons of flowering of the kewda plant. The peak season begins in the month of May / June and lasts up to September / October. About 70 percent of the flowers are produced in this season. The rest are scattered during the year in the months of November to April. Generally warm and moist weather is conducive for flower production and plants are harvested by hand after breaking the stalk with the help of a stick fitted with a hook. Knives are avoided as it may damage the flower bud. The best time for collection of flowers is early morning. The flowers are then immediately taken to the distillation units for distillation of oil. (Source: FFDC, Berhampur, Orissa). The distillation of kewda flowers is carried out for three major perfumery products i.e. kewda essential oil (Rooh), kewda attar and kewda water.

1.2 Production process & Flow Charts

Processing Method

- *Collection of flower:* The kewda flower is plucked by the primary growers early in the morning and they sell these flowers to the aggregator, who in turn supplies these flowers to the distillation units on a commission basis. In some cases, the farmers directly sell the flowers to the distillation units**.**

- *Grading-sorting at the distillation unit:* The supervisor counts the no. of flowers and keeps the account at the factory level. The workers in the unit grade it by peeling away the green leaves and discarding the rotten flowers. Then the graded flower is used for distillation. The proportion of water and flower used is 2:1.

- *Tighten the deg's rim with clay snake and cover it with a metal clamp:* The rim of the deg is totally encircled with clay snake and the lid is forced down upon it, using a simple metal clamp or kamani spring, which slides under the rim and over the lid, into which a heavy weight is placed.

- *Connect the chonga (bamboo pipe) with a lid and receiving vessel:* The bamboo pipe (**chonga**) connects the lid with the receiving vessel (**bhabka**).

- *Collect the steam and keep the receiving vessel cool:* The steam is collected into a receiving vessel, which is kept in a water source for cooling purpose.

- *Separation of oil and water:* After collection of the steam, it has to undergo the cooling system to separate oil and water.

- *Packaging:* The end product of oil and water is packed in separate containers (rooh and attar in bottles and water in big size drums).

- *Storage:* The finished product which is very delicate has to be stored in a cool chamber.

The process is explained in the diagram.

PROCESS FLOW CHART – KEWDA

Kewda flower

↓

Removal of green outer leaves

↓

Cutting into small pieces

↓

Put into the Deg with water (Flower: Water = 1:2)

↓

Tighten the Deg's rim with clay snake and cover it with a metal clamp

↓

Connect the Chonga (Bamboo pipe) with Lid and receiving vessel

↓

Collect the stem and keep the receiving vessel cool

↓

Separate the oil and water

↓

Packing with Bottle / Drum

Product Range (Output)

The distilleries normally produce three types of diversified products such as rooh, kewda water and attar. The use of these are given as follows.

- Kewda Rooh – Used in the gutka industry intensively and also used as an edible essence
- Kewda Water- Used as an ingredient in the sweets and the gutka industry
- Kewda Attar- Used as perfume

By Product

This is a type of industry where the by-products are minimum like waste portion of the flower, cooking coal, ash, which is used as compost. The industry itself is eco-friendly when one looks at it from the pollution aspect. The biggest challenge of this industry is the use of fire wood as an important input which causes large scale deforestation.

1.3 History of the Cluster

1.3.1 Evolution of the Cluster

Kewda is abundant in the coastal region of Ganjam district where the plant constitutes the backbone of the local economy by way of providing raw materials viz. male inflorescence for the perfumery industry. In Ganjam, there are 4 blocks - Rangeilunda, Chhatrapur, Ganjam and Chikiti where kewda is cultivated or is growing wild since the last 90 years. Since kewda is an aromatic plant, it grows in every nook and corner of the 200 villages. It requires no special care for vegetation and budding. The flower which generally blooms in the morning has a high potential value for the locals. Kewda distillery units which are situated in almost all the villages of the 4 blocks generate employment for the local youth and also contribute to the local economy to a great extent.

During British period the railway line between Howrah -Madras was opened for public. This line passed through Orissa which created inflow of outsiders to the state in search of livelihood opportunities. This also opened doors to many traders to explore new business opportunities in the state. During this period the traders especially from Muslim community from Uttar Pradesh who were into Attar (Perfume) business came & found the very beautiful wild flower with sweet fragrance named kewda. After observation of this flower for few days they started extracting the essence of this flower and then thought about the business possibilities.

Its demand gradually increased and more number of processing units started by the UP people. This process continued for some time without sharing their trade secret. After so many years, in 1960 the first kewda distillation unit was set up by a local entrepreneur named Mr. Gangadhar Nayak. He started with 2 degs and now he has four units with the capacity of 15-20 degs in each unit. Mr Nayak also took step in forming an association of Kewda growers in his Panchayat. He contributed his business profit in establishing a school in the area. His business prosperity inspired others to take up this trade.

Few years back, TATA Group of Companies wanted to build a port based steel plant in the area, but this was highly resisted by the locals. The main reason behind the protest was kewda cultivation, which is considered by the locals as a gold mine!

1.3.2 Overview of past & ongoing Intervention

FFDC(Flowers & Fragrance Development Centre) a Government of India entity established a Technical Service Centre(TSC) under the Ministry of MSME during the year 2000 at Berhampur . The main functions of the centre are to provide technical skills & know-how to both the entrepreneurs and growers on Kewda cultivation & processing. They also provide quality checking parameters by issuing report on standard and quality of kewda attar and rooh. Processors used to take their product to the center for checking the quality and get certification for their product before sale. The traders usually accept the quality certification issued by the centre & fix the price based on this. Apart from these services the centre also imparts advanced training on new technology for the processing units.

NABARD (National Bank for Agriculture & Rural Development) encourages promotion of growing Kewda by the farmers through its scale of assistance to bank refinance scheme. The agency also keeps year wise targets in expansion of kewda cultivation in its year wise planning PLCP (Potential Linked Credit Plans).

1.4 International, National, and State Scenario

Kewda is a densely branched shrub, rarely erect. The plant is found in the coastal region of India, Iran, Malaysia, Mauritius and Myanmar. Though found scattered over several coastal regions of Andhra Pradesh, Tamil Nadu, Orissa and Gujarat, the luxurious and gregarious growth is concentrated along the coastal belt of Ganjam District of Orissa. The traders of Kannauj, Lucknow and Kanpur have maintained their superiority in Kewda trade. The other centres of Kewda oil production in India are Kodamali in Tamil Nadu, Jaunpur, Ghazipur and Sahaswar in Uttar Pradesh, Alwar and Pushkar in Rajasthan.

The kewda flower distillation industry in Ganjam district accounts for nearly 90 percent of production of commercially viable kewda perfume in the country and 50 percent of that of the world. Approximately, business worth of Rs.80 crores in kewda takes place in Ganjam district. It is estimated that about 300-400 thousand trees produce nearly 10 million flowers annually for the production of perfumery products in the district of Ganjam. (Source: FFDC, Berhampur).

Ganjam is the only district in Orissa where Kewda is cultivated and utilized for commercial purpose. Out of total geographical area of 84840 hectares, Kewda covers 37467 hectares which is almost 40% of the total area. This crop is found in 200 villages of 31 Gram Panchayat in 4 blocks of Ganjam. The production of kewda flower in this region provides the raw material for the growth of 140 distillation units which extends livelihood for 15000 families.

Name of Blocks						
Sl. No.		**Ganjam**	**Chhatrapur**	**Rangeilunda**	**Chikiti**	**Total**
1.	Total geographical area (In hec.).	22,031	21,312	19,910	21,587	84,840
2.	Area spread over by kewda plantation (in hec.)	5,907	12,368	14,827	4,365	37,467
3.	GPs covered with kewda plantation	3	7	16	5	31
4.	Villages	35	67	73	25	200

Source: FFDC, Berhampur, Orissa

No. of Distillation Units Block Wise				
Name of Blocks	**Chhatrapur**	**Rangeilunda**	**Chikiti**	**TOTAL**
No. of Units	51	86	3	**140**

Source: DIC, Berhampur, Orissa

1.5 Vital statistics, BDS Providers, WDWP Matrix

Vital Statistics

1.5.1 Details of the Distillation Units

All the 140 distillation units are not alike in production of various products. The production capacity depends upon the no. of degs they are using. MSME's in the kewda cluster are categorised according to the following characteristics:

- Total no. of units having 1-10 degs are 105;
- Total no. of units having 11-20 degs are 29; and
- Total no. of units having more than 20 degs are 6

The following table shows the production capacity of different distillation units, as per degs used for distillation.

Table 14				
No. of Degs Used. / Name of Block	**1- 10**	**11-20**	**More than 21**	**Total**
Rangeilunda	67	17	2	86
Chhatrapur	35	12	4	51
Chikiti	3	Nil	Nil	3
Total Units at present	105	29	6	140
Present Turnover (Rs Cr.)				81.5
Present Employment (number)				2980

Source: DIC, Berhampur, Orissa

Based on turn over these micro units can be further divided into the following categories.

Unit Type	Small	Medium	Large
Unit no.	105	29	6
Avg. Turnover/unit (Rs.)	43 lakh	93 lakh	1.55 cr.

Note: This categorisation is based on own criteria and not as per industry norm. Following scale has been used for this categorisation. *Small units- turnover is less then 50 lakh. , Medium units- turn over is less than 1 Cr, Large units- turnover more than 1 Cr.*

1.5.2 BDSP

The major BDSPs in the industry listed below:

I. Private Unorganized BDSPs

Like cashew, in case of Kewda processing also there are very few BDS used in the clusters. Private BDSPs are available in the areas of raw material, machines, equipments and marketing. Raw material and equipment suppliers are providing embedded services to the firms.

a) Raw Material Suppliers

The bottom line players are the farmers or growers who collect the flowers from their fields early in the morning. They are the most neglected and disorganized players in the sector. The farmers do not grow the crop themselves, it grows by itself. However, the farmers collect it due to the proximity of the crop to their field. As a result, quality maintenance and its protection are never taken seriously. Each farmer plucks the flowers early in the morning and sells it to the village aggregators who are the major raw material suppliers to the industry. The farmers in the value chain sell the flowers to the aggregators @ Rs.6 to 7/- per flower depending upon demand. The aggregator on the other hand sells this flower to the distillery units @ Rs.6.50 to 7.50/- keeping a commission of Rs.0.5 per flower.

b) Equipment Suppliers

The traditional method of distillation of kewda requires indigenous equipments and the opportunity for using sophisticated mechanisms is very low. However, indigenous equipments like degs (big copper vessel), chonga (a bamboo pipe covered with jute rope), which are currently being supplied by the traders of Kannuj market, Uttar Pradesh. After sale services are available at the door step of MSMEs by the seller of these equipments, as most of the technicians have been deputed by the traders at the locality. Degs are available in the market with a capacity of 500 -1000 flowers.

c) Traders

Though the kewda distilleries are located only in Ganjam district of Orissa, there is no market for its products in the state, which forces the unit owners to entirely depend upon the outside market. The entire perfume and essence market in India under the control of the traders of Kannuj. Dependence on this monopolistic market, ultimately reduces the bargaining power of processors. Local MSMEs do not have a proper understanding of the market channel and have less exposure to outside markets. In this way, the market becomes completely monopolistic where buyers always have the upper hand. During the peak season, the traders from Kanauj usually come to the area and take these units on lease. They also purchase their requirements from other units (not leased) during that time. Generally for leasing of the units, there is an informal agreement between the distillery owner and the trader for payment on commission basis (Rs.600-1000/- for distillation of 1000 flowers).

II. Government BDSPs/ Support Institutions

a) ***Technology Support Centre (TSC):***

TSC is a division of Fragrance and Flavour Development Centre (FFDC) which operates from Berhampur. It has been jointly set up by the Government of Orissa and the Govt of India which helps the Kewda Industry, the entrepreneurs and the farmers by giving technical assistance, testing of oil, post harvesting technology, storing, packing and capacity building etc.

c) ***District Industries Centre (DIC):***

DIC through its various schemes and programmes promotes and guides MSME sector in the district. The DIC is headed by a general manager who is authorised to issue the certificate of registration to the industry and see that it runs as per the state policy. There is system of single window in which an establishment of more than Rs 10 lakh has to pay Rs 1000/- as onetime fee. This fee will cover registration, obtaining all tax certificates & infrastructural compliances. For units of less than Rs 10 lakh, there is no charge where as all the services they have to obtain on their own. The state government subsidy can be availed through the DIC only.

d) Nationalized Banks:

Nationalized banks are present in the cluster /district. Andhra Bank is the lead bank for cluster. The other banks in the cluster include SBI, Union Bank, Axis bank, Indian Bank and the RRBs which support the industry by extending credit facility to the MSMEs. The entrepreneurs avail of loans depending on the project proposal and proximity to the bank.

e) Khadi Board and Khadi Corporation:

Khadi Board and Khadi Corporation also support the kewda industry by providing financial assistance on subsidy basis.

e) OUAT

Orissa university of Agriculture and Technology is a premiere academic & research state university which is working on various agriculture and horticulture development programme. For Ganjam OUAT provides technical research based knowledge for the cultivation of kewda and its use. There is an independent department for the development of Ayurvedic and fragrance related crops which are under the research wing headed by Dr.Arun Das. The post harvest technology research wing also involved in developing the small tools and machineries for the cluster which headed by Dr.M.K.Khan. Both the BDS providers are located at Bhubaneswar which is far away from the cluster. This is one of the constraints for the MSMEs to avail their services in time due to inaccessibility at their door step.

f) Horticulture Department

District horticulture department is supporting and providing technical skills & know how on the growth of Kewda cultivation in the area.

g) RRL

Regional Research Laboratory a Govt.of India entity did so many researches in kewda Processing technology. It also provides trainings to the MSME's.

1.5.3 Who does who pays:

During the course of our study, we met the kewda distillery units and enquired about the service providers and their functions. We also took note of their payment structure along with the mode of payment, the details of which are shown in a matrix form below, called the "Who Does Who Pays" matrix.

Table 17: Who Does Who Pays Matrix

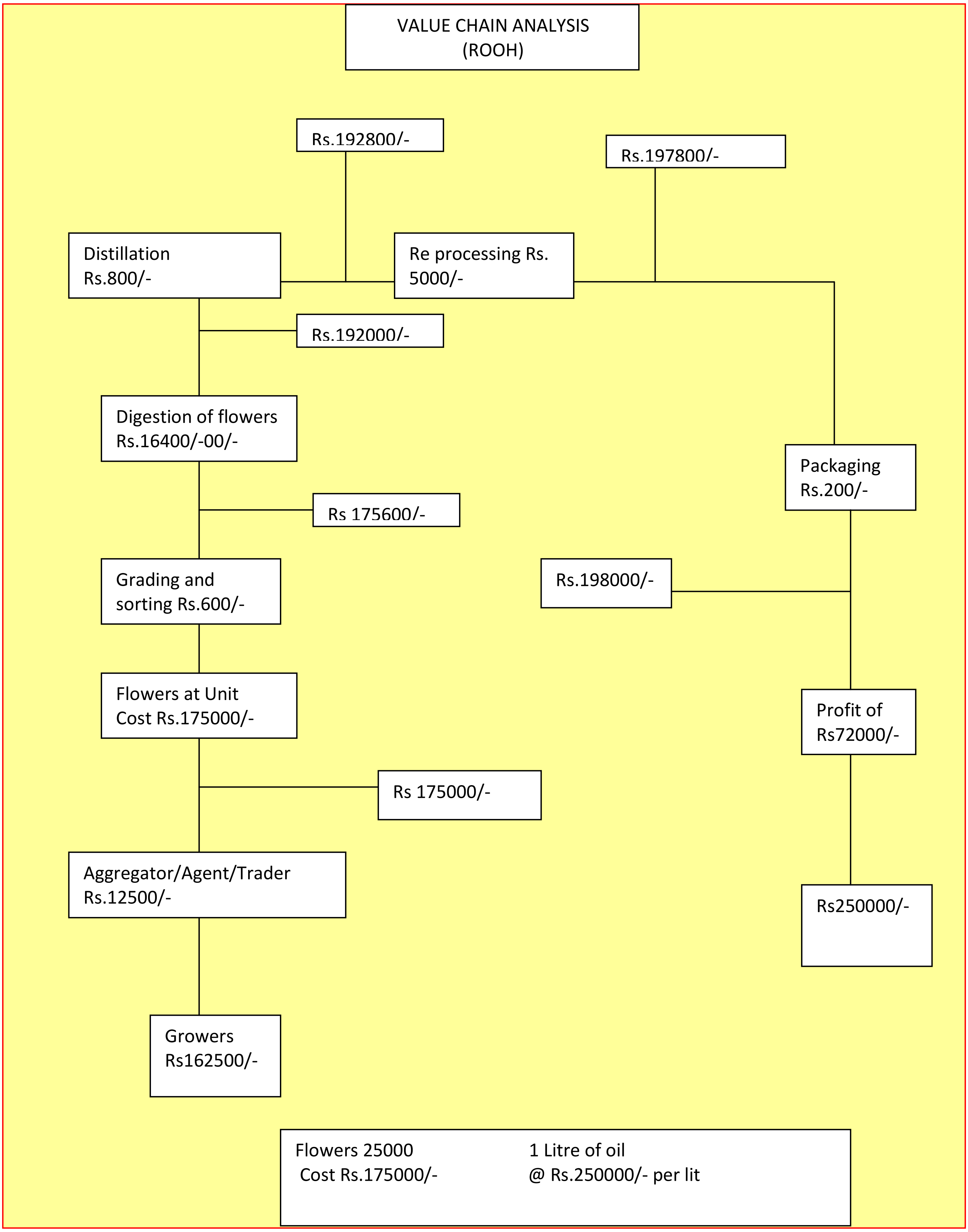
BDS Function	Who does?	Who pays?	Payment mechanism
Collection of flowers	Primary grower / Aggregator	MSMEs	Direct / Instalment
Distillation	Labor	MSMEs	Monthly/ Daily
plant machinery (deg)	Traders from Kannuj	MSMEs	Direct
Processing and Packaging	Kannuj Labourers	MSMEs	Directly on daily and monthly basis
Marketing: Transportation	Transporters/ agents	MSMEs	Direct
Organization Registration	Government	MSMEs	Direct
Business process handling	Managers/ Supervisors	MSMEs	Salary / Wages
Market Access	MSMEs	Self	Direct
Training & Development	FFDC / OUAT/ Horticulture Dept.	MSMEs	Direct / Subsidies
Finance management	Bank	MSMEs	As per norm
Quality testing	FFDC	MSMEs	Direct / Subsidies

2.0 ANALYSIS

2.1 Value Chain Analysis

Kewda essence is the final product of the cluster which is used as intermediary product for producing perfumes, Gutka (Tobacco) and mouth fresheners, sweet dishes and many other food items. Kewda essence is further divided into three sub products like- Kewda Rooh, Attar and Kewda water out of which Kewda rooh is the main product and Kewda water is nothing but its by-product generated after distillation.

Value chain of Kewda Rooh (for 1 litre)


VALUE CHAIN ANALYSIS (ROOH)
Rs.192800/-
Rs.197800/-
Distillation Rs.800/-
Re processing Rs. 5000/-
Rs.192000/-
Digestion of flowers Rs.16400/-00/-
Packaging Rs.200/-
Rs 175600/-
Grading and sorting Rs.600/-
Rs.198000/-
Flowers at Unit Cost Rs.175000/-
Profit of Rs72000/-
Rs 175000/-
Aggregator/Agent/Trader Rs.12500/-
Rs250000/-
Growers Rs162500/-
Flowers 25000 Cost Rs.175000/-
1 Litre of oil @ Rs.250000/- per lit

As mentioned in the earlier part of this report kewda price fluctuates in the market. Its marketing solely depends on a monopolistic market located in Kannuj, UP. At present the price of Rooh is approximately Rs. 2.5 lakh/ltr and Rs.100/- for 1litre of kewda water. Generally the local entrepreneurs do not manufacture the attar directly. If any requirement/order comes from the traders, in such cases they prepare it. The base oil is supplied by the traders. Otherwise, the traders take the distillation units on lease @.Rs.600 to 1000/- for distillation of 1000 flowers. This is being done by them by hiring skilled labours from Uttar Pradesh. The price of attar is not shown in the value chain analysis due to insufficient data on base oil price.

Expert View as bench mark: Issues and possible solution

During the course of our diagnostic study we contacted many entrepreneurs, traders, association members, aggregators, growers and govt. agencies. Kewda is grown/cultivated and processed only in Ganjam. There is no other processing units or technology available in India. Only the traditional method is being used by the processors, so we took the expert view as bench mark. According to their views the traditional method of distillation is the best suitable one so far the industry has for getting best quality of essential oil according to market demand. Few years' back FFDC has experimented this aspect by installing improved steel pipes instead of the traditional bamboo pipes (chonga) connected with the degs .The quality of product this method generated has lesser market demand due to its lesser aroma content though there was an increment in volume. Their experiment has failed owing to lesser demand at the traders end.

RRL, Bhubaneswar also experimented the use of rice husk in place of firewood. This process also was very labour intensive method where the cost was high & not fully eco friendly. The solution to this can be electricity, natural gas or petroleum products.

2.2 BDS Analysis

BDS market analysis

A quick assessment of BDS market by the Diagnostic study reveals a broad overview of the BDS market in the cluster. It covers assessment of present demand & supply of strategic services, its identification & profiling of existing services. This also helps in finding critical gaps in respect of certain services and range of possible interventions.

BDS	Critical services	Purpose	Quality of service (P,A,G)	Remark
Govt.				
DIC	License Infrastructure Technology support Financial linkage	Support to establishment of unit and having the various certificate	G	Have presence in the district having a strong human resource base equipped with skills & expertise
Nationalized Banks	Credit	Working capital	A	Lot of documents and collateral creates problems
FFDC	Technical know-how	Imparting Training Testing of quality	G	Sometimes traders are not recognizing the test report
Pvt.				
Raw material suppliers **(Aggregator)**	Flower	Supply of flower to the processing Units	A	Low awareness on quality. Inadequate Working Capital.
Raw material suppliers	Firewood	Supply of firewood to the processing Units	A	Transportation cost is high. It causes deforestation and environmental pollution.
Equipment suppliers	Deg, Chonga	Both are being supplied by Kannauj market	A	Cost of transportation is very high Post sale service

Problems affecting development of BDS market

Demand side problems	Supply side problems	Transactional problems
Entrepreneurs are not financially strong to avail the BDS cost individually.	No scale to operate looking at their business viability	Industry runs with credit
Lack of exposure, knowledge sharing and networking among MSME to explore specialised services	Unorganized sector with highly informal set up having less information	Too much dependency on outside market for selling their finished product
MSME does not see value of BDS service like financial, marketing &technology up gradation.	BDS providers looks at their scalability of operation in financial, marketing &technology up gradation	Non existent of BDS in the cluster where as the outside BDS cost is very high due to transportation/communication
MSMEs are not aware of blending	Highly unorganized sector	

2.3 AOBO and pressure points

The business operates with a simple methodology, explained below.

A) Raw Material

Kewda flower is the main input in the industry. It is procured by the distilleries from the local village aggregators. This flower is normally collected in the monsoon season (July to September) on a large scale and on a small scale during the lean period (December to May). The ratio is 70:30. The other inputs include fire wood which is required for boiling purpose and is procured from the sellers located in Orissa and Andhra Pradesh. Some distilleries use paddy husk as an alternative to fire wood. The base oil which is used in the industry for the preparation of attar is supplied by the trader himself who buys the end product of his choice.

Kewda is highly perishable flower which lose its fragrance and hence value when exposed to sunlight for a long time. But most of the growers and aggregators do not perceive this as a problem and therefore get low value for the product and sometimes faced rejection for the lot.

Firewood is one of the most important raw materials to boil the water and flower mixture. The units are availing firewood from Andhra Pradesh and Orissa. Agents supply firewood @ Rs. 3000/- per MT. Approximately 2 quintals of firewood is required for boiling of 1000 flowers and takes 4-5 hrs to complete the process.

Deforestation, availability of firewood, high transportation cost & pollution are the main obstacles of these sources.

B) Infrastructure

Kewda is processed in a traditional method where very less infrastructure in terms of machineries and equipments is required. One unit can be operated in an area of one acre where 10 to 20 degs can be installed, fitted with bamboo pipes. These pipes are rolled with ropes made of jute. The degs are permanently fixed with traditional chulla, constructed of clay or cement. For cooling purpose, there are constructions of small water tanks of 4 to 6 feet height for each deg. The unit also requires a warehouse to keep the raw materials and finished products.

C) Technology

Processing is totally based on traditional method of distillation. It is adopted since generations. The processors are not aware of the improved technology except the replacement of steel pipes experimented by FFDC which failed due to its less essence quality. They are also unaware about the blending technology which is currently kept secret by their trade partners.

D) Market

The trading of Kewda rooh & attar is completely controlled by a monopolistic market Kannuj (UP). The price is fixed by the traders in which the processors have no role. Processors need to explore the alternative markets within or outside of the country to get good price . This will be done through intensive market surveys & linking the SMEs to high value markets.

E) BMOs

The Kewda Processors Association is now an informal & unorganized network of members. The governance & management of the association is very weak interns of decision making, sharing information & providing services to its members. This affects to the pricing & control of market by the industry as a whole.

F) Finance

A strong banking network is available in the cluster for financial assistance. But the banks are least interested to finance the processing units as the product has high seasonality. Secondly, banks' lending process is not in tune with the demand for credit by the units. Other issues with the banks which are related to MSME are

- Tedious and lengthy process of documentation
- Collateral security
- Time consuming process

The possible solution to this can be change in the banker's mindset with flexible rules & documentation .There should also be a single window operation for availing the finance which is not currently available in the cluster.

G) Human Resource

These are highly labor intensive units which run with few skilled & unskilled labourers & a supervisor. Most of them are illiterate. The supervisors & skilled labourers are coming from Kannauj where as the local labourers are used for supporting works.
None of the processors have undergone any specialized training for management purpose. They lack the technical knowledge but have the entrepreneur attitude. Skill up gradation is required at both workers & processors level.

H) Socio-environmental analysis

This industry is contributing to the growth of local economy by providing direct & indirect employments more than 15000 families for a period of 5-6 months in a year. But there is hardly any step taken to see the minimum facility for these poor workers in their regularity & provision of other benefits like insurance, PF & health facilities .Use of firewood creates smoke in the area which is polluting the environment.

The possible solutions to this can be use of alternatives of firewood like electricity, natural gas or petroleum products. For labourers, the solution can be regularity in their employment by exploring alternative avenues.

The major issues in the industry that were identified in the AOBO analysis are:

- Information constraints related to appropriate processing technology, future market, raw material prices and existing support system
- Lack of awareness on quality, testing facility and certification
- Restricted product range and information on end uses
- Over dependence on single market
- Estimation of proper demand by the industry
- Poor financial linkages
- No MIS
- Lack of proper market information
- Motivation and awareness among the farmers and producers for improvement of their product, process and technology with higher yield of rooh
- Absence of strong forum to carry out joint action
- Dissemination of information

4.0 DERIVATION

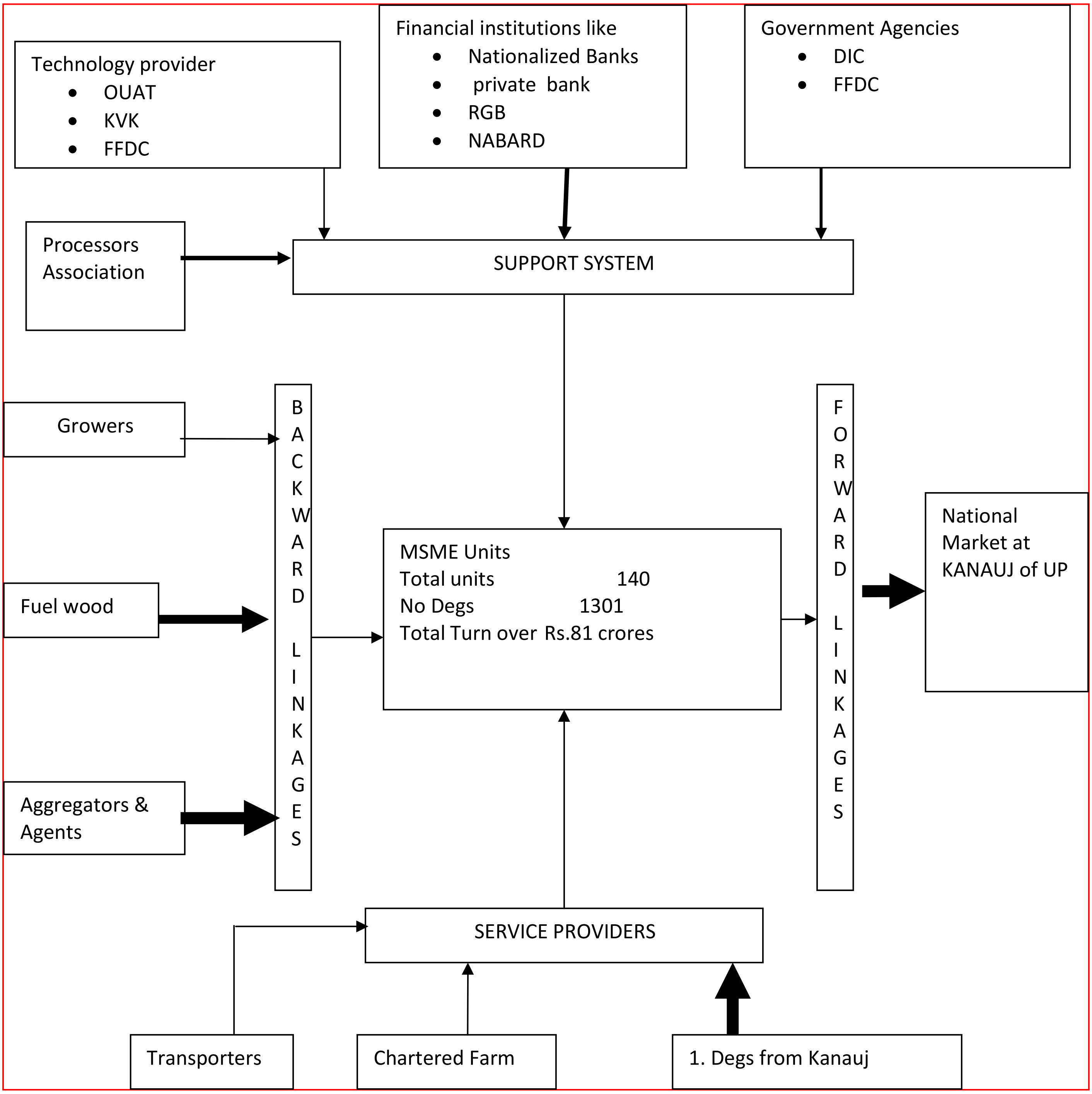
4.1 SWOT Analysis

We did a SWOT analysis of kewda distilleries looking at its marketing, raw material, technology, financial linkages, processing, and management aspects. These are shown below.

Strengths	**Weaknesses**
▪ Potential for Kewda production in terms of quantity and quality. ▪ The best aromatic Kewda flower is available. ▪ 70% of the people of these 4 blocks (Ganjam, Chhatrapur, Rangeilunda, and Chikti) depend upon Kewda. ▪ Grown in a large area of the district ▪ Best quality essence abstracted through Indigenous technology ▪ Low capital investment	▪ Lack of proper awareness among the kewda growers on plucking and handling. ▪ Lack of bargaining by the processors due to unorganized networking ▪ Lack of knowledge of the Processors about the markets and end users ▪ Lack of sufficient working capital and less accessibility to formal source of credit. ▪ Lack of technical knowledge about production and blending ▪ Dependence on a monopolistic market ▪ Short shelf life of flower ▪ Large dependence on firewood which is an unsustainable source of fuel. ▪ Seasonal availability of flower ▪ Lack of proper MIS ▪ Lack of proper accounting system
Opportunities	**Threats**
▪ Presence of FFDC (TSC) ▪ Growing demand for perfumes in the national and international market. ▪ Processor and producer level associations are present in the cluster area ▪ Presence of network of large no of MSMEs in the form of association ▪ Presence of financial institutions in the cluster ▪ Favourable State government policies and initiatives	▪ Inaccessible and difficult connectivity to the villages. ▪ Monopolized market, capture by few traders ▪ Availability of synthetic products ▪ Central government ban on gutka industry

4.2 Cluster Map

Kewda distilleries are located in Ganjam district in a radius of 60 kms, which covers four blocks. The distilleries are installed based on the availability of flowers. The major players in the cluster are farmers or growers and aggregators and traders who are directly centered around the processor. The other important players (support institutions) like DIC, TSC and Banks contribute towards the growth of the cluster. The details of their relationship are shown in the cluster map below.



The arrows shown in the cluster map gives a clear indication of the strong, weak relationship of the farm/institutions with the MSMEs. A thick arrow show there is strong relationship in which the MSME is supported by the farm/institution in day to day basis. The dependency is more & their bondage is very often. .In case of a less thicker arrow it shows the relationship exists which is less in comparison to previous. A weak arrow there exist relations hip which is very causal.

4.3 Vision for the Cluster

Vision of the Kewda Cluster

"Kewda industry is seen as an important market player in the perfume industry which provides quality grade products to national and international markets with a turnover of more than 120 crores by 2011" by creating BDS market for the processing units in the area of market, finance, technology and related areas ".

4.4 Long & short run objectives

The major achievements of the industry have been shown in the following table.

Achievement by 2011	Base	Additional	Total Units
No. of units	140	15	155
Estimate turnover (Rs.Cr) after intervention	80 crores	40	120
Expected employment creation	2850	650	3500

The above table shows the expected result after intervention. By the end of the project, 15 units will be added with an additional business turnover of 40 crores with creation of more employment.

- Trust building and organizing the processors into an association
- Organizing series of workshops and seminars in the cluster
- Arrangement of exposure visits of MSMEs
- Focusing on market and new product innovation (blending)
- Strengthening the processors' association
- Creating a cadre of BDS Facilitators
- Upgrading skills & technical know-how both at growers & processors level
- Leveraging credits for the MSMEs through FIs

4.5 Suggestive Action plan

- Trust building and organizing the processors into an association
- Organizing series of workshops and seminars in the Kewda cluster for Growers, MSMEs and BDSP.
- Arrangement of exposure visits of MSMEs
- Focusing on market and new product innovation (blending)
- Strengthening the processors' association
- Creating a cadre of BDS Facilitators
- Upgrading skills & technical know-how both at growers & processors level
- Leveraging credits for the MSMEs through FIs

Identification of Activity as per Action Plan

	Key Findings	**Suggestions**
Network creation and strengthening	▪ No formal association ▪ One processors' association (unregistered) ▪ One producers' association (unregistered)	▪ Strengthening of association in the case of flowers growers / aggregator level / processer / entrepreneur level ▪ Association can be registered under company act
Capacity Building	▪ Unskilled workers in distillation unit ▪ Some interested entrepreneurs are not able to get trainings for upgrading their skill.	▪ Trained MSMEs for better production ▪ Trainings and exposures on blending/ value addition in kewda oil ▪ Local talented and interested entrepreneurs knowledge can be improved and they can be used in the future as resource persons ▪ Except 4 to 6 months peak season, remaining time can be utilized for technology up gradation, capacity building, strengthening of association etc. ▪ Creation of a SPARC at cluster level
Market	▪ Traders based at Uttar Pradesh ▪ Kanauj is the only market ▪ No agency for export market ▪ No local market/ traders in Orissa ▪ No awareness regarding use of Kewda oil	▪ To find out alternate markets in cities like- Delhi, Mumbai, Jaipur, Tamil Nadu, Alwar, Pushkar and any international market ▪ Providing information regarding economical use of the Kewda Oil to MSMEs

Technology	▪ Traditional Method	▪ Change in technology in processing like fuel, machinery ▪ Better production management
Business Environment	▪ Low working capital, all distillation units are not registered ▪ Entrepreneurs do not focus much on the association's activities.	▪ Linkup with financial institutions, govt. departments ▪ District level resource centres can be promoted to avail technical information

Trust Building

As kewda product is a high value commodity, the processors involved in the activity are more socially recognised and financially well off in the locality. Their support needs to be gained before initiating any changes in the sector. Once they are well informed and understand the reality of the sector, they will be motivated to adopt the changes and also help each other grow. At present, each MSME acts independently without interaction among each other. They need to come closer and understand the problem in a collective manner. To build trust among them, ACCESS has designed the following strategy

- Bringing all the processors of the cluster to a common platform for an informal get together. The kewda processors and the cluster development company will play the lead role.
- Initiating the formation of a cluster coordination committee with membership of different BDS providers
- Ensuring that the CC meeting is conducted at regular intervals. We may start with a quarterly basis meeting.
- Conducting workshops to announce objective and work plan of the project

Cluster Development

Focused Backward Linkage

The entire industry survives with the low quality of raw material available to them. The sourcing of raw material has a long and unorganized channel which is a grey area of the industry. It creates more dependency on the import of kewda. This area needs a lot of attention to streamline the process. The strategy to follow is

- Organise the growers to have their own group which can be federated to apex cooperative. This will ensure the quantity and the quality to the MSMEs. It will also ensure uniform price to all the growers.
- There will be capacity building for the village aggregators to increase their skill in quality maintenance at the field level. There will also be an awareness camp in the cluster for the growers to create a sense of belonging to the industry and also enhance their productivity.

Promotion of MSMEs Institution

An institution will provide an opportunity to the MSMEs to increase their collective bargain. Democratic control makes it stronger. While there does exist one Kewda processors association, it is not registered. However, it does have a dynamic leader called Mr. P. Adinarayan Reddy. He attends the national as well as the state level seminars and workshops. He needs support from the industry people to further increase the participation. It seems a lot of opportunity is there to strengthen the organisation. The strategy to follow is

- The association needs to be registered in Company/ Section 25 Act
- The association should also then be a member of the export body of kewda at the national level instead of individual MSMEs. This will help to improve the quality of the product to meet the international standard. In that way, all the MSMEs can have uniformity in product and price.
- There will be regular association meetings to take up the matter on a regular basis.

Capacity Building

In this phase, we will provide training and development at the processor as well as aggregator level in terms of quality, policy, market etc.

Policy Level Intervention

Most of the industry people do not have knowledge of the national as well as the state policy formulated for the sector. They have little interest to understand it, which is why they have not availed of the benefits from the policy. To make the MSMEs more convergent to the various agencies, we need to follow the following strategy:

- Organise workshops to brain storm the changes to be incorporated in the policy and follow it up
- Explain the policy to each and every MSME related to the industry

Marketing

As we know, kewda essence has no local market and they have to depend on traders from Uttar Pradesh.

- So initially we have to go for a survey of market outside of the state to find out new market avenues.
- Exposure visit to other states
- Maintaining the MIS at association as well as at ACCESS level
- Exploring innovative uses of kewda leaves and plants
- Exploring the alternative use in the industry

Detailed Description of the Work Plan

The work plan for the project can be divided into four parts - the preparatory stage, the capacity building stage, the day to day monitoring and handholding stage and the project phase out stage.

- **The preparatory stage** – This stage, spanning around 6 months, will consist of stakeholder analysis and mapping the various BDS providers and entrepreneurs working in the cluster

- **The capacity building stage** – This stage will be covering around two years and all the training, workshop and exposure etc will be conducted in this stage. Systems will be designed based upon the requirement of the organisations and best practices of the sector. Many training programs on skill management, process modification, quality maintenance leadership, operation management, export management etc will be conducted to make the association operational.

- **Day to day monitoring and hand holding stage** – The systems established in the initial phase of the incubation process will be institutionalised during this stage. Any mismatch between the systems developed and the operation in the field will be sorted out through various need based training and workshops. There will be monthly reporting and quarterly formal review.

- **The phasing out stage** – At this stage, the MSMEs institution will be strong enough to handle the work and liaison activity to make the industry sustainable and more profitable. There will be desired growth at each level.

3.22 Case Study

Case Study of a Kewda Distillery Unit

Mr.H.Raghunath Reddy has installed the kewda distillation unit **M/s Geetanjali Kewda Distillery** at his own village, Keluapalli (GP) which comes under Chhatrapur block. This unit was started by his father in-law 9 years ago, with six degs only, for making attar. At that time, he used to collect flowers from his village at the rate of Rs. 4/-.

Gradually, they increased the capacity of degs from 6 to 10, started making kewda and rooh and sold it to the traders of Kannauj. During the peak season, Kannauj people take that unit on lease for 2 to 3 months. Since last 2 years, Mr.Reddy has increased the capacity of the unit from 10 to 15 and is operating this unit without giving lease to the Kannauj people. He collected the flowers on credit from the aggregator @ Rs.7/-, which became Rs.12/- in peak time. In the first year, he sold his products in the UP market at a good price, but in the second year it became difficult to sell the product, due to the entry of synthetic products as substitute of kewda and rooh. This year they are planning to make attar only but they don't have storing facility.

Annexure 1

<table>
<tr><th colspan="9">Interacted with different stakeholders in each category and location</th></tr>
<tr><th rowspan="2">Name of the Product</th><th rowspan="2">Name of the Location</th><th colspan="7">Category of Respondents</th></tr>
<tr><th>Producers</th><th>Aggregators</th><th>Processors</th><th>Govt. Agencies</th><th>NGOS</th><th>e seale</th><th>Retailers</th></tr>
<tr><td rowspan="4">KEWDA</td><td>Rangeilunda</td><td>112</td><td>4</td><td>12</td><td rowspan="4">DIC, FFDC, Banks, Dpt. of Agriculture Dept. of horticulture, ORMAS, OUAT</td><td rowspan="4">GRAM VIKAS,PEPSI, MAMATA DRINKS,RUCHI,PREM</td><td>2</td><td></td></tr>
<tr><td>Chatrapur</td><td>76</td><td>4</td><td>8</td><td>1</td><td></td></tr>
<tr><td>Chikiti</td><td>28</td><td>3</td><td>2</td><td></td><td></td></tr>
<tr><td>Ganjam</td><td>32</td><td>2</td><td>NIL</td><td></td><td></td></tr>
<tr><td rowspan="7">CASHEW</td><td>Ganjam</td><td>32</td><td>2</td><td>3</td><td rowspan="7">Dept. of Agri.. Dpt. of Horticulture . DIC, DRDA</td><td rowspan="7">CCD, SWWS, JKP, PREM, Gram Vikas, APTICO.</td><td>6</td><td>8</td></tr>
<tr><td>Chatrapur</td><td>84</td><td>4</td><td>8</td><td>6</td><td>12</td></tr>
<tr><td>Rangeilunda</td><td>72</td><td>4</td><td>5</td><td>3</td><td>4</td></tr>
<tr><td>Buguda</td><td>48</td><td>1</td><td>2</td><td>Nil</td><td>NIL</td></tr>
<tr><td>Gumma (Gajapati)</td><td>56</td><td>2</td><td>4</td><td>2</td><td>5</td></tr>
<tr><td>Kashinagar (Gajapati)</td><td>38</td><td>1</td><td>4</td><td>5</td><td>7</td></tr>
<tr><td>Gosani (Gajapati)</td><td>42</td><td>2</td><td>5</td><td>4</td><td>8</td></tr>
</table>

Annexure 2

Producer/Grower's Level Questionnaire

Infrastructure Review of the Village

Rural motorable road till village	
Nearest bus point	
Nearest chhota gadi/ taxi point	
Electrification in village	Yes/ No Domestic/ Agriculture
Total Households in the village	………… households
Land titles [necessity for credit to individual]	………… households
Extent of membership of SHG	………… households
Promoting agency of SHG	
Extent of membership of PACS/ LAMPS	………… households
Extent of membership of Functional Cooperative	………… households
SHG Federation in the area	………… households
No. of BPL [for SGSY linkage]	………… households
Homestead land suitable for plantation	………… households
Fallow land for plantation/ fruit	………… households
Any NGO operating in your area on livelihood – give details of intervention and scale of such intervention	

Major Production [to skim through options and select two for detailed exploration]

Name of fruits/ vegetables grown in your field						
Area of devoted to each						
Number of producers households in village						
Quantity						
Quantum of produce						
Quantum sold						
Shelf life at producer level						
Quantum that can be stored at farmer level within shelf life period						
Techniques, if any to hold produce, enhance shelf life						
Production Cost						
How many person days they consume for the production of the produce?						
Farm labour demand status [use shadow wage for household labour based on local wage rate]						
Cost of seed including seed treatment						
Cost of fertiliser						
Cost of pesticide						
Cost of irrigation						
Rental charges, if any, for tractor/ ploughshare						
Considering above cost, credit availed for production or storage						

Producer Association						
Any producer association for particular fruit/vegetable						

Details of any two products with prospect

Name of short listed product		
Brief History - when was activity introduced – timeline and history, stages of the intervention		
What is average village wise landholding size and what proportion is devoted to profiled crop/ fruit	…………….. hectare from total arable …………. hectare	…………….. hectare from total arable …………. hectare
No. of large producers in the village and adjoining areas		
Size of small producers [trees/ land area term]		
No. of medium producers in the village and adjoining areas		
Size of small producers [trees/ land area term]		
No. of small producers in the village and adjoining areas		
Size of small producers [trees/ land area term]		
Assessment of quantity tonnage from village		
Assessment of quantity from adjoining villages		
Can productivity increase from		

existing area		
Can production area increase and how		
Extent of crop loss at producer level		
Utility of the crop/ fruit – what is done with different parts of it		
Trend in production (area) – increasing quantity/ quality or declining		
Trend in production (production per unit area) – increasing quantity/ quality or declining		
Trend in demand position		
Share your insights on reason for above trend		
Key strengths of activity – why activity is still pursued [detail at end if required]	1. 2. 3. 4.	
What opportunities are there [detail at end if required]	1. 2.	1. 2.
Other producers are joining or exiting	Joining / exiting	Joining / exiting
Ruling constraints for this activity [detail at end if required]	1. 2. 3. 4.	1. 2. 3. 4.

Additional constraints – major diseases affecting plantation/crop		
Other sources of losses not covered above		
Will next generation pursue this		
If no, what is competing alternate work		
Entry barriers at different point		
Land quality		
Irrigation		
Minimum Capital Requirement		
Quality norm if any		
Other limits to expanding activities	1. 2	1. 2
Quality parameters of particular crop/ fruit	1. 2. 3.	1. 2. 3.
What Post Harvest processing Grading/ Sorting Storage, Drying, Packaging, is already being done at **producer**		
What Post Harvest processing Grading/ Sorting Storage,		

Drying, Packaging, is already being done at **small aggregator level**		
Name centres of processing [towns/ villages]		
Name some processors located there		
What processing do they do		

Sales and marketing [Mapping marketing chain and margins]		
Where produce is sold [haat, market] – create a note on marketing channel		
Method of transport they use to sell their products		
Cost of transport used to sell their products		
Unofficial fees, if any, payable at haat, at naka, at police chauki during transport		

What is criteria for setting sale/ purchase prices		
Price fluctuation, if any across area/ across season		
Average margin in Rupees available on per quintal of produce sold		
If very low/ no demand in market what did they do in that situation(s)		
Producer Association		
If existing, legal form of producer association		
What services does it provide		
Reach of membership [villages]		
No. of individual members		
Existing Service Providers		
Credit		
Market		
Soil testing		
Soil Amendment		
Bio-fertilisers		
Insurance		

Others		
Extension services received from local KVK, Govt Dept., Govt. Research Institution etc.		
Assessment of Service received		
Any difficulty in getting credit? If so what is the reason		
Difficult in receiving any service		
Do they ever face harassment from any corner? If so what are those		
Opinion on Quality Issues [if relevant, then query]		
How low quality of the product affect sale		
Lack of appropriate technologies and methods to improve quality		
Lack of institutional mechanisms to improve quality		
Ineffectiveness of quality control by government agencies		
Support Desired		
Technical capacity building required? Please specify n details	1. 2. 3.	1. 2. 3.
Capacity building for enhancing their capabilities as entrepreneurs?		

What types of legal constraint felt in growing, transporting and marketing of their produce		
Marketing support required - do the ever face any difficulty in selling their produce?		

Please document any additional information on above or associated points

Note

1. SC/ST break to be seen from census list for villages where FGD/ Household interview is conducted and incorporate % where require
2. Proportion of BPL household to total household can be seen from household survey list, if required, but considering the tedium asking village
3. Only such infrastructure is profiled which is critical to the activity – the list is not a general inventory of infrastructure/ facilities
4. Government institutions like PRI etc are bound to have reach in the village and not profiled
5. Finally activity prototypes of selected products may need to be developed – indicating unit size, investment required etc

<u>Annexure 3</u>

Enterprise level information from the Entrepreneurs/Processors-their Profile

(if no processing occurs please use relevant section for aggregation/processing etc)

1. Respondent(s) Name

2. **Village   Block   District**

Motorable road till village	
Nearest bus point	
Nearest chhota gadi/ taxi point	
Electrification in village	
Total households in the village	……….households
Land titles [necessity for credit to individuals]	……….households
Extent of membership of SHG	……….households
Promoting agency of SHG	
Extent of membership of PACS/ LAMPS	……….households
Extent of membership of Functional Cooperative	……….households
SHG Federation in the area	
No. of BPL [for SGSY linkage] in processor/ production group	……….households
Homestead land suitable for plantation	……….households
Fallow land for plantation/fruit	……….households
Any NGO operating in your area on livelihood – give details of intervention and scale of such intervention	

Area level issues

3. What is being processed?

4. Nature of processing intervention [sorting/ juice/ aggregating and sale etc.]

5. What parts of the plant/ fruit is mainly processed?

6. Processing plant details

	This village			Name of other adjoining villages		
How many processors/entrepreneur are located in the vicinity?						
Installed capacity	……..... unit/ day	……..... unit/ day	……..... unit/ day	….. ….. unit/ day	……..... unit/ day	……..... unit/ day
Number of units of each installed capacity						
Average number of days units are operational each year						
Number of hours per day it is operational						
Extent of usage per day (all degs/ all machines or what proportion)						
Any processor association [formal or informal] in existance						
Source of raw material						
	This village			Name of other adjoining villages		
Number of producers of raw material in vicinity/ adjoining villages/ in this cluster						

7. Described the methodology of processing [right from plucking of fruit/ flower]
…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

8. What is detailed step wise cost (cash out go basis) of processing?

Raw Material	
Fuel	
Hired manpower	
Chemical/ other additives	
Loss [breakage/ waste] describe it	
Water / Electricity, other establishment cost	
Packaging cost	

9. Packaging (where applicable)

Type of packaging [describe material]	
Packet size for retail sale	
Bulk pack size	

10. Detailed terms of hiring of manpower

Monthly/ daily payment	
Food – number of meals	
Stay arrangement if provided	
When unit closed, what do workers do	

11. Is this the only method of processing – which other methods are used for processing
………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

12. If any pre-processing waste generated, give details of quantum of such waste and its utility?
………………………………………………………………………………………………

………………………………………………………………………………………………

13. If any post-processing waste generated, give details?
………………………………………………………………………………………………

………………………………………………………………………………………………

14. What is done with post-processing waste?
………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

15. Income

- Daily Margin per processing cycle during peak yield period
- Per week/ month margin during peak yield processing period
- Margin of income per processing cycle during peak yield period
- Margin of income per week/ month during peak yield processing period

16. Capacity utilization maximization details

a) Is any alternate processing done on same machines, if yes, what
………………………………………………………………………………………………

………………………………………………………………………………………………

b) If yes, how many units take up such alternate activity
………………………………………………………………………………………………

…………………………………………………………………………………………

c) Additional cost per processing cycle
…………………………………………………………………………………………

…………………………………………………………………………………………

d) Additional margin per processing cycle
…………………………………………………………………………………………

…………………………………………………………………………………………

e) additional margin of income per week/ month during processing period when item is not processed
…………………………………………………………………………………………

…………………………………………………………………………………………

f) If yes, when
…………………………………………………………………………………………

…………………………………………………………………………………………

g) If yes, for how many days
…………………………………………………………………………………………

…………………………………………………………………………………………

17. Is any other plant part, not used in main processing, also processed in this vicinity?

- If yes, details of such parts and extent of processing

<u>Description of visited Unit</u>

1. Full name of respondent of this section	
2. When was your unit established?	
3. Registration details/ permits obtained (if applicable)	
4. Processing capacity at your unit?	
5. Number of days operational in the last financial years	
6. What is quantum of raw material used per day during peak processing period	
7. What is quantum of raw material used per day during off- peak processing period	

8. Arrangement for supply of raw material	
a) Periodicity of supply	
b) Who supplies (direct producer or an aggregator)	
c) Quantity procured in each lot size	
d) Terms of payment for each lot size so procured	

9. Mode of financing of unit inheritance/ loan/ own fund/ combination of loan and own fund. Please describe terms of loans
10. Quantum of working capital required for enterprise of this scale

……………………………………………………………………………………………

…………………………………………………………………………………………

11. If loan – details

Year	**Total Invested Amount**	**Amount of loan in total investment**	**Source of loan**	**Terms of loan**	**Unpaid balance on loan**	**Interest rate paid**	**Quantum of subsidy, if received**	**Remarks**

12. Is further investment warranted – details and source of such investment planned, for what

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……………………………………………………………………………………………

13. If processing unit is inherited, then present cost of setting up unit of comparable capacity

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14. Present constraints of activity
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15. Do you use your plant through out the year or lease it out
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16. If leasing out, why is it leases and terms of such lease
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17. Extent of loss during processing [breakage/ processing loss due to hot season etc.]
…………………………………………………………………………………………

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18. Sale related
   a) What is the arrangement for sale of the produce
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…………………………………………………………………………………………

…………………………………………………………………………………………

b) Is it sold at processing plant or at some common market place
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c) How is price is set
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d) Where do the buyer intermediaries come from
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e) Opinion on Quality Issues [if relevant, then query] affecting market
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19. competitive market advantage of this product that keeps it going
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20. What is your perception on its demand trends
…………………………………………………………………………………………

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21. History of activity in the area
…………………………………………………………………………………………………

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22. Would you encourage your son to continue with this processing/ business
…………………………………………………………………………………………………

Annexure 4

Diagnostic Study for Processing of Fruits and Vegetables - Preparatory Guide Note

Identifying and Defining Appropriate Products for Further Study				
Where	**Location**	**What**	**Why**	**Who from the Access Team**
Block Office	District Head Quarters town	▪ District maps indicating villages and accompanied by village list	▪ Photocopy and if manually colouring then expands it so that can be used for mapping villages where particular fruit and vegetable is grown. Indicate villages with any processing unit or a procurement market by a special sign and identify details in legend	▪
Confederation of Indian Industries chapter	Behrampur/ Ganjam Gajapati	▪ Which registered food processing [jam jelly chips, chutney, juice/ squash] units exist in their area ▪ Collect their names and contact details	▪ Locating local food processors ▪ Understanding size of larger processors	
Visit District/ town area Industrial area Development Authority in	Behrampur/ Ganjam/ Gajapati	▪ Which registered food processing units exist in their area ▪ Collect their names and contact details	▪ Locating local food processors ▪ Understanding size of larger processors	
DIC	Ganjam Berhampur / Gajapati Parlakhemundi	▪ Cashew processing units ▪ Any other food processing units ▪ Any prototypes developed for food processing units	▪ Locating local processors ▪ Understanding size of larger processors	

Fruity/ Slice/ Maaza bottling plants	Bhubaneswar Behrampur	▪ What variety of mango pulp is preferred for pulp	▪ Which variety has potential	
Testing laboratory of Flowers and Fragrance Development Corporation of India HQ Kannauj in UP	Behrampur Lab	They tell or say who can tell following: ▪ Cost of different sizes of essential oil extraction plants and capacity ▪ Can same plant be used for extracting essence from *kewda*, rose and lemon grass ▪ If different attachments etc required for all three then which ones, their cost ▪ Do such plants already exist in the area ▪ If *kewda* is processed by traditional means, as done in villages what is the extent of loss of essential oil [is shifting to high cost method of extraction over traditional methods recommended]	▪ To ensure optimal utilisation of plant year round – so as to use knowledge for persuading entrepreneurs to take it up as activity	
OUAT unit working on cashew apple	Bhubaneswar	▪ What is stage of progress in separating tannin from juice so as to improve shelf life of juice ▪ *Feni* made (in Goa) and how is problem of tannin handled in *Feni* making and can it be made here. Can its smell be removed	▪ Will help Access rule out Cashew Apple	
Agriculture Department	Ganjam, Gajapati	▪ Which area of district (some sample village names) which mango variety is grown/ This district is known particularly for which mango ▪ Which mango is more amenable to processing ▪ Names of villages in that clusters		

		▪ How many producers of different sizes [big, medium, small and their size definitions]		
District Agriculture Department	Ganjam, Gajapati	▪ Which vegetables is district famous for ▪ Which villages known for ginger ▪ Which villages known for tomato ▪ Current output estimates there ▪ How many producers of different sizes [big, medium, small and their size definitions]	▪ Broad understanding of location ▪ Understanding concept of 'sizes' prior to sampling respondents	
Block Office	Raygada block of Gajapati District	▪ Which villages Orange [Mandarin Hill Orange] – growing since 25 years – Chandragiri / Ramgiri Area ▪ How many producers of different sizes [big [hectare + trees], medium, small and their size definitions] ▪ Current output estimates there	▪ To see geographical overlap and proximity to other products	
District Horticulture Department	Gajapati District	▪ Which villages Orange [Mandarin Hill Orange] –Chandragiri Area ▪ How many producers of different sizes [big, medium, small and their size definitions]	▪ Plot in map ▪ Understand relative number of producers ▪ Average production size	
District Horticulture Department	Ganjam District	▪ Which villages in Aska area known for banana – dwarf Cavendish ▪ Which villages in Aska area known for vegetable banana ▪ Any area in Gajapati district as well	▪ Plot in map [or list out village wise as per block map so it can be digitised] ▪ Understand relative number of producers ▪ Average production size	
District Horticulture	Ganjam, Gajapati	▪ Which fruits is district famous for – to whittle potential list to further suitable	▪ Plot in map [or list out village wise as per block	

Department		for exploration ▪ Which areas are particularly known for *amsi* – raw mango flakes ▪ Same for pineapple ▪ Same for jackfruit ▪ How many producers of different sizes [big, medium, small and their size definitions]	map so it can be digitised] ▪ Understand relative number of producers ▪ Average production size	
District Forest Department		▪ Which areas are particularly known for *amsi* – raw mango flakes ▪ Which areas are particularly known for Jackfruit ▪ Villages in that area	▪ Plot in map [or list out village wise as per block map so it can be digitised] ▪ Understand relative number of producers ▪ Average production size	
NHRM KVK	Ganjam, Gajapati	▪ Which village which fruit pocket has been developed and has already begun optimal fruiting [plantation done at least three years back] – especially ask for orange, pineapple	▪ Plot in map [or list out village wise as per block map so it can be digitised] ▪ Understand relative number of producers ▪ Average production size	
Mapping Potential Cluster Prior to Selection				
GIS Professional/ Firms	Bhubaneswar Or Raygada	▪ Create a digitised village and block wise map of Ganjam and Gajapati showing villages and road/ rivers [verify cost before getting this done] ▪ Link it with census data base ▪ Provide all maps with villages [or provide list of villages under various fruit/ crop] marked to scan and create different overlays of villages for different activities and location of	▪ Help in identifying agri-horticultural products that can be promoted in a proximate area ensuring overlap in cost of travelling/ monitoring of Access during implementation phase ▪ See extent of overlap between desired set of	

		processing plants, He will link village data on	crop/ fruit village ▪ Will enable computation of distance etc.	
Summarising Understanding Size of Growers distilled during above interaction				
Mapping Producers	Ganjam, Gajapati	▪ Number of small, medium and large growers	▪ Later on sample basis will need to know key enabling and constraining factors ▪ Who will you work with in later stage	
From Producers	Ganjam, Gajapati or even state level	▪ Any Growers Association		
Cooperative Department	Ganjam, Gajapati or even state level	▪ Any relevant cooperative of growers		
Mapping of existing BDS providers				
Soil testing and Amendment services	Ganjam, Gajapati	▪ Cost of soil testing to know suitability for crop	▪ Who will go and test suitability of soil for particular crop	
Functional NABARD's Agricultural Help Line (does it support horticulture also?)	Ganjam, Gajapati Agriculture Department	▪ Contact details of helpline	▪	
Transporters Associations	Ganjam, Gajapati	▪ Location of offices ▪ Routes that they serve ▪ Freight terms ▪ Costs involved and packaging requirement ▪ What goods from our list are already being exported/ imported	▪ To understand constraints like lot size, packaging requirement, cost ▪ What is being exported	

Weigh Bridge [where loaded trucks are weighed]	Ganjam, Gajapati	▪ They certify weight of trucks leaving this area or schedule to deliver commodities in this area ▪ They may be able to give idea about kind of commodities moving out of the district	▪ What is being exported	
Bus Associations	Ganjam, Gajapati	▪ Location of offices ▪ Routes that they serve ▪ Freight terms ▪ Costs involved and packaging requirement ▪ What goods from our list are already being exported/ imported	▪ What is being moved in smaller lots than on trucks	
Railways Parcel Office	Ganjam [Behrampur], Gajapati [Palasa station]	▪ Location of railway station where goods taken ▪ Distance of such points from production clusters ▪ Freight terms ▪ Costs involved and packaging requirement ▪ What goods from our list are already being exported/ imported	▪ To understand constraints like lot size, packaging requirement, cost ▪ What is being exported	
NABARD's functional Agri-clinics	NABARD Ganjam, Gajapati	▪ Advice on suitable agricultural inputs like fertiliser	▪ Do such entrepreneurs exist	
?? Marketing Info		▪ Sources of market information ▪ Aggregating Haat/ Yards	▪ Listing sources of market information	

Training institution for growing fruits	Ganjam, Gajapati, nearby district, Bhubaneswar	▪ Who will train new entrants and equip with technical know how ▪ Qualified horticulturists who can fire fight issues at producer end	▪	
Training institution for vegetable growing	Ganjam, Gajapati, nearby district Bhubaneswar	▪ Who will train new entrants and equip with technical know how for particular crop like ginger especially for typical disease ▪ Qualified olericulturist/ horticulturists who can fire fight issues at producer end	▪	
Training institution for fruit and vegetable **processing** at industrial scale		▪ Govt. Department ▪ Private/ NGO	▪ Not just home based production but at a larger scale [techniques of preservation plus enterprise aspect understanding]	
		▪ Entrepreneurship training ▪ Entrepreneur building/ handholding	▪	
Project Report Writers		▪ Where are such service providers located in near by towns or adjoining states	▪ Who can develop project proposal prototypes and also a query form so that applicant only has to respond to specific queries and not write extensive report	
Financial institutions and their credit terms		▪ Minority finance development corporation if there is Christian/ Muslim in the area ▪ Bank finance [Andhra Bank or other pro-enterprise attitude] ▪ Backward Commission??? ▪ ITDP [Gajapati]	▪	

		▪ DRDA - SGSY		
APICOL (purely dedicated for Agro industries in Orissa-)	Please check if they have any office at Berhampur	▪	▪	
UNDP-PPCP Project	Bhubaneswar office [project has wound up]	▪ Which village they intervened and in what product eg if works on kewda – which villages ▪ Ask for final status report of the project with village wise status of activities	▪	
APITCO's RIP programme supported by SIDBI		▪	▪	
Major **wholesale** weekly markets	Berhampur	▪ there happens to be famous Mango seasonal market there ▪ for other produce	▪	
Cold storage in an around district	Ganjam, Gajapati or nearest location	▪ Nearest cold storages [for perishable] ▪ Terms [lot size, rental, which items are stored] ▪ Installed capacity ▪ Capacity utilisation from register of users	▪ Perishable items need proper storage for increasing shelf life	
Agricultural warehouse location??	Ganjam, Gajapati or nearest location	▪ Terms [lot size, rental, which items are stored] ▪ Installed capacity ▪ Capacity utilisation from register of users	▪ Useful for non-perishable items like cashewnut??	
Large Input [seed, input] Dealers	Ganjam, Gajapati	▪ Input providers under them and where are they located ▪ Provide information on large farmers for	▪ Mapping input providers	

		specific products		
SHG Federations/ Functional Saving and Credit Cooperative	Location and reach of operational villages	▪ as a mechanism to support micro-financing ▪ As subsequent partners to route credit/ capital from banks/ MFIs	▪	
Mapping NGOs with strong livelihood that too horticulture/ floriculture based work	Gramvikas, Lipika	▪ Mapping [location, abilities] NGOs with operations in the area with work in horticulture/ floriculture ▪ Mapping relevant work in fruit and vegetable	▪	
Big Bazaar, Reliance Fresh, Trinethra	Big retail chains like at Vizag	▪ Do it once product list narrowed down, see how much they procure locally of that produce	▪	
Quality Certifiers	Bhubaneswar, Kolkata, Delhi	▪ Importing countries require ISO 9000, 14000 or HCCP ▪ Who will certify, if required, vegetable and fruit production	▪ If export market has ever to be targeted	
Organic Produce Certifiers	Kolkata, Delhi	▪ Organic produce standards	▪ If organically produced items have to be marketed certification of system may be required	
Developing schematic value chain [pre-stage to value chain mapping]				
Learning to draw **one** value chain without		▪ From input procurement, to planting, harvesting, storage, movement from farm gate to aggregation point, to	▪ Know the sequence ▪ Know the gender dimension	

missing a link		processing and onward sale ▪ You may need to refer and add cost of pesticide, fertiliser at appropriate point	Later stage of study we will use schema to add: Later who are the key actors, How does value change Main marketing channels from farm-gate to final consumers Analysis of demand & supply, price formation, trading margins, costs, transport, storage and processing capacity, market efficiency Future production and market prospects	
Secondary Data Summary for incorporation in report as part of area scan				
Collecting secondary data and keeping it ready in usable form in word table		▪ Summary profile of the two districts and something about South Orissa ▪ Summary of relevant information in soft form from [with full reference of document ie name of doc, department, year and including table number and page number from where line is being picket] 1. NABARD PLC 2. District Report 3. State Agriculture / Horticulture report if available from state	▪ Contextualising Floriculture? Institute in South for processing	

		government and Bhubaneswar 4. India level information for last five years or so – from Hindu Annual report on Agriculture, NHRM status report if any etc.		

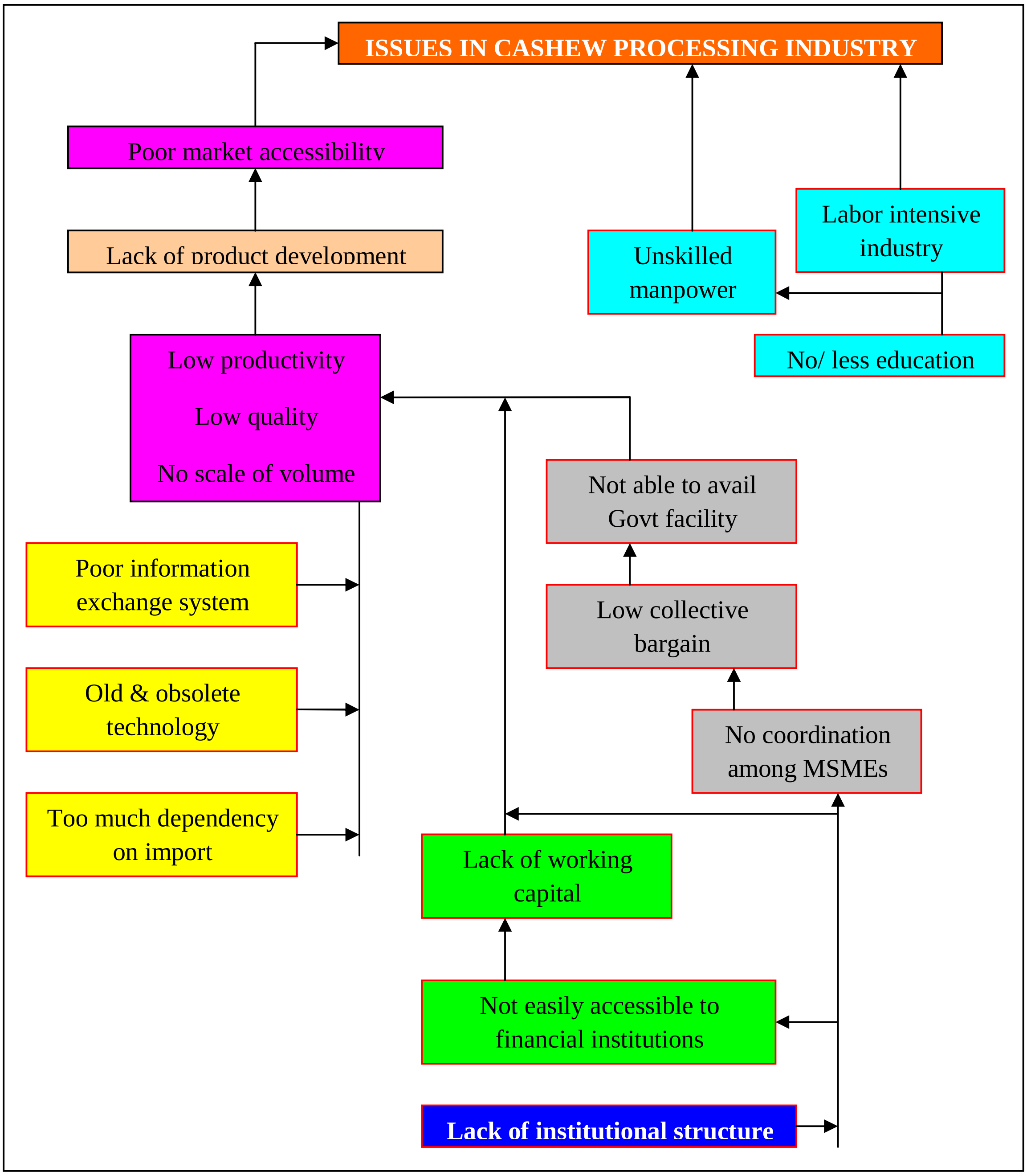
Immediate next steps:

- Development of tools [interacting with other actors, interacting with producers]
- Sharing of tools and their finalisation by team
- Methodology and process-oriented workshop for the team at launch of study
- Decide in workshop how many village level Focus Group Discussions, Case Studies, Value Chains, Key Informants interviews to be done

Diagnostic study will begin after above is done and will focus on:

- Products facing sales constraint along with Proportion of produce facing such sales constraints
- Products facing supply constraint along with proportion of produce facing such supply constraints
- Products with certain inherent strengths in the area
- What constraints are faced and what support and services is required by subsistence-oriented actors, intermediary aggregator, Collector - Traditional processors, Industrial processors, Large traders, Trade Associations, Exporters

Annexure-5


ISSUES IN CASHEW PROCESSING INDUSTRY
Poor market accessibility
Lack of product development
Low productivity
Low quality
No scale of volume
Unskilled manpower
Labor intensive industry
No/ less education
Not able to avail Govt facility
Low collective bargain
No coordination among MSMEs
Poor information exchange system
Old & obsolete technology
Too much dependency on import
Lack of working capital
Not easily accessible to financial institutions
Lack of institutional structure

Annexure 6

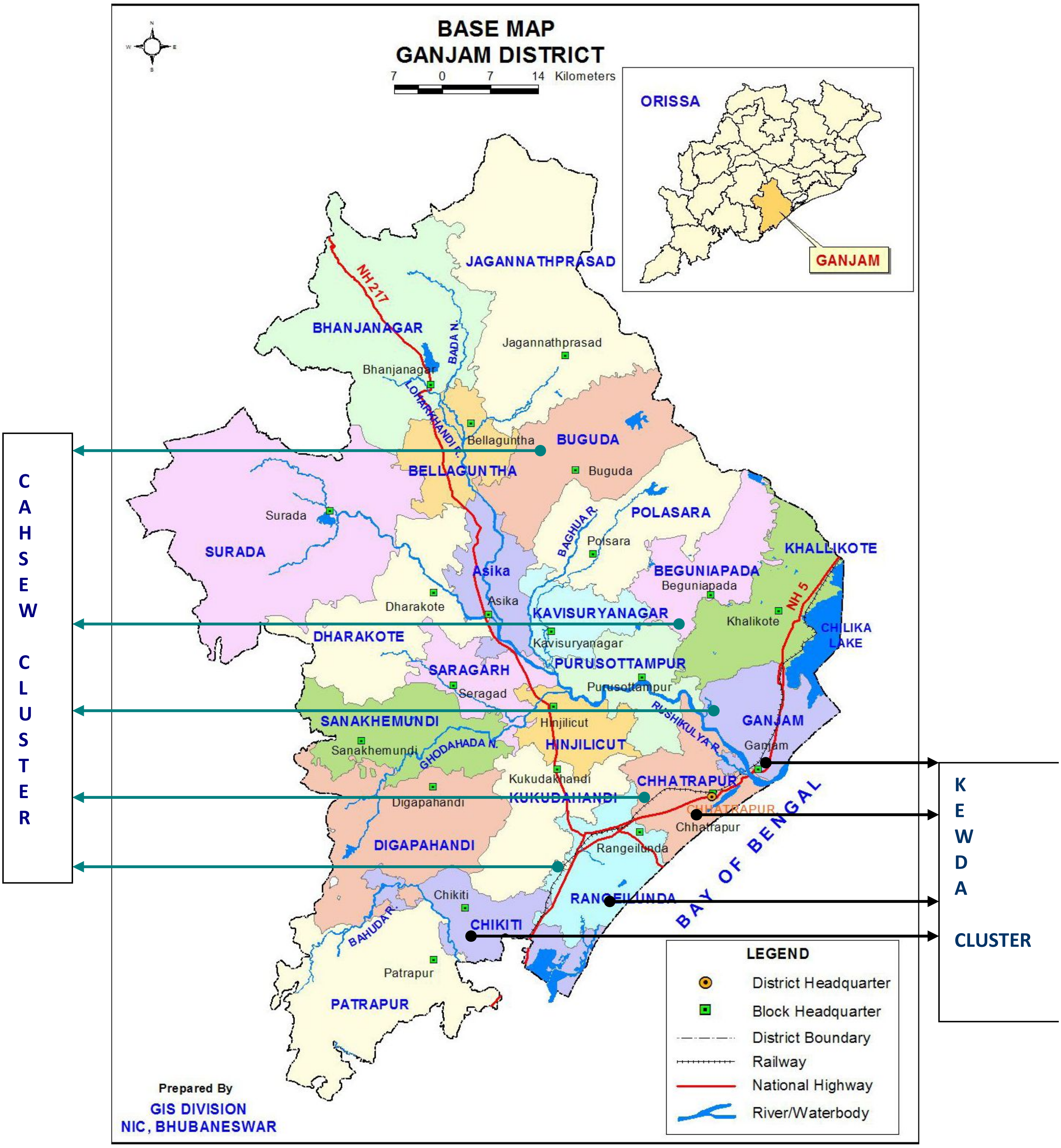
List of Reference materials used for the Diagnostic study

Sl No	Description of the material	Source	Reference chapters	Location /area
1	Agenda notes on agril.strategy committee meeting for KHARIF--2009	Department .of Agril.(Government of Orissa)	Highlights of achievements of Rabi 2008-09	Gajapati district
2	Agenda notes on agriculture strategy committee meeting for KHARIF--2009	Deptt.of Agril.(Government of Orissa)	Highlights of achievements of Rabi 2008-10	Ganjam District
3	Orissa Agricultural statistics, 2006-07	Directorate of Agril.and Food Production. Orissa	District wise area, yield and production of different crops for 2006-07	Orissa
4	Project report under integrated handloom development scheme	Asst.Director of Textiles, Berhampur , Orissa.	Diagnostic study report, Action Plan etc.	ASKA, Ganjam, Orissa
5	Rural Processing, Post harvesting technology of agriculture.	OUAT, BBSR ORISSA	Processing of Value added products of Cashew, custard apple and pineapple	Orissa
6	District Statistical Hand Book	Directorate of Economics and statistics, Orissa, BBSR	Social, economic, population, agriculture, forest, animal husbandry etc	Ganjam District
7	Potential linked credit plan 2009-10	NABARD, Regional office, BBSR, Orissa	Credit details	Gajapati district
8	Potential linked credit plan 2007-08	NABARD, Regional office, BBSR, Orissa	Credit details	Ganjam District
9	Annual Report 2007-08	Gajapati Women Self Help cooperative ltd	Key achievements of cooperative	Gajapati district
10	Workshop Report 2001	PREM-PLAN	Indigenous people in the next generation	Visakhapatnam, AP

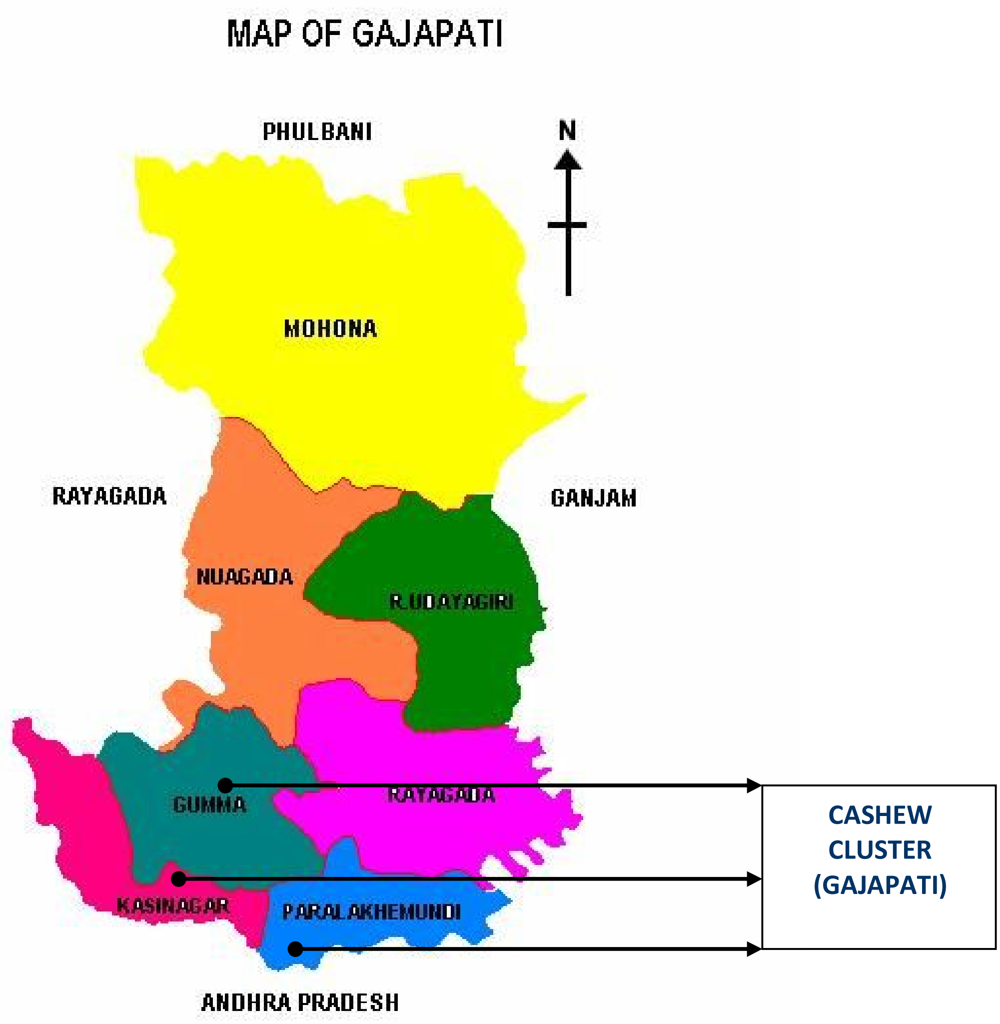
11	Annual report -2006-07	Gram Vikas	Highlights of the year 06-07	Berhampur
12	Annual Report -2007-08	Gram Vikas	Highlights of the year 07-08	Berhampur
13	Annual Report 2006-07	SWWS, Gajapati,	Achievements of SWWS(NGO) Parlakhemundi	Parlakhemundi, Gajapati
14	Detailed Potential Survey Report -09	SIDBI	Potential report on SME'S in district	Murshidabad
15	Study for implementation of rural industries Program	SIDBI	Potential report on Promotion of micro enterprises in Ganjam district	Ganjam District
16	Fruit and vegetable cultivation and processing	SIDBI	Cultivation and storage of fruit and vegetables	General
17	Risk Capital and MSMEs in India	SIDBI	Risk capital and supplementing mechanism	General
18	News Bulletin (OCT-DEC-08)	Cluster Craft	Update on fruit and vegetable processing cluster,	Pune
19	Expanding the frontiers of micro finance in India	SIDBI	Micro finance movement, outreach etc…..	General
20	Cashew nut processing machinery	Rotex Industries	Different machinery for installation of cashew industry	Maharastra (India)
21	Report of the Workshop organized by National resource centre for rural livelihoods	Pradan, New Delhi	Producer Companies linking small producers to markets	New Delhi
22	Project Inception report	IDE(INDIA)	Achievements reviewing, monitoring plan by IDE, CCD AND OUAT.	Gajapati district
23	Potential opportunities for Promotion of Micro enterprises in Ganjam District	APTICO Limited	Profile of Ganjam	Berhampur

24	Diagnostic Study Report on Petha cluster , Agra(2001)	UNIDO	Reporting structure	New Delhi
25	Report on Kewda	TSC, Berhampur	General informations	Berhampur
26	Analysis of Economic Characteristics of value Chain of three underutilized fruits of India	ICUC, Head Quarters, Colombo	Value Chain Analysis of Products	Internet
27	Business Management for Small Scale Industries	FAO, Rome	Training Requirement	Interment
28	National Informatics centre	Govt of India website	Cluster Map	Internet
29	End Market Research toolkit- Upgrading competitiveness with informed choices Novenmebr2008	USAID	Value Chain Analysis of Products	Internet
30	IPR, 2007	Govt of Orissa	Industrial policy	DIC , Ganjam

Annexure 8



Cluster Map- Ganjam


MAP OF GAJAPATI
PHULBANI
N
MOHONA
RAYAGADA
GANJAM
NUAGADA
R.UDAYAGIRI
GUMMA
RAYAGADA
KASINAGAR
PARALAKHEMUNDI
ANDHRA PRADESH
CASHEW CLUSTER (GAJAPATI)