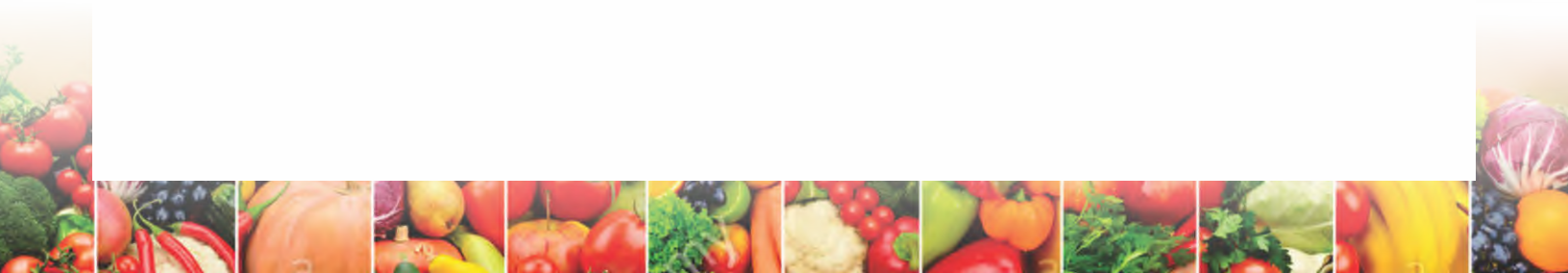
Agricultural Value Chain in Tribal Area

VAAGDHARA

Agricultural Value Chain in Peepalkhunt & Ghatol Cluster



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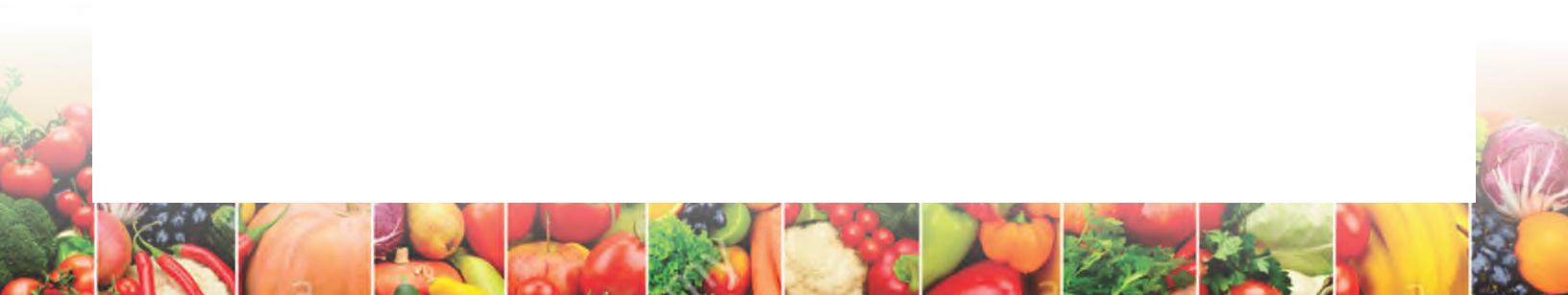


Preface

Tribal farming mostly considered as subsistence farming, which mainly focuses on fulfilling the food requirements of family members. Their agriculture is not known to contribute to the economy and more so to Indian agriculture. VAAGDHARA has traditionally believed that farming practices in remote tribal regions do have their value-chain, though may not be considerable and visible within the present indicators of agriculture economy.

This booklet of ours is an effort to understand the value-chain of agriculture produces of small and marginal farmers in the tribal-dominated district of Banswara in South Rajasthan, India. We have tried to capture some of the conventional products of this area, which may not be known to the wider world but have an important role in the economy of the small and marginal farmers. The booklet looks beyond the economic aspects only; instead, it shares the critical role local value chains play in their life from health, environmental and psychosocial aspects, which are vital to sustainable development.

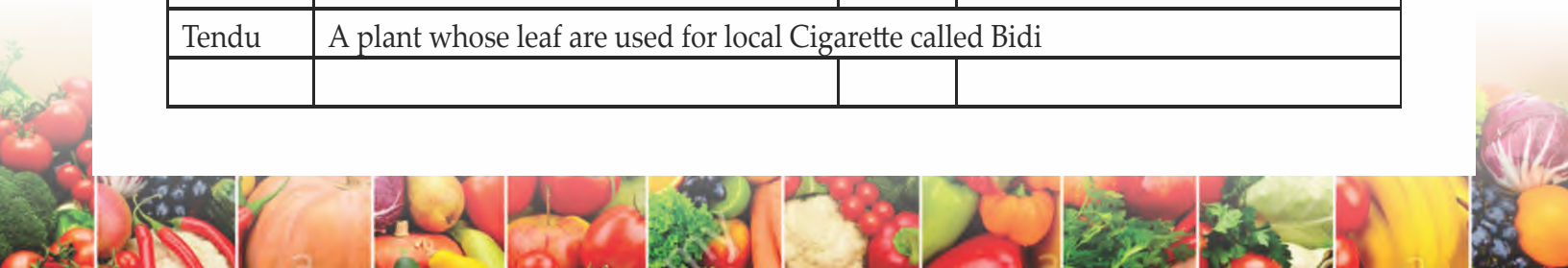
I hope this booklet will help to trigger thought processes within young generation farmers and other youth and establish the importance of primary productions like farming and other local products. We are very much thankful to KKS, Germany, for their support for this study and bringing out this publication.

Thanks!

Jayesh Joshi
Secretary, VAAGDHARA

ABBREVIATIONS & ACRONYMS

Abbreviations			
Ag VC	Agriculture Value Chain	BHN	Bhain
BKK	Bheema ka khera	BPL	Below Poverty Line
BRI	Bori	Coll	Collection
DAP	Di-ammonium Phosphate	DNT	Danta
DRN	Dharana	Fm	Family
FGD	Focus Group Discussion	GDP	Gross Domestic Production
GDR	Gadra	GP	Gram-Panchayat
GRT	Goj Rathore	HDI	Human Development Index
Hh	Household	ILO	International Labour Organization
Kg	Kilogram	KKS	Karl Kuben Stiff Tung
KKN	Kikakinaal	MAM	Moderate Acute Malnutrition
MDK	Mahudikhera	MTI	Matiya
MYS	Miyasa	NLD	Nalda
NTFP	Non-Timber Forest Produce	PS	Panchayat Samiti
PTD	PhutiyaDoongari	Prod.	Production
Qtls	Quintals	S&M	Small and Marginal
SAM	Severe Acute Malnutrition	SIFS	Sustainable Integrated Farming System
TCL	Thechla	SFE	Smart Farmer's Enterprise
UND	Undvela	VCC	Value Chain Cell
VAAGDHARA: Voluntary Association of Agricultural General Development Health and Reconstruction Alliance.			
VCA	Value Chain Approach		
Acronyms			
Haat	Local level moving market		
Kunjda	Contractor who deals in fruit purchase and sale		
Dalal	Middleman		
Mahajan	Trader	Kadela	
Tokari	A basket made of Bamboo	Matka	
Timru	Local Fruit		
Tendu	A plant whose leaf are used for local Cigarette called Bidi		



1 Executive Summary

Agri Value Chain means **Capturing the value created along the Agriculture chain from pre sowing to** Crop **harvest or in other words capturing value created from "Farm to Fork".**This report is the outcome of the study on value chain analysis of agriculture and allied production by the small and marginal producers. The exercise was

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part of the VAAGDHARA Project "Sustainable improvement of food security of indigenous people living in 15 villages of southern Rajasthan, India", support by KKS, Germany. The study was conductead in the fifteen villages of Pratapgarh and Banswara districts in Rajasthan.The main objective of the report is to document value chain of the various agriculture produces available in the studied area and understand participation level of farmers in the value chain of different products and identify the constraints at different levels in the value chain. The purpose is also to analyze the existing marketing channels and potential marketing problems. The report also aims to address the gaps and opportunities for the value chain development in the agriculture and allied sector.

The study followed both qualitative and quantitative methods of data collection. The team undertook the data collection, conducted extensive interviews and held group meetings with stakeholders (producers and traders) using the survey schedule an interview guide. The focus was made to acquire information about the producer's socio-economic profile, activities they are engaged in, fruits they produce, etc., and understand their perspective on the value chain analysis of the fruits they produce or av5ailable in their area. Data collection also covered the information about the traders and market to develop understanding about the existing situation or status of the fruit markets which the producers from the local areas produce and sell off, and also to get an idea about the interplay between the different actors engaged in the process of fruit business and multiple nuances that prevails or crops up at multiple level.

The study applied the participatory value chain development methodology of the International Labor Organization (ILO). The framework attempted to understand five drivers in the value chain development. The five major drivers are system efficiency, product quality & specifications, product differentiation (competition), social and environment standards (especially labor condition and practices), as well as policy and regulatory framework that influences the overall performance of the sector.

A smooth supply of inputs is the basic condition for undertaking any productive activity on a sustained basis. However, the study has clearly reflected poor accessibility and availability of the inputs which affects the production and growth and development of the sector.

Better infrastructure is much required in the study area to enhance the overall livelihood scenario. Often the exploitation by middlemen in terms of less payment to the producer increases the production cost of all the raw materials. To develop an effective support system, it is important to develop a mechanism for on timely delivery of supply items at a reasonable price.The role of various institutions becomes vital in managing any kind of activities in rural business. It becomes urgent for the government departments to come forward and efficiently activate their schemes and programs, make producers aware of their rights and entitlements and provide institutional support to facilitate the growth and development of business. However, in the study it is confirmed that such services are not accessed or availed by many and

institutions are not working has been identified in the study area for which growers sell their produce at a lower price in the village and nearby areas without paying much attention to the market price among the wholesaler efficiently and effectively as expected. Lack of market intelligence or retailer. The benefit of this ignorance is taken by the trader as they have full knowledge about the prevailing prices in the big market and purchase the product from the market at a much lower price. This fact has come up in this study too where price build up shows how much producer gets and at what price retailer sells the product to the consumer. Thus, to develop a better support system, it is important to facilitate the system through which information about the expected price of the product in the market and their demand and supply can be brought into the notice of the producers in the rural areas.

2 The Context

The Indian agriculture sector accounts for 18 percent of India's gross domestic product (GDP) and employs just a little less than 50 percent of the country's workforce. This sector has made considerable progress in the last few decades with its large resources of land, water, and sunshine. India is presently the world's largest producer of pulses and the second largest producer of rice and wheat. The country is also the largest producer, consumer and exporter of spices and spice products in the world and overall in farm and agriculture outputs, it is ranked second. From canned, dairy, processed, frozen food to fisheries, meat, poultry, and food grains, the Indian agro industry has plenty of areas to choose for business. India has a large network of 7190 regulated markets; 2456 principal market yards; 4734 Sub-market yards; and 22505 rural primary markets and 6489 wholesale markets, even then, Indian Agriculture Industry continues to face internal and external challenges. While the reasons might be monsoon dependence, low level of input usage, fragmented land-holding, lack of technology application, antiquated agronomic practices and poor rural infrastructure that would deter a healthy growth. The Indian Agriculture Industry is at the verge of a revolution that will modernize the entire food chain in India and as the total food production in India is likely to double in the next ten years.

Value chain analysis is a popular tool among scientists trying to improve the functioning of various agricultural products and markets, especially in developing countries. The analysis typically aims at generation of 'upgrading options' for the chain to increase its efficiency and often tries to enable farmers to enhance their revenues from the chain by exploring on-farm value addition options. The genesis of the value chain initiative lies in the necessity to generate understanding of the available scope to develop and strengthen value-chain based agriculture activities among rural farmers.

In the research arena, these value chain projects often start with information collection on availability in the area and also gather details from areas where they are produced in other regions and end with a report developed with the aim of promoting the implementation of the recommendations of the researcher. VAAGDHARA planned to apply this process from identifying the potential for adopting cultivation of these specifically identified indigenous traditional crops, fruits, vegetables, and NTFP and also developing VCA tool for any developmental intervention it plans for improvement. It is also to support the enhancement of employment opportunities and livelihood for the tribal community located in the remote areas of tribal tri-junction as a whole. The results presented here are based on value chain studies conducted for agriculture production, mango, goat and poultry, indigenous fruits, forest foods, and NTFP. It was not intended to produce a work plan but rather to produce a repository of ideas and possible partners which could be pursued by stakeholders and/or donors. The following sections present the results of the study. The 1st section attempts to give an overview of the community, idea about the overall project, background

information, as well as about the fruit growing practices.

3 Objective of the Report and Methodology

The main objective of the report is to document value chain of the various agriculture products, produced in the studied area and understand the constraints at different levels in the value chain and analyze the existing marketing channels and potential marketing challenges to identify the way forward. The purpose of the report is alsoto address the gaps and opportunities for the value chain development in the agriculture and allied sector, particularly for small and marginal farmers.

The study followed both quantitative and qualitative method for data collection. The team conducted fieldwork for the value chain work, and collected the data through extensive interviews and held group meetings with stakeholders (producers and traders) using checklists and survey schedule. The process of data collection began with the pre-testing of the designed questionnaire, which got modified after a pilot survey for 2 days. The final data collection was conducted in two phases. In the first phase, the focus was to acquire information about the producer's socio-economic profile, activities they are engaged in, crops and material they produce, etc., and understand their perspective on the value chain analysis. The second phase of data collection covered the information about the traders and market to develop understanding about the existing situation or status of the markets which the producers from the local areas produce and sell off, and also to get an idea about the interplay between the different actors engaged in the process of business and multiple nuances that prevails or crops up at multiple levels.

4 The Analytical Framework

The study applied the participatory value chain development methodology of the International Labor Organization (ILO).The framework attempted to understand five drivers in the value chain development. The five major drivers are system efficiency, product quality, and specifications, product differentiation (competition), social and environment standards (especially labor condition and practices), as well as policy and regulatory framework that influences the overall performance of the sector.

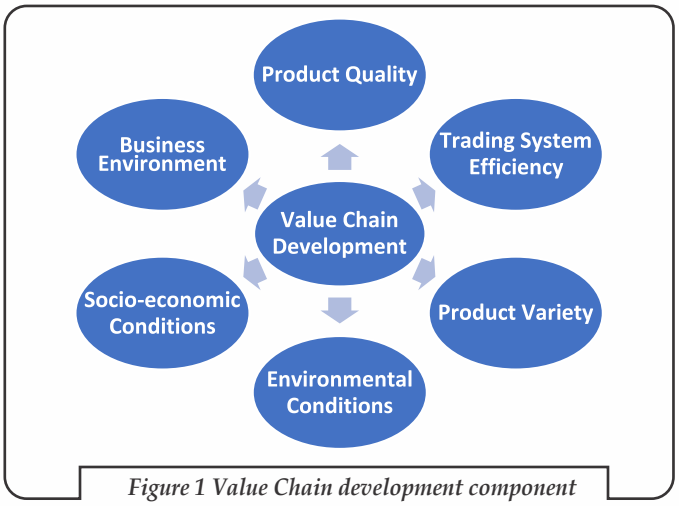


Figure 1 Value Chain development component

The findings of the study were analyzed within the boundaries of these five drivers in the value chain. To have clarity in the analysis, the followings drivers can be discussed elaborately.

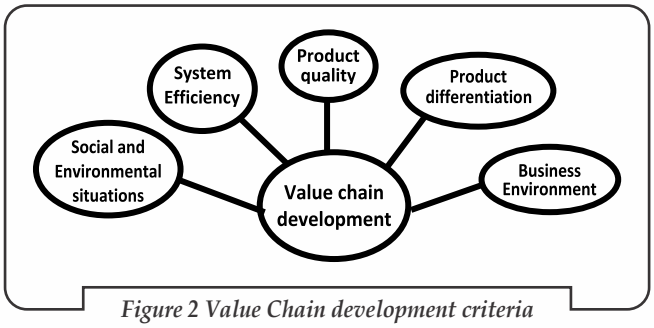


Figure 2 Value Chain development criteria

5 Study Area

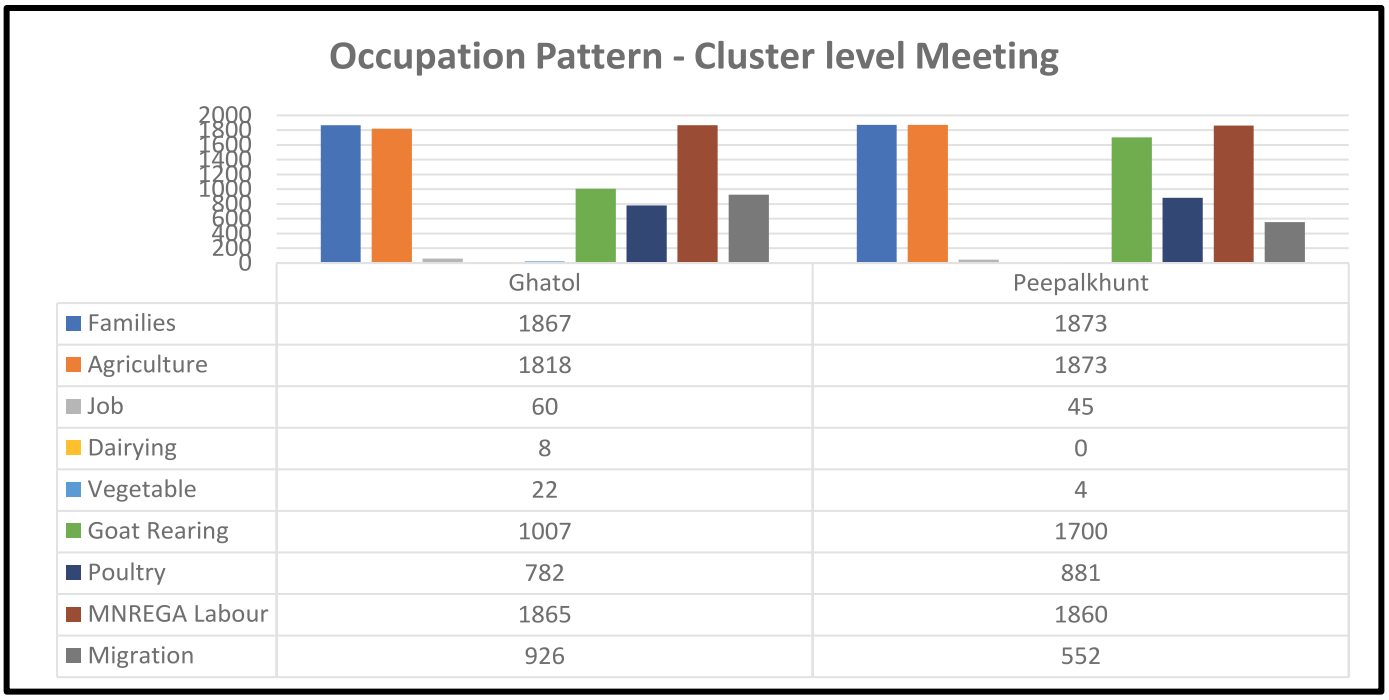
The study area is located at the junction of the districts of Pratapgarh and Banswara in the southern part of Rajasthan. The area predominantly follows the characteristic of the Aravalli Mountain and the Malwa Plateau as it is situated at the junction of both. Poverty and social structure are intertwined in this region and is highly concentrated with the poor who are specially scheduled tribe.

The area falls under the semi-arid zone, the average rainfall of 700 to 900 mm, covering average days of 28-35 rainy days during four months of monsoon. The maximum temperature rises between 45- 47 degree Celsius in the month of May-June and dips down to 8-10 degree Celsius in winter. Looking at the geo-climatic condition of the area, there lies an irony. On one hand, the area witness rainfall up to 900 mm, which has the potential for a considerably good harvest; on the other hand, the area is continuously pushed into a drought-like situation from the past few years, threatening the livelihood of the people of the area. The livelihood of the people primarily depends upon agriculture, which mainly depends on three important natural components – land, water, and favorable climatic condition. The imbalance between the three directly affects the primary source.Both state and Central governments are focusing on nutrition, livelihood, health, and education but the Human Development Index (HDI) in the tribal area of Rajasthan is at the bottom.It is predominantly tribal habituated most backward part of the state of Rajasthan.

Table 1 Village Population details

Village	Panchayat	Block (District)	Hamlets	Families	Population
Bori	Bori	Peepalkhunt (Pratapgarh)	12	977	3262
Danta			4	173	865
Mahudi Kheda			3	265	850
Thechla	Kela Mela		1	525	2625
Bhain			2	325	1676
Nalda			1	17	89
Dharna	Morvaniya		2	232	1160
Undwela	Padla	Ghatol (Banswara)	5	154	747
Matiya			3	198	962
Gadra			3	156	882
Miyasa	Miyasa		3	1122	5610
PhutiyaDoongri			2	321	1605
Kika Ki Nal			1	180	977
Bheema Ka Khera			1	52	260
GojRathor			2	222	1110
Total			45	4919	22680

These problems result in limited work opportunities within village and area, forcing them to depend mainly upon daily wages in distant urban areas. There is a need to demonstrate approaches that can build in collaboration, cooperation, integration for sustainable livelihood and social cohesion.



	Ghatol	Peepalkhunt
Families	1867	1873
Agriculture	1818	1873
Job	60	45
Dairying	8	0
Vegetable	22	4
Goat Rearing	1007	1700
Poultry	782	881
MNREGA Labour	1865	1860
Migration	926	552

Figure 3 Prevailing occupation pattern in the cluster

Table 2 Population of villages in different districts included in the project

S. No	Village Name	Total families	Population covered	Male	Female	Children
1	Bori	977	3262	1023	1029	1210
2	Data	173	865	222	242	401
3	Mahudi Kheda	265	850	221	227	402
4	Thechla	525	2625	980	1020	625
5	Bhain	325	1676	625	626	425
6	Nalda	17	89	20	20	45
7	Dharna	232	1160	308	388	464
8	Undwela	154	747	216	223	308
9	Matiya	198	962	292	274	396
10	Gadra	156	882	280	290	312
11	Miyasa	1122	5610	1600	1683	2244
12	PhutiyaDoongri	321	1605	500	463	642
13	Kika Ki Nal	180	977	260	274	444
14	GojRathor	222	1110	204	240	666
15	Bheema Ka Khera	52	260	90	95	75
	Total	4919	22680	6841	7094	8659

❖ Majority families in the project villages have small holdings (average 2-4 acres) including various types such as cultivated, cultivable-waste, pastures, revenue wasteland. Nearly 60-70% of land in the area is sloping with poor soil depth and a high degree of erosion, which is further exaggerated due to climate change induced extreme events of precipitations. FGD indicated that 63% of households in the project villages have income less than RS.25000/-annually. Only 1% of families belong to category-A i.e. more than Rs.100000 annually.

Category A	Category B	Category C	Category D
(Annual income > 100000	Annual income Rs. 50,000 to 100,000	Annual Income Rs. 25,000 to 50,000	(annual income < Rs. 25,000)
86	**222**	**1991**	**1448**
2%	**6%**	**53%**	**39%**

❖ An analysis of education status indicates that in the project villages only 13% population studied beyond the 10th standard. Gender analysis of education level also indicates that female participation reduces as the standard goes higher.

❖ In the project area, lack of work opportunities results in migration of the workforce sample Discussion have reported that during Kharif and summer season, particularly men, people of workforce age (normally 18 to 50) move out in search of work opportunity to support the livelihood of the family.

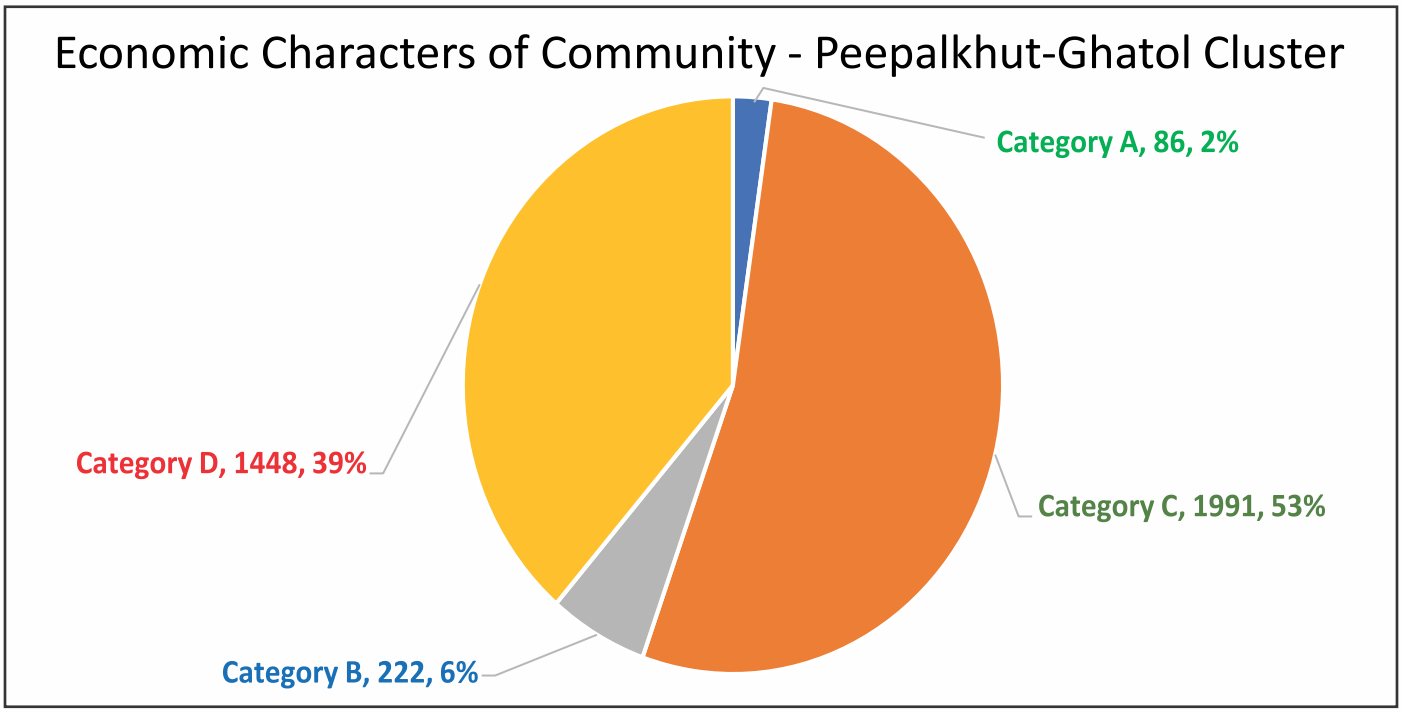


Figure 4 Socio-Economic Categories of Communities in Peepalkhunt-Ghatol

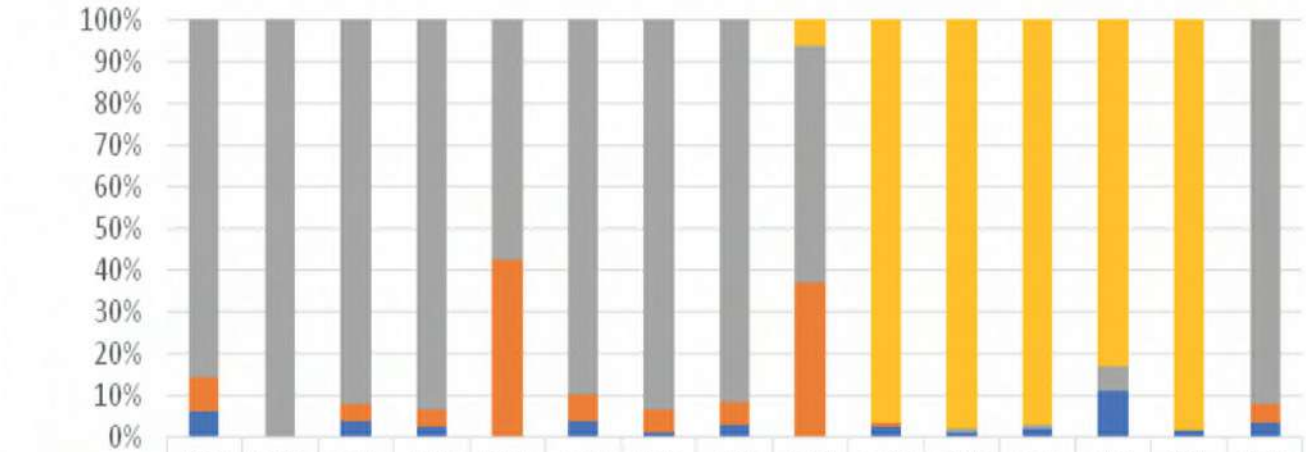
- Figure-5 gives socio-economic categories of villages in cluster indicating that 92% of families belong to category C and Category D which have an annual family income less than Rs.50000 per family or say Rs.4000/- month.
- In the cluster, almost all families fall under the category of less than $1 per capita and 92% gets annual income less than $2 per family.
- Though almost all villages have a higher population of BPL families, as indicated by figure-6, village Data, Mahudi Kheda, Bori, Nalda and The chla have a higher concentration of category-D community i.e. less than 25000 as annual income under $1 per family income.

They also brought out the fact that almost one person from each and every family goes out for migration. Migration in this area normally falls under the category of stress migration. The area is remote and hilly, the inhabitants have been cut off from developmental interventions, depriving them of basic rights and making them very vulnerable–economically, socially, and culturally. It is characterized by undulating uplands with slopes, carved out with separate barren hillocks and valleys, where villages are scattered in small hamlets.

5.1 Agriculture Production Scenario

In the study villages, major crops are Wheat, Maize, Soya bean, Gram, Garlic and opium. Agriculture is practiced both in the valleys and on the tableland on the hilltops.

Economic Categorization of Community - Villagewise



	PTD	GRT	MYS	KKN	BKK	GDR	UND	MTI	DRN	DNT	MDK	BRI	NLD	TCL	BHN
Category D	0	0	0	0	0	0	0	0	16	160	244	764	15	249	0
Category C	263	244	503	117	52	173	175	171	142	0	3	4	1	0	143
Category B	25	0	22	5	38	12	10	10	92	1	0	0	0	0	7
Category A	18	0	19	3	0	7	2	5	0	4	2	16	2	3	5

Figure 5 Village-wise socio-economic caegorization of community

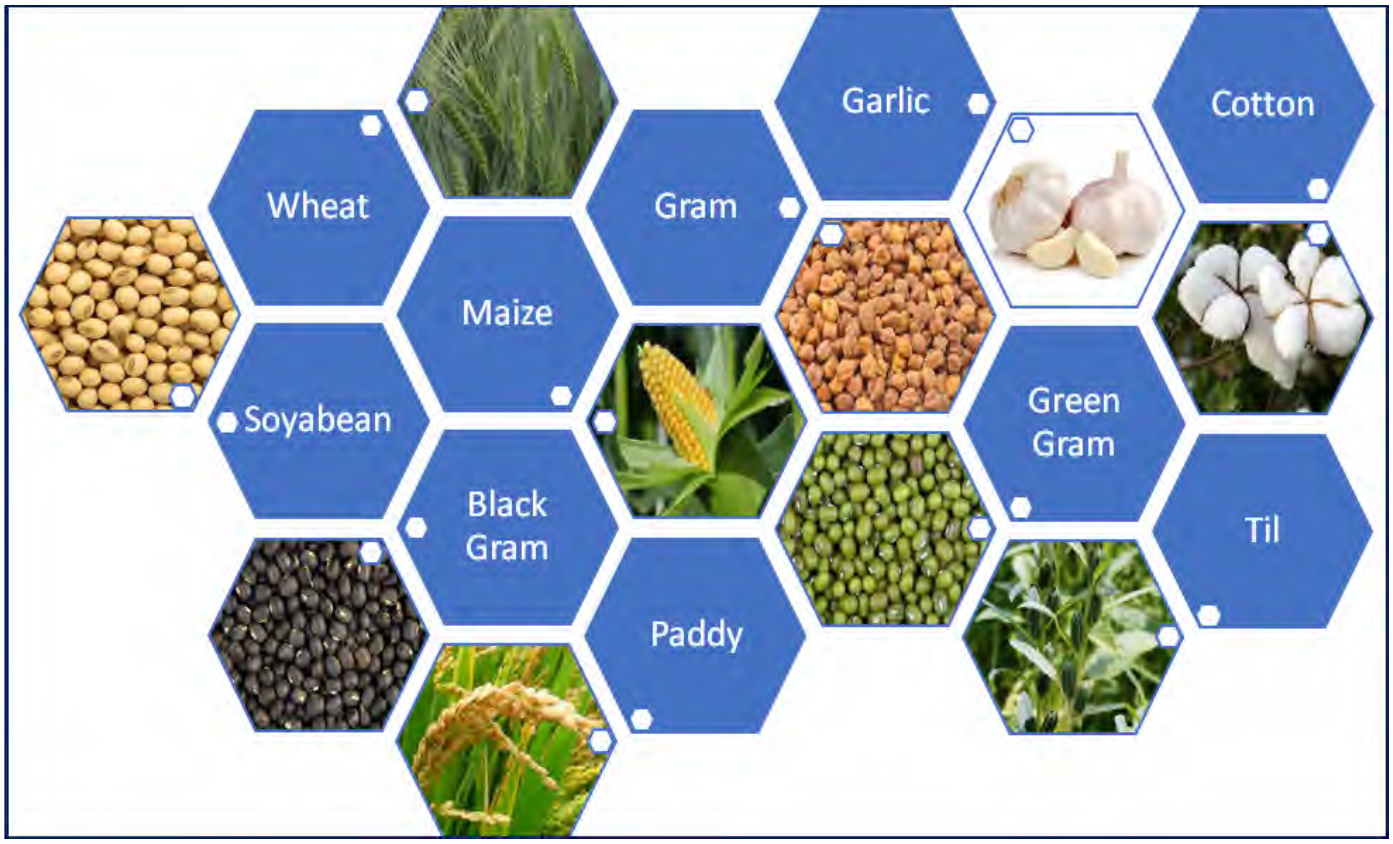


Figure 6 Commonly Grown Crops in the Area

Traditionally, food and farming system in the area followed a higher degree of diversity, but now farming is reduced to six crops maize, soybean, wheat, Gram, black-gram and mustard. Very few people grow diverse crops. This limited cropping in the food system for S&M families includes chapati (Carbohydrate) and dal (Pulses) only thus, having a diet diversity score of 2-4 points for nine to ten months. This results in widespread malnourishment for children, adolescent girls, pregnant and feeding women. Most (68%) pregnant women are anaemic. This is a clear-cut indication that major reason behind is lack-of or limited participation of the tribal community in development processes. There are many direct and indirect factors adding to this situation and key among them is lack of community awareness and joint efforts. This is further exaggerated because the community is not organized.

- Target families do not have sufficient knowledge on best agriculture practices, no farmer follows SIFS, resulting in poor productivity and marketable surplus.
- FGD indicated that annual Hh income of 63% families is less than Rs. 25,000.
- Lack of proper nutrition knowledge, feeding practices, and production diversity results in malnutrition stunting, wasting, SAM, MAM, under-weight conditions for children. 50% of children are under the category of underweight, which is very high as compared to national average i.e.29.4%. Similarly, stunting among the children below 5 years age indicates that against the national average of 38.7.
- Contribution of goat rearing and poultry birds for S&M farmers, towards family production economics, is limited to Rs.3000-4000 annually.
- Almost 50% family in 15 villages have 0.5 to 0.8 ha land as culturable wasteland and available for upgradation to culturable uses.

With limited access to common resources, concentrate their efforts on cultivated land which is 30-35% and other land remains unattended as they do not have sufficient resources and appropriate technological know-how for proper utilization such as Agro-Horti-forestry etc. In the project villages, 47% of the land is lying un-used/ underutilized.

- Table-3 shares participation level of small and marginal farmers in the study area, in value-chain of different crops and production

Table 3 Various Actions in Value-Chain of Different Poducts and Participation of Farmers

Item	Seed	Fertilizers	Pesticides	Prod. / Coll.	Primary Process	Contractors	Local Sell	Sell-Market	Sell at Mandi	Family Use	Animals-Use	Adv. Process	
Maize					Grain								
Wheat					Grain								
Gram					Grain								
Soyabean					Grain								
Jau (Barlay)					Grain								
Black-gram					Grain								
Green-gram					Grain								
Poultry													
Goat													
Chili					Drying								
Turmeric					Drying								
Vegetables					Drying								
Timru					Drying								
Tendu-Leaf								Fad					
Mango					Drying & Paal								
Papaya													
Index													
Own Source			Market (Outside)				Local Market						

5.2 Indigenous Fruits and other NTFP in the study area

The study area is rich in non-timber forest products on which the inhabitant tribal population of the region largely depends for their livelihood. The important non-timber forest products available in the region are madhuca longifolia or butter tree (mahua), cordia dichotoma (lasuda), Diospyros melanoxylon (Tendu Patta) leaves, Butea monosperma (khakra/ palash) leaves and gum, wild fruits like custard apple, Carissa carandas (karonde). The local residents in the forest and in the peripheries of the area are largely dependent upon the minor forest produces for their livelihood which is in the declining trend. The continuous rise of population pressure, encroachment of businessman on the natural resources from outside, overexploitation of NTFP by the local, resulting to depletion and degradation of the forest produce, create a burden on the livelihood of the people disturb the balance of life of people living in the area.

The area also has the potential to grow a diverse variety of fruits. The study team identified five kinds of fruits namely Mango, pomegranate, Indian gooseberry, citrus and custard apple, which is being cultivated by the local communities but has not been commercialized to a large extent. These fruits are important livelihood component for small scale rural farm households, but they have much more potential to play a bigger role in the livelihood enhancement of the rural poor as these are the fruits which have a high potential for cultivation in the harsh climatic situation like in study area. Presently, the fruits are not cultivated on a very large scale or in extensive commercial basis rather these fruits are grown in the wild or in-home gardens or field boundaries. It has been observed that Mango is among the fruits which is found wild comparatively in the area especially Peepalkhunt tehsil individually whereas other fruits are cultivated in small scale which is consumed at the household level.

5.3 Goat Rearing Scenario in the Cluster

Within the study villages almost all families, mainly tribal families practice goat rearing as an important component for their livelihood, but unfortunately, they are not able to explore proper benefits due to lack of professional approach. Table-7 indicates that all the studied communities especially **Miyasa** and **Goj Rathore** families have a higher population of Goat, per family goat population is 8.68 and 9.15, but even than also income generation from goat rearing is limited.

Small and Marginal tribal families, in the area have been following goat rearing as a part of their livelihoods, but with time, productivity of these non-descript goats have reduced. Thus, under this project in order to improve the productivity of goats.

- Foundation unit for 40 families in this phase with one goat *of Sirohi* breed (which have higher production milk and meat).

- *Sirohi*is a breed, which can grow well in the agroclimatic conditions of South Rajasthan. It is a dual-purpose breed which provides milk yield of 1-1.5 liters/day for around 180 days and also 25-30 kg body weight within eight to nine months.

- One buck will be provided among four families on a sharing basis.

- Altogether family will get an around 200 liters milk worth Rs. 8000 (@Rs.40/litres) and 20 Kg mutton value for buck worth Rs. 3000 (@Rs.150/-) total income would be Rs.11000/- with an investment of Rs. 3000 ie; investment of concentrate feed, vaccination, insurance initially on a recurring basis for one goat and shared buck.

Table 4 – Goat rearing Scenario in the cluster

Village	Village	Families	Buck	Goat	Total	Goat/family
PhutiyaDoongari	PTD	306	62	908	970	3.17
Goj Rathore	GRT	90	62	719	781	8.68
Miyasa	MYS	244	254	1978	2232	9.15
Kikakinaal	KKN	544	129	525	654	1.20
Bheema ka khera	BKK	125	58	268	326	2.61
Gadra	GDR	187	198	768	966	5.17
Undvela	UND	185	264	1212	1476	7.98
-Matiya	MTI	186	0	729	729	3.92
Dharana	DRN	250	162	900	1062	4.25
Danta	DNT	165	60	375	435	2.64
Mahudikhera	MDK	249	99	502	601	2.41
Bori	BRI	784	257	2122	2379	3.03
Nalda	NLD	18	10	50	60	3.33
Thechla	TCL	252	82	617	699	2.77
Bhain	BHN	155	52	315	367	2.37
5	**15**	**3740**	**1749**	**11988**	13120	3.51

- The project will try to help a family in getting goat which comes with one kid preferable female (Doe) so, that it helps in building on unit further, if not the buck will be grown and procured by the project for phase-2 distribution program so that overall breed improvement can be achieved.

  Among the indigenous tribal community of the project area, 50.6% of households are living below the absolute poverty line. Overall livelihoods of the community face a situation like fast land degradation, soil erosion, unprotected cultivation in sloping land etc.
- It is part of semi-arid to sub-humid climate with an average rainfall of 700 to 900 mm, precipitate in an average of 30-35 rainy days spread over in the four months of monsoon. The maximum temperature is 43°C during the months of May-June and minimum of 10° C in the winter.
- The project area is dominated by undulating topography with moderate to steep sloping land facing soil erosion resulting in poor organic matter and skeletal soil.

6 Agricultural Marketing in the Study Area

An agricultural marketing system is an efficient way by which the farmers can dispose off their surplus produce at a fair and reasonable price. Improvement in the condition of farmers and their agriculture depends to a large extent on the elaborate arrangements of agricultural marketing. The term agricultural marketing includes all those activities which are mostly related to the procurement, grading, storing, transporting and selling of the agricultural produce. Like the majority of rural areas of India, in the study area there are **four different systems of agricultural marketing:**

Figure 7 Map showing market and project villages (marking with milk indicates heat bazar location, while those with yellow and green project villages

1. Sale in Villages :

The first method open to the farmers is to sell away their surplus produce to the village moneylenders and traders at a very low price. The moneylender and traders may buy independently or work as an agent of a bigger merchant of the near Mandi. In the area, more than 60% of the agricultural productsis sold in these village markets due to the absence of poor access to and poorly managed organized markets.

2. Sale in Markets :

The second method of disposing ofa surplus of the farmers of the study area is to sell their produce in the weekly village markets popularly known as 'haat' or in annual fairs. In the study area, there are four market places as shown in the attached map Ghatol, Bhungda, Prathvipura, Peepalkhunt.

3. Sale in Mandis

Agricultural marketing comprises all operations involved in the movement of farm produce from the producer to the ultimate consumer. Thus, agricultural marketing includes the operations like collecting, grading, processing, preserving, transportation and financing. The third form of agricultural marketing in India is to sell the surplus produce through mandis located in various small and large towns.

Agricultural marketing comprises all operations involved in the movement of farm produce from the producer to the ultimate consumer. Thus, agricultural marketing includes the operations like collecting, grading, processing, preserving, transportation and financing.

There are nearly 1700 mandis which are spread all over the country. As these mandis are located in a distant place, thus the farmers will have to carry their produce to the mandi and sell those products to the wholesalers with the help of brokers or 'Dalal'. These wholesalers of mahajans again sell those farm produce to the mills and factories and to the retailers who in turn sell these goods to the consumers directly in the retail markets.

4. Co-operative Marketing :

The fourth form of marketing is the co-operative marketing where marketing societies are formed by farmers to sell the output collectively to take advantage of collective bargaining for obtaining a better price.

7. Existing Market Ecosystems Market Mapping

Location analysis and focus group discussion with the local community, during their SHG meetings and special meetings organized to understand market eco-system within the project villages, indicated that community in the area is linked with the wider market network through local networks. The following figure shows the trade links.

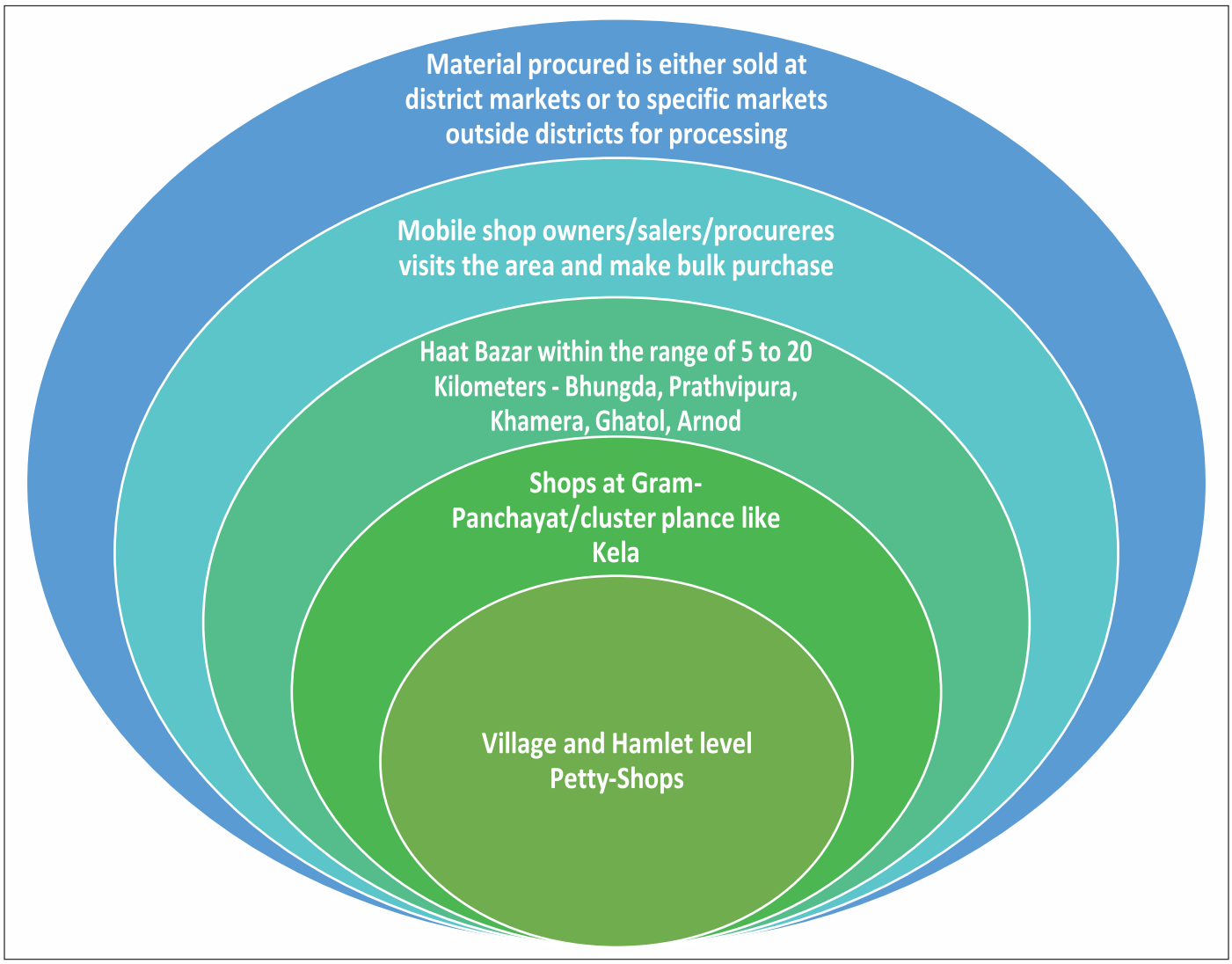
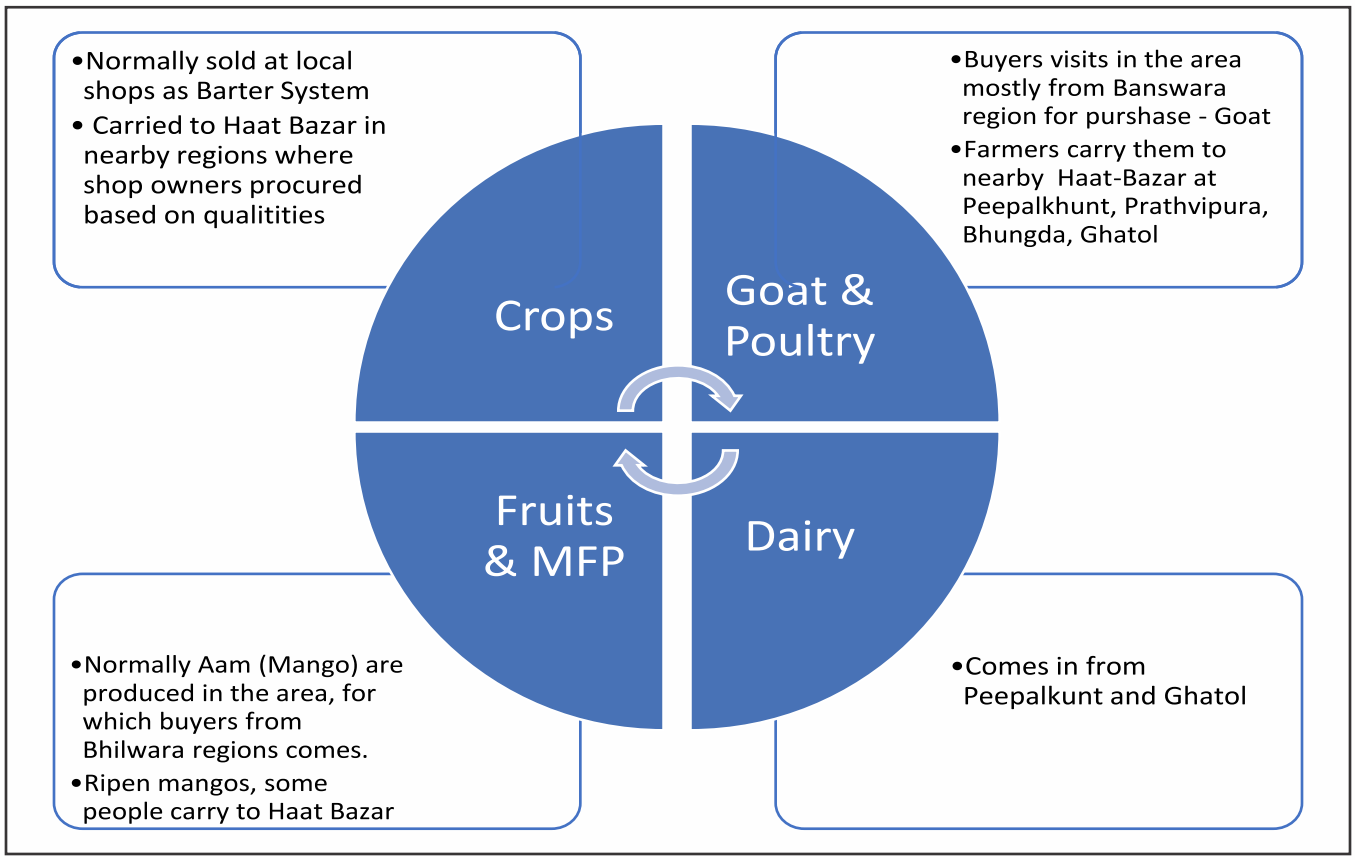


Figure 8: Market Hierarchy within the study area and its linkage with the national market.



7.1 Items Come – In

The agricultural sector is in distress in the studied area because of the inexorable downward pressure on farm size and increasing concentration of the lower landholding group. The income from agriculture and agri-allied activities is low because of which, the phenomenon of migration is common, guided by necessity and not by choice. Most of the agriculture is rain-fed and the major crops grown in the area are maize, paddy, pulses, millets, and oilseeds. People with irrigation facilities also grow wheat, groundnut, sugarcane, and vegetable. Earlier, people used to take a single crop; however, with the construction of the dam over 'Mahi' River, they could take the double crop. Small land holding is one of the major problems for which agricultural productivity remains low.

However, with the change in time and recent development, the agricultural practices among the villagers. All the farmers (respondents) shared that they rely on the old techniques and patterns of agriculture production because of which they find themselves retrograde with the recent development and the struggle to make balance with the technological advancement and changing scenario in the agricultural sector. The practice of doing agriculture unscientifically, without proper information, knowledge, and skill continues to contribute to problems in the agricultural activities among the farmers.

Within agriculture main input procured from outside is 899 tons of Urea, 185 tons of DAP and 376 litres of different pesticides (Mono-chromophores and Indo-Sulphon) altogether they cost 129.18 lakhs, which is too high input cost i.e. average of 3454.11 per family. Besides agricultural input, some of the common material comes in villages includes milk, vegetables, packaged material, spices, salt, oil, clothes etc.

- Now a days, petty shops are found in the area as shown in the picture, which sales items, which comes in from outside, one such shop visited at Mahudi-Khera, owned by Fanni Bhai. Such petty shop-owner normally get a 5-10% margin in print rate, which is normally over-rated.
- The local level petty shops in the area are supplied through mobile-vans which comes regularly in the area either **from Pratapgarh or from Banswara**.
- There are nearly 2000 buffaloes reported within the village some of the project villages particularly well-off families, who produce some milk, which is sold to nearby, hotels (restaurants) at Ghatol, Peepalkhunt, Khamera. At the same time some milk owner sales their produce in own/nearby villages.v Some packaged milk (mostly milk packet of 200 ml) comes from Bhilwara, Kota and other regions and sold at the rate of Rs.10/- per packet. This way more or less it is a milk importing area.
- At Bhungda, Khamera some potter families are there, besides there are earthen pot producers. The requirement for earthen pots mainly *Matka, Kadela*, etc is made through procurements at *Haat*, or otherwise, local petty shop owners also bring from there and sale in the area.

Table 5 Import of Fertilizer and Pesticides in the Cluster

Village Name	Families	Urea (Kg)	DAP (Kg)	Pesticides (Litre)
PhutiyaDoongari	306	91800	15300	36
Bheema ka Khera	90	22500	4500	9
Goj Rathore	244	1244	244	24.4
Miyasa	544	190400	27200	54.4
Kikakinaal	125	62500	6250	12.5
Undvela	187	87500	12500	25
Gadra	185	129500	18500	18.5
Matiya	186	111600	9300	18.6
Dharana	250	37500	12500	15
Danta	165	16500	8250	16.5
Mahudikhera	249	24900	12450	24.9
Bori	784	78400	39200	78.4
Nalda	18	3600	900	1.8
Thechla	252	25200	12600	25.2
Bhain	155	15500	5425	15.5
	3740	**898644**	**185119**	**375.7**

- Nowadays almost all the shops are full of various processed food material.

Most of the farm operations are done manually and use of mechanical means is very limited. Productivity also remains low due to low investment and the practice of using low input materials. The explanation for the backwardness primarily rests on the financial crunches that takes away the ability of the farmers to invest in agricultural activities. As poor farmers cannot afford to purchase seeds and fertilizers on time, so they buy on credit for which they have to give double the stock of the wheat post-production. The lack of knowledge and awareness about the quality seeds and fertilizers and the market price make them invest double the amount to the shopkeeper than the real market price.

Other than seed and fertilizers, farmers also find it difficult to arrange the thresher in time for the harvest. In the area, there is limited availability of thresher. The owner of the machine has less trust in the repayment ability of the small farmer and many times deny rent out their machine. In such cases, farmer's gets late to cut their harvest that bears the higher chance of crop Wasting. Moreover, small farmers fail to stock surplus of the produced yields for the crisis period as they have to give the maximum of their production to the owner of the thresher. In addition, the use of an unbalanced amount of fertilizers and pesticides without proper information has an adverse effect on soil fertility. The reason behind this could be explained partly because of price differential, and partly due to lack of knowledge among farmers about the need for balanced fertilizer use. All the respondents are in practice of using DAP and urea for their cultivation. Thus, degrading natural resources is one of the reasons for the misery in people's lives in the studied area; however, there are other determinants that equally hold the share in making people's life and livelihood troublesome.

Table 9 – Major Constraints

Resources	Financial	Market	Mediator
· Scarcity of water · Inability to purchase fertilizers, Manures, etc · Small land holdings. · Lack of tools and implements to carry out proper intercultural operations · Lack of machinery to irrigate fields. (Irrigation is done through renting engines from others) · Lack of availability of quality input like a good nursery for good quality plants.	· Lack of cash. · Not enough savings. · Most respondent not having KCC (Kisan credit card) or institutional credit.	· No regularised market nearby. · Transportation problem	· Exploit growers by paying less compared to the current market rate of the produce.

Realizing the resource constraint, farmers often aim to meet the local needs, ignoring the hopes and aspiration to modify their farmland and work towards productivity enhancement through traditional means. They act as risk-averse and had resistance toward the application of any new technology or bringing out any changes in their traditional based farming practice with the fear to lose even the minimum production that ensure their survival. Availability of input material is an ought most important aspect to have growth in the agricultural activities. However, in the present study, it has been shared by the respondents that they face a struggle in multiple manners in terms of resource deficit, cheating by the middlemen, lack of knowledge, poor flow of information, lack of access to government services. There are few major problems which have been loudly voiced out by the respondents which are as follows-

7.2 Items Go – Out

Study also tried to capture what goes-outside of the project area, Table-6 gives list of items and quantity sent out and income generated by project community through sales of these items. Table-3 also give details about the various actions associated with different products and also participation of farmers in different steps of value chain. This indicates that local community is not involved in processing, thus accessing to limited share in whole value-chain.

Table 6 Major Items Sold Out of the Cluster Villages

Ghatol			Items	Peepalkhunt		
Fm	Qtls	Income (lakhs)		Fm	Qtls	Income (lakhs)
1615	6882	215.84	Soybean	1199	3615	135.45
794	3891	62.26	Wheat	0	0	0
120	984	0.72	Green Gram	36	256	3.224
1576	761	32.63	Pigeon Pea	767	179.4	8.666
878	3353	39.54	Maize	0	0	0
343	400.9	13.54	Gram	744	787.8	50.99
0	0	0.00	Black gram	604	161	11.754
45	108	4.96	Cotton	470	746.6	37.334
244	53	2.65	Sesame	61	21.5	1.75
0	0	0.00	Sukhmani	0	0	0
0	0	0.00	Ground nuts	14	20	0.88
0	0	0.00	Paddy-Rice	0	0	0

7.3 Made in Project Area

In four villages namely Data, Mahudikheda Nalda & Thechla 70 families are involved in the production of bamboo articles i.e. tokari, etc. which are normally sold in villages around and altogether they earn average 5500 through this activity annually. Bamboo is mainly collected from the village itself.

Around 13 families in two villages and earn average of 10000 annually through this activity. Each household average Rs.500 towards tailoring expenditure making a total of Rs. 3740*400 = 1496000.

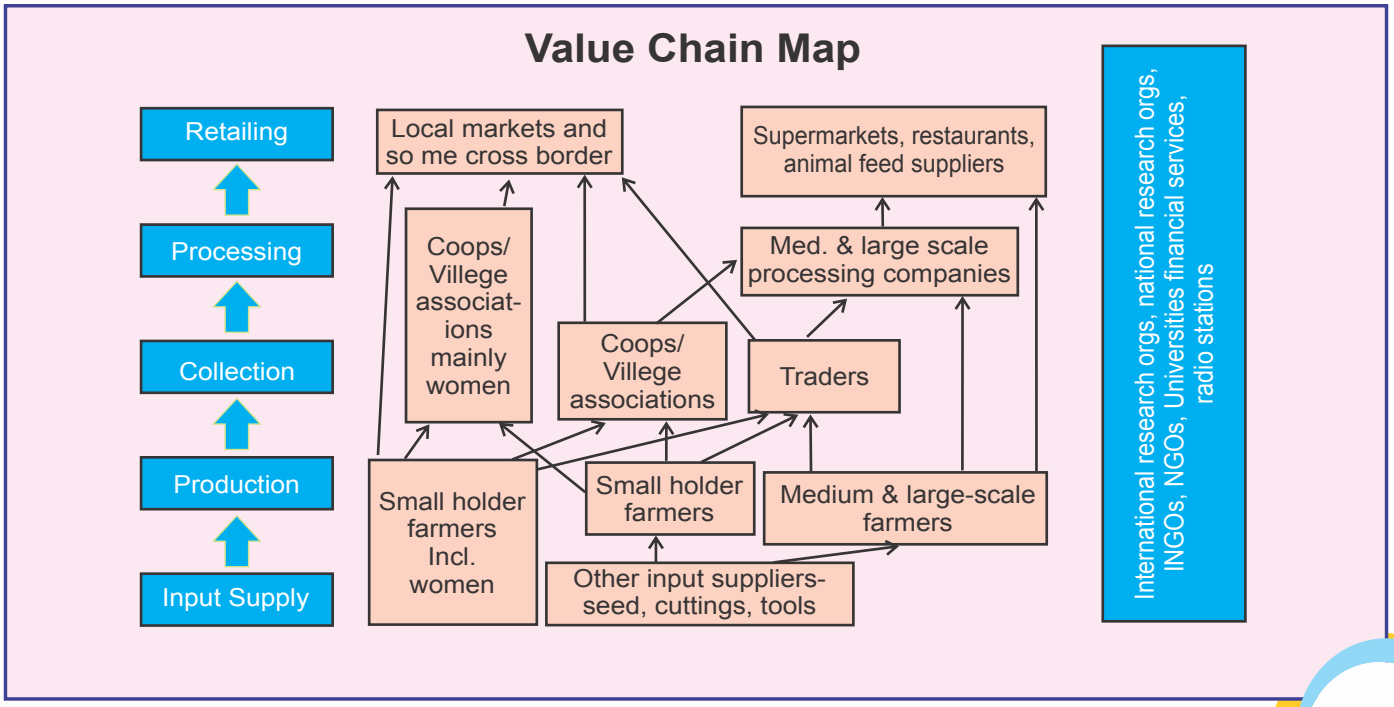
Individually within project villages, few individuals are equipped with skills of carpenter work. They make wooden implements based on the order.

7.4 Processing within the area

As indicated in Table-8 most of the agriculture production in the area is sold without much processing, except for some primary level threshing and cleaning. Few women are involved in following specific processing;

- Collection and drying of Mahua flowers, some of it are used for household level processing of local drink, and rest is sold to nearby market places name **Peepalkhunt, Prathvipura, Ghatol, Khamera, and Bhungada**.
- Traditionally women have been drying various vegetables mainly *Bhindi,*
- Community in the area were traditionally producing their own chili, which was dried and kept for whole year consumption, now only 15-20% families following this practice, while remaining families have shifted to procure from the market, mostly procured from the local market.
- Previously, people used to buy raw-turmeric and keep them for year-long use. Each time they need it will be ground immediately and utilized, were chili, turmeric, and salt used to be ground together, with some other spices. Now consumption of turmeric is mostly depending on the market that too.

8. What is Value Chain and existing Value Chain in the project villages



9 Goat and Poultry Market System

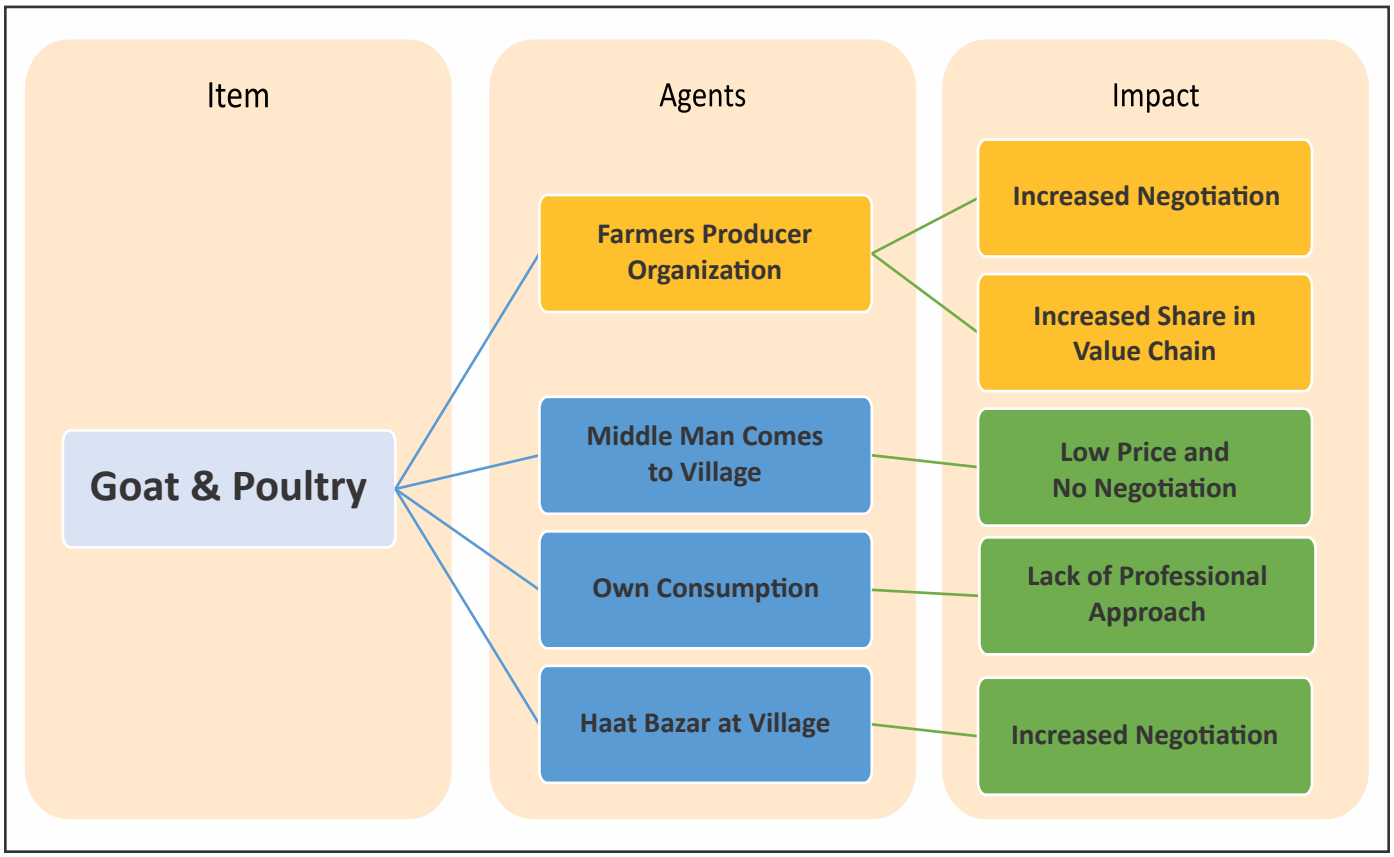


Figure 9 Existing and Potential Value chain in Goat Rearing

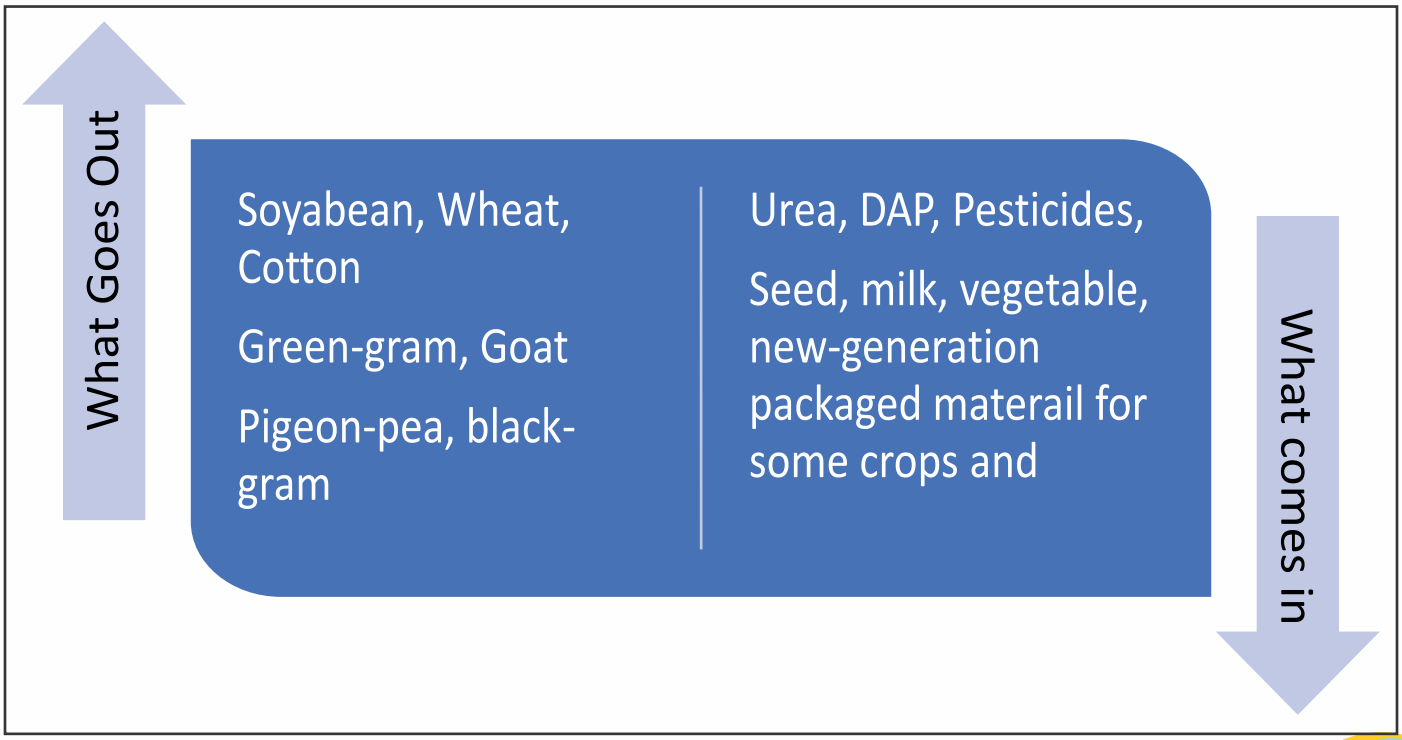


Figure 10 What Comes in and What Goes Out in the study area within the Agriculture Value Chain

Table 7 Nearest Market Place location from each project village

Sl	District	PS	GP	Village	Market	Distance(Km)
1	Banswara	Ghatol	Miyasa	PhuliyaDungari	Peeplakunt	4
2	Banswara	Ghatol	Miyasa	Goj Rathore	Peepalkunt	5
3	Banswara	Ghatol	Miyasa	Miyasa	Peepalkunt	7
4	Banswara	Ghatol	Miyasa	Kikakinaal	Peepalkunt	7
5	Banswara	Ghatol	Miyasa	Bhema ka khera	Peepalkunt	3
6	Banswara	Ghatol	Padla	Gadra	Peepalkunt	10
7	Banswara	Ghatol	Padla	Undvela	Peepalkunt	7
8	Banswara	Ghatol	Padla	Matiya	Peepalkunt	7
9	Pratapgarh	Peepalkhoont	Bori	Danta	Peepalkunt	15
10	Pratapgarh	Peepalkhoont	Bori	Mahudikhera	Peepalkunt	12
11	Pratapgarh	Peepalkhoont	Bori	Bori	Peepalkunt	15
12	Pratapgarh	Peepalkhoont	Kela mela	Nalda	Peepalkunt	16
13	Pratapgarh	Peepalkhoont	Kela mela	Thechla	Peepalkunt	10
14	Pratapgarh	Peepalkhoont	Kela mela	Bhain	Bhonngra	8
15	Pratapgarh	Peepalkhoont	Morwaniya	Dharana	Peepalkunt	7

Input - Chain dependency on outside

Fertilizers (Urea, DAP)
Seed
Pesticides

Output - Chain dependency on outside

Soyabean, Cotton, Black Gram, Green Gram Pigeon - Pea

10 Present Value Chain – Market Ecosystem in the area'a

The concept of "agricultural value chain" (Ag VC) covers the full range of activities and participants involved in moving agricultural products from the farm gate to the consumer's table (Farm to Fork). VC is often defined as a sequence of value-adding activities, from production till consumption, through processing and commercialization. The Value chain concept of developmental approach through private sector investment is gaining momentum across the world. **Traditional agricultural value chains** are generally governed through spot market transactions involving a large number of small retailers and producers

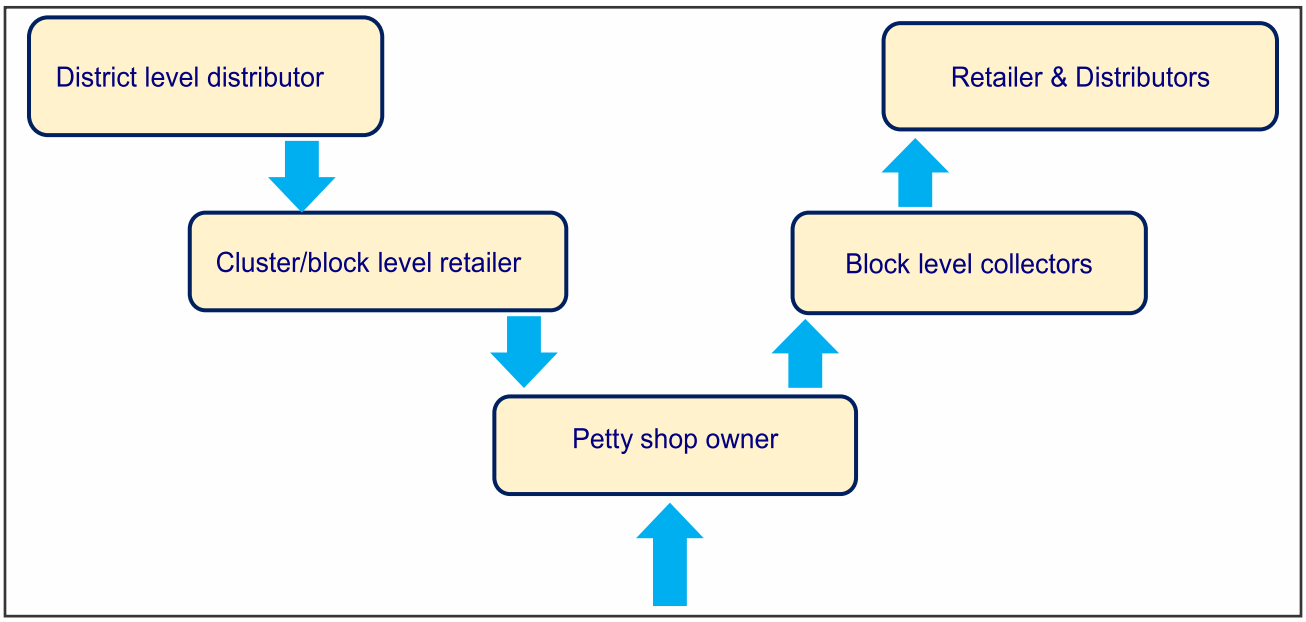


Figure 11 Flow of material (input and product) in the project area

Most of the deals at the primary producer and petty shop owners are mostly on barter relationship in which negotiation is mostly in favor of shop owners; farmer mainly small and marginal hardly has any say in such transaction. As a customer, who is a producer also comes with material, shop keeper weighs and tells how much is the money, he/she will get, then the individual will put forth their requirement for which shop keeper will tell what all and how much can be provided and gives, sometimes persons want clarification, then he is shown some maths, which they normally do not understands much.

11 Value Chain Analysis – Non-Timber Forest Produce

Besides agriculture and animal husbandry, there are some families those are involved in collection and production of NTFP such as Tendu-leaf, Mahua, Mango, Jamun, .In the study area presently, the producer sells raw fruits whichever they produce and sell to the middlemen at the rate offered by middlemen at the doorstep of the producers. Hardly there are processes involved in livelihood of small and marginal farmers.

11.1 Mango Value Chain in the Area and Participation of Farmers

Mango is a seasonal fruit available mainly in spring and summer seasons i.e. from March to July. In March to April mostly fruit from other regions and May to July fruit from the local region and first un-ripe and June-July ripe fruit. Rest of the mentioned fruits are also

available in the market between these three months. There is a stepwise process which is followed sequentially from the receiving area of the fruits till the dispatch. Thestep-wise process is described below figure-12.

Receiving Area	•Middlemen (local name"Kunjda"), identify and make assessment. •Make offer and negotiate with the farmers & Pay some advance
Harvest	•Kunjda, comes with his team to harvest the produce from the farm. •Load it to vehicle, Pay Balance and proceed.
Sorting and grading	•Sorting is done at the time of harvesting based on size & colour. •Done physically with the help of labour
Quality Criteria Check	•Physical observations on size, colour, etc. and by tasting orally. •No equipment or technology is used. Do not require much capital.
Packaging	•Packing is done in gunni begs/plastic carats t the time of harvesting
Waste Disposal	•No specific practice for disposal as the product is biodegradable.
Dispatch	•All the transportation is made through trucks and mini trucks. Normally on sameday or next day after harvesting.
Market	•Carry product to the wholesalor at the *mandi* and sell. •These vendors are also in contract with the middlemen
Sweetshop owners	•Process mango pump into sweets and Papad
Pickle Industry	•Makes various receipes outoff unripe and ripe mangoes such as pickle, sause, chatani, papad, etc.
Consumer	•The wholesale vendors sell the products to the retail vendors •Retailers to consumers.

Figure 12 Showing various actors in Mango-Value Chain

The study shows that there remain challenges such as poor transport, lack of knowledge about market dynamics, lack of proper infrastructure to store produce once harvested, etc. For these challenges, the growers of the study areas highly remain dependent upon middlemen locally known as "*Kunjda*", who comes at the doorstep of the grower and purchase their products and further sell it to whole-seller in the market. As Mango been identified among those fruits which are regularly sold out by the growers in the study area, so the focus of discussion was made around Mango.

The above sequence clearly shows what activities are being done in each step and how it is carried out. It is clear from the process that the entire system functions in a very simplistic manner, more labor-intensive, quality judgment based on individual's observation and tasting ability, less technology application, less engagement of growers, beyond their farm activities. Figure-12 above explains the major value-chain and **channel trade of Mango** in the studied area. Two dominant types of the chain can be classified on the basis of the point of sale. The major actors involved in the trade of Mango in the studied area are a grower, pre-harvest contractor, commission agent, wholesaler, and retailer.

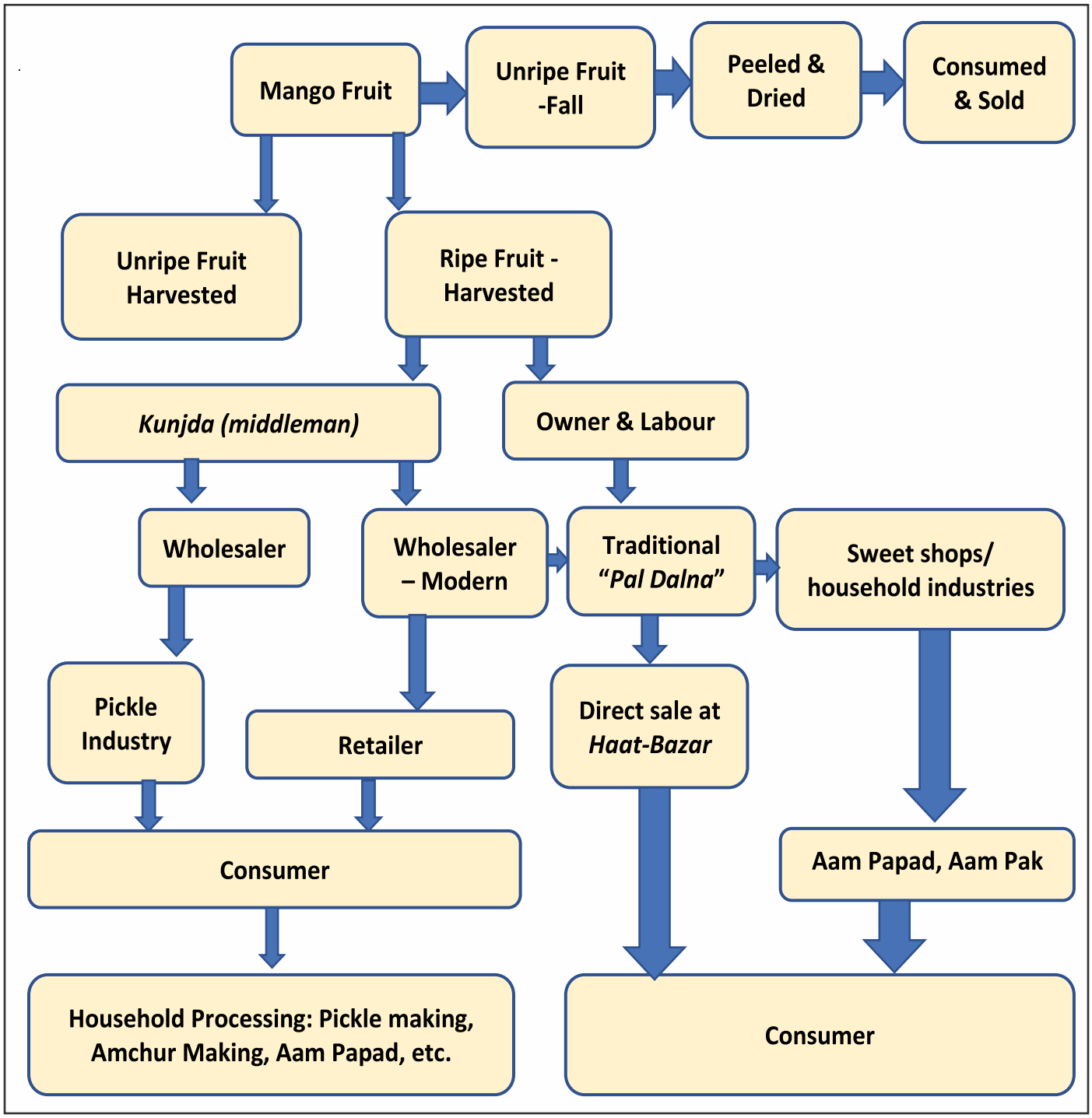


Figure 13 Mango Value-Chain in the Area

Farmers remain engaged with all the agronomic activities related to production like weeding, trimming, pruning, fertilization activities, etc. The farmer grows fruits in their orchard and expects to get profit out of it by selling the produce. In the studied area, it is the farmers from *Peepalkhunt* who are traditionally, growing Mango in their land. These traditional Mango growers are into Mango business from many years, but yet they lack resources, abilities, and confidence to get into the marketing by themselves to earn maximum profit out of it. They are dependent upon the middleman for selling out their product from their doorstep.

Secondly, pre-harvest contractors are actors who play a very important role in the value chain process. He decides and fixes the price of the fruits depending upon the available information about the market rate and negotiates and arrives at an agreement on terms and conditions for payment and use of fruits accordingly with the grower. Harvesting, labor cost, and transportation costs are borne by the pre-harvest contractor. The discussion with the growers revealed the fact that this system is well accepted among them because; as a farmer they are free from all problems related to harvesting, transporting as well as market selling. For example, they do not need to negotiate with labour for harvesting, no burden to bear the transportation costs, etc. Farmers find it easy for them, though they get less income in this system. However, this attitude of the farmers to compromise with the price as they do not need to do anything beyond their agricultural activity might be because of their inability to manage things which they find as a problem. They find themselves incapable because of their lack of knowledge, information flow or financial abilities for which they are ready to get less amount out of their product rather than coming in front themselves and directly sell the produce in the market instead of solely remain dependent upon middlemen.

Commission Agent: The presence of a commission agent is not everywhere. It depends upon the kind and size of the market. The role of the actor becomes important in the value chain as they are the one who facilitates the sale of the produce of the pre-harvest contractor for which they charge a commission of 1.5 percent of the total value of the sold products. Commission agent decides the price, remain involved in the auction of the product and help in all kind of activities in the *mandi* for selling the product.

Wholesaler: Wholesaler is the actor who sells the produce in bulk and then sells it out locally in the retail markets at multiple points in smaller units. Here weighing, sorting and grading is done and then further moved towards the retail outlet.

Retailer: Retailer then sells the product to a consumer who covers all the cost incurred in bringing the produces to the point of the retail outlet which is charged from the final consumer. The retailer remains in the higher risk of having poor quality produce and its deterioration because of the perishability of the fruits. So often the retailer tries to cover the loss prices in the final selling cost of the fruits which is being charged from consumer.

While considering the cost-effectiveness of the product in the value chain as it passes through many stakeholders, growers earn less than what could be earned if direct selling or easy access to market can be availed to them. In every step of the value chain, each actor performs some activities which involve some cost. There is a tentative price build-up process in the value chain of Mango as shared by producers to the enumerators during the discussion in the field. Table - 7 presents the percent share of different actors within the cost chain or price build up.

Table 8 Share of each actor in consumer rupee within Mango

Actor	Cost Chain (Rs.)	Income	Share of (%)	
Farmer/Producer	**30**	**30**	**40%**	**40%**
Contractor (Transportation)	**45**	**10+5**	**20%**	**60%**
Wholesaler	**50**	**5**	**14%**	**74%**
Retailer	**75**	**20**	**26%**	**100%**

Thus, the build-up price clearly shows how the prices increase in each step where every stakeholder makes their own profit. If growers can get into the market directly then profit margin at grower's level will increase and will bring growth in their business. Growers can be organized; their skill, knowledge, and capacity can be enhanced through training and demonstrations and can bring them to the market to play directly. Out of the selling, each actor earns their profit. Share of each actor in consumer rupee (in percentage).

11.2 Mahua value chain and participation of Farmer

Mahua is one of the most commonly known and little less commonly found multipurpose tree (see figure-6) in most of the tribal regions of India and abroad including area under study. It is found that in this area, community mostly uses Mahua either for liquor, oil and fodder, timber. The two major species of genus Madhuca found in India are Madhuca Indica (syn. Brassica latifolia) and Madhuca longifolia (syn. Brassica longifolia). Mahua is widely accepted as the local name for the fat from both these species. M. Latifolia is a deciduous tree while Mlongifolia is an evergreen or semi-evergreen tree. Attains height up to 70 ft. The tree matures and starts bearing 8 to 15 years, and fruits up to 60 years. The two species are not differentiated in Trade. The kernels are 70% of seed by weight, are seed contains two kernels, having 2.5cm x 1.75 cm size oil content in latifolia is 46% and 52% in longifolia. In seeds, oil content is +35% and protein in 16%. Though traditionally it was one of the well-known. With time it has lost its worth and only known as liquor plant.

Mahua Fodder

Mahua Flower

Mahua Fruit

Oil

Dolma

Liquor

Figure 14 Common uses of Mahua – Plant

Slowly-slowly its plantation has stopped and now pone hardly found a sufficient number of plants to serve the population for different products. The flowers don't remain on the tree for long; they bloom at night and fall to the forest floor at dawn. Entire Mahua tree is vital to tribal body, mind, and spirit, from cradle to grave. Mahua leaves are woven into cups and plates used for festivals, sticks of the tree are placed on the bride and groom's hands during weddings and a corpse is anointed with mahua oil. The flowers can be eaten raw, boiled, or fried and eaten with salt and chilies. Mahua fruit is eaten as a vegetable, while oil from the seeds is used as everything from a hair fixer, for cooking and lighting lamps, to making soap.

Table 9 Share of each actor in consumer rupee within Dried mahua value-chain

Actor	Share of (%)
Collector – Farmer	30%
Buyer - Trader	30%
Seller -Trader	30%
Losses	10%

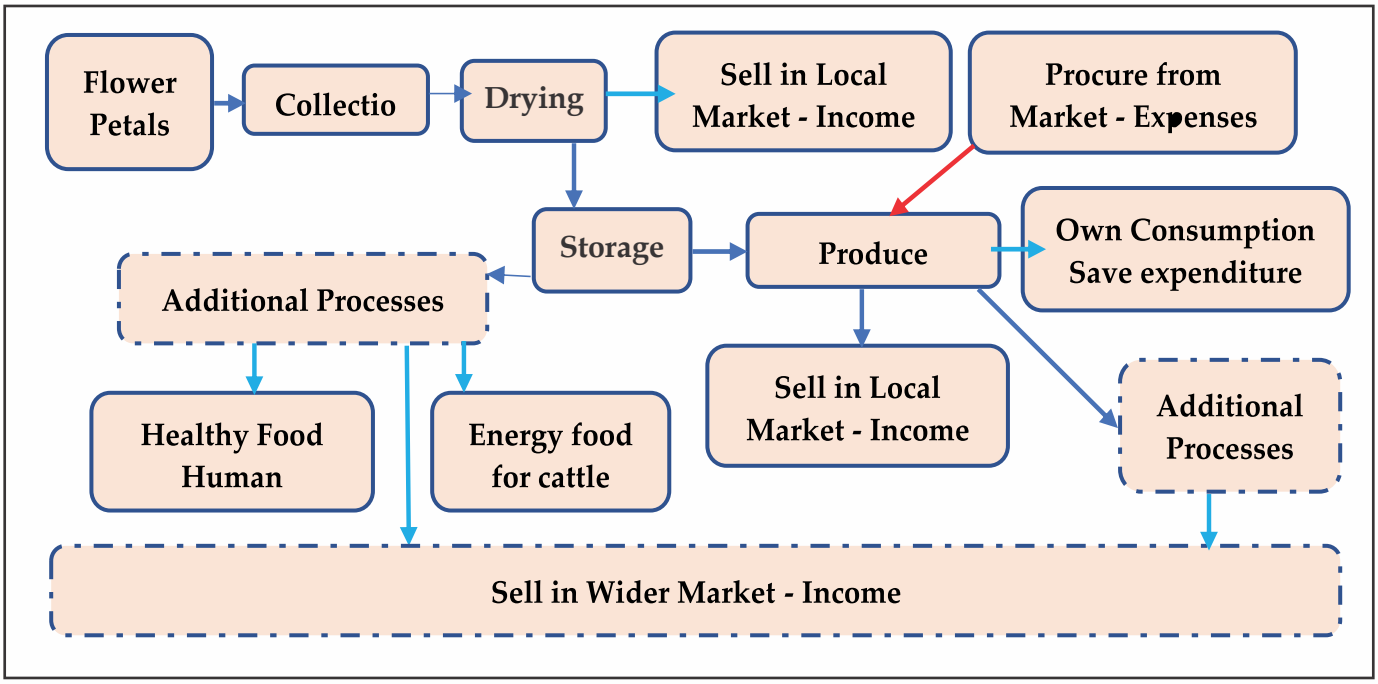


Figure 15 Existing and Potential Value-Chain for Mahua Flower in the area

The crushed leftover matter then becomes a seedcake used as fertilizer. Both the flowers and the oil have long been used in traditional medicine as a cure for a myriad of ills. The oil is taken as a laxative and to cure piles, while the flowers in various forms are used for heart, bronchial and eye problems, to treat TB, asthma, blood diseases, tonsillitis and to get rid of parasitical internal worms. The bark is used to relieve itching, to heal wounds, fractures and snake bites. Both the flowers and the bark are believed to be aphrodisiacs. material and started procuring locally, particularly in case of perishables like fruits and vegetables such as mango, custard apple, papaya, tomatoes etc.

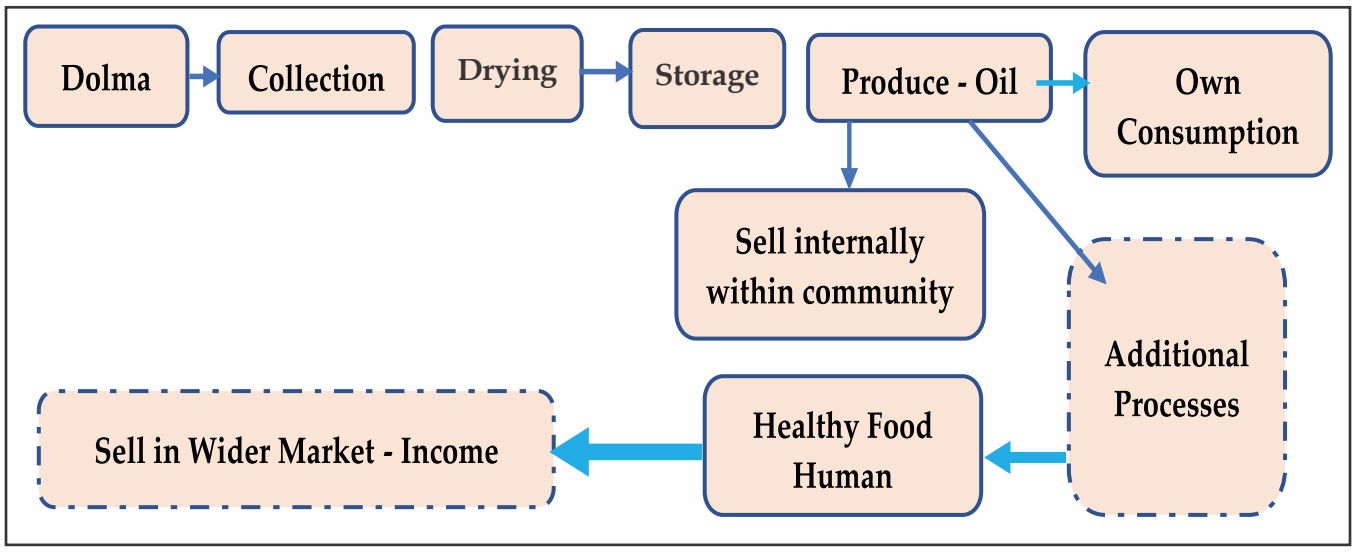


Figure 16 Existing and Potential Value-Chain for Mahua-Oil (Dolma)

11.2.1 Problems of Agricultural Marketing in Study Area:

Following are some of the main issues of agricultural marketing in the study area:

1. Lack of Storage Facility:

There are no proper storage or warehousing facilities for farmers in the villages where they can store their agricultural produce. Every year 15 to 30 percent of the agricultural products are damaged either by rats or rains due to the absence of proper storage facilities. Thus, the farmers are forced to sell their surplus produce just after harvests at a very low and un-remunerative price.

2. Distress Sale:

Most of the Indian farmers are very poor and thus have no capacity to wait for a better price of his produce in the absence of proper credit facilities. Farmers often go for even distress sale of their output to the village moneylenders-cum-traders at a very poor price.

3. Lack of Transportation:

In the absence of proper road transportation facilities in rural areas, Indian farmers cannot reach nearby mandis to sell their produce at a fair price. Thus, they prefer to sell their produce at the village markets itself.

4. Unfavorable Mandis:

There are two local mandis at Ghatol (10-25 Km) and Peepalkhunt (6-15 Km) and district level mandis at Banswara (25-35 Km) and Pratapgarh (35-45 Km). The operations and condition of the mandis are also not at all favorable to the farmers, particularly to small and marginal indigenous farmers. In the mandis, the farmers have to wait for disposing of their products for which there is no storage facilities. Thus, the farmers will have to take help of the middleman (Dalal) who take away a major share of the profit, and finalizes the deal either in his favour or in favour of arhatiya (wholesalers) which is average 30% varying between 20-25% for food grains to 30-38% for fruits and vegetables reflected by farmers and key informants.

5. Intermediaries:

A large number of intermediaries exist between the cultivator and the consumer. All these deals claim a good amount of margin and thus reduce the returns to the cultivators. These days a large number of middlemen have started visiting a local community in search of products.

6. Unregulated Market's:

There isa huge number of unregulated markets which adopt various malpractices. Prevalence of false weights and measures and lack of grading and standardization of products in village markets in India are always going against the interest of ignorant, small and poor farmers.

7. Lack of Market Intelligence:

There is a complete absence of market intelligence or market information system in India. Indian farmers, particularly those living in remote regions like that of study area Peepalkhunt and Ghatol are not aware of the ruling prices of their produce prevailing in big markets. Thus, they have to accept any un-remunerative price for their produce as offered by traders or middlemen.

8. Lack of Organization:

There is a lack of collective organization from the part of farmers in the study area. A very small amount of marketable surplus is being brought to the markets by a huge number of small farmers leading to a high transportation cost. Most farmers do not know about the whole system of marketing themselves, so they are not able to bargain better with the buyers, mostly traders in this case, who are very shrewd and well informed."

9. Lack of Grading:

Small and Marginal farmers in study area farmers do not give importance to the grading of their produce. They hesitate to separate the qualitatively good crops from bad crops. Therefore, they fail to fetch a good price of their quality product.

10. Lack of Institutional Finance:

In the absence of adequate institutional finance, Indian farmers have to come under the clutches of traders and moneylenders for taking a loan. After harvest, they have to sell their products to those moneylenders at unfavorable terms.

11. Unfavorable Conditions:

Farmers are marketing their product under adverse circumstances. A huge number of small and marginal farmers are forced by the rich farmers, traders and moneylenders to fall into their trap to go for distress sale of their produce by involving them into a vicious circle of indebtedness. All these worsen the income distribution pattern of the village economy of the country.

12 The action to enhance farmer's share in Agriculture Value Chain

Following are the specific action points to improve upon share of farmers particularly small and marginal indigenous farmers in value chain of agriculture and allied products.

1. A smooth supply of inputs is the basic condition for undertaking any productive activity on a sustained basis. However, the study has clearly reflected poor accessibility and availability of the inputs which affects the production and growth and development of the sector. Often the exploitation by middlemen in terms of charging a higher cost to the farmer increases the production cost, therefore it is important to develop an effective system for timely delivery at a reasonable price.

2. The study brought out that majority of the farmers in the area do not access or avail services of different institutions, mainly because of inefficiency and ineffective as against expected role. Thus, it is important to work towards building up farmer's association who can ask for their rights collectively and can work towards building better communication and coordination among institutions at a different level. So that different institutions start functioning helping producers for a bargain in the open market as they lack knowledge, information, skill, and capacity to deal with the

competition and challenges of the market. It becomes urgent for the development stakeholders like VAAGDHARA to advocate for policy environment and work with government departments to activate schemes and programmes.

3. The price builds up as shown in table-8 shows that how much producer gets and at what price retailer sells the product to the consumer. This is also a play of market intelligence, which is often neglected among the poor rural producers, as a result growers sell their produce in the village and nearby areas without paying much attention to the market price, the benefit of this is taken by trader as they have full knowledge about the prevailing and purchase the product at much lower price.

4. Farmers need to implement improved post-harvest handling practices for different crops both crops. Therefore, farmers need to better understand the opportunities for improved post-harvest handling. Participatory and action-oriented training models shall be employed to demonstrate farmers on appropriate practices to reduce post-harvest losses and maintain a quality crop.

5. Create platforms for stakeholder interactions composed of the key VCA through which issues of supply (quantity/ volume), quality and prices of various products can be addressed. Formation and sustainability of producer organizations (and cooperatives) should be facilitated.

6. There is need for increased access to extension and advisory services, credit, collective marketing and getting better prices.

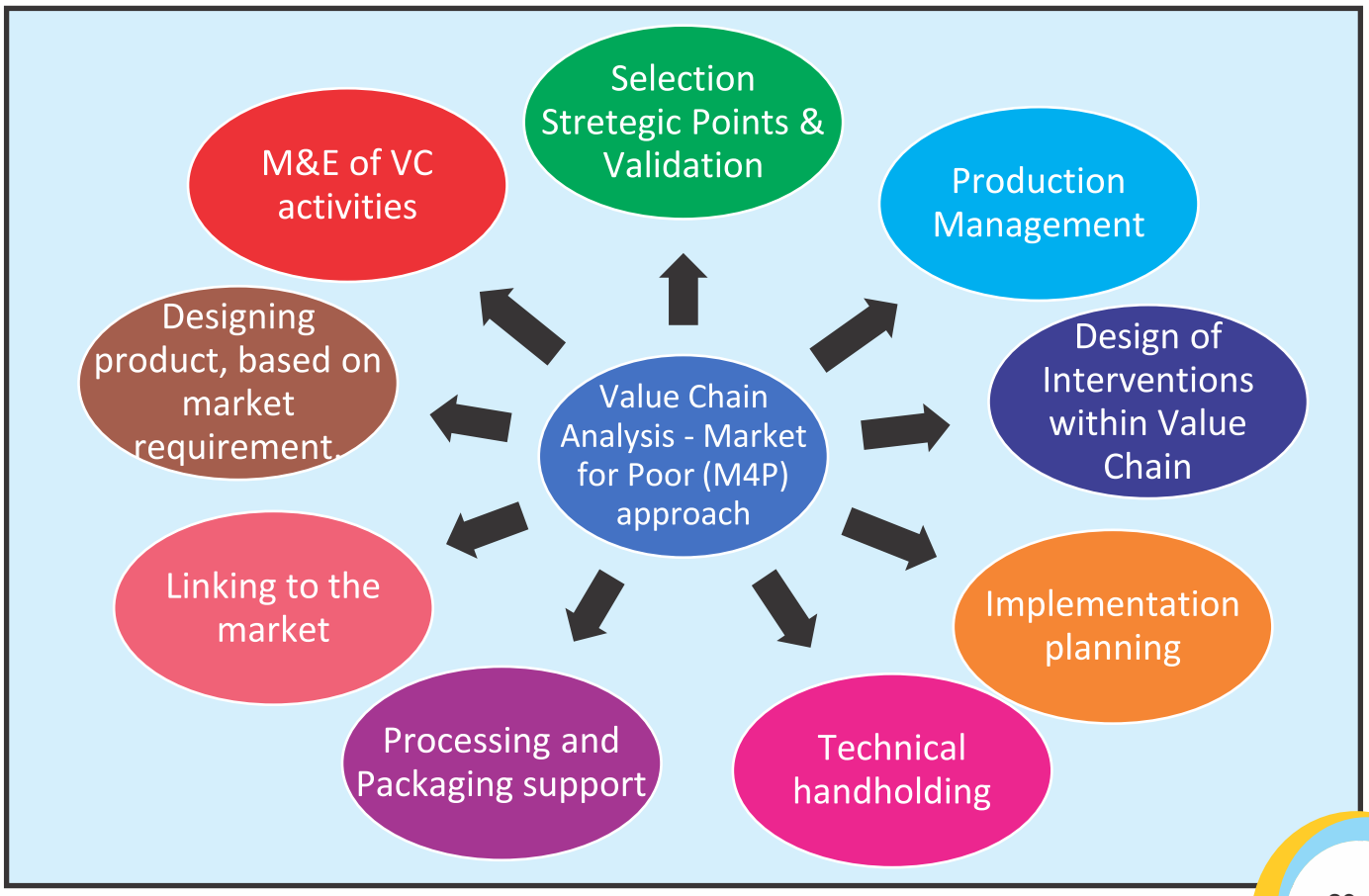


Figure 17 Value Chain Analysis – Market for Poor (M4P)

7. Popularize the improved varieties for various multipurpose plants among the value chain actors to give them an opportunity to select among the many available, what is best for them and for their customers.

8. Mahua, Tamarind, Temru, and Mango production needs a dedicated action plan in Southern Rajasthan, focused on providing improved backward-forward linkage including seedling, specific management advice and postharvest handling recommendations specific to the region and the demands of the market.

13 Project Interventions and potential market ecosystem

Following interventions in the planned project of VAAGDHARA - KKS have direct bearing on strengthening participation of small and marginal farmers within the overall value-chain of agriculture and allied items.

13.1 Multipurpose agroforestry plantation:

In the project area, most of the poor families do possess some lands which are undulating and not suitable for cultivation purpose Seventy-five hundred families will be provided support for adopting agroforestry in 15 ha (0.2 ha-one bigha) each. Support will be for bund-formation 240 metres (140 1st year & 100 metres in 2nd year); plantation and post-plantation management (40+20 plants). There is an urgent need to revive and improvise the whole value-chain of local fruits including mango, timru, mulberry, ber, guava, jamun, etc. Thus, plants can be selected from tree cotton, silk-cotton, subabul, keekar, Mahua, moringa, castor, Ramphal, mango, mulberry etc.

Besides, during the study community reflected that in the area there are many varieties of Mango found locally, some of which are of very good quality, but present production, particularly of mango, is characterized by low-tech, traditionally grown fruits. This demands for interventions at all level starting from upgraded technology, quality produce, better yield, input supply, fertilizer and pest control.

13.2 Establishing Nutrition Garden

One of the key intervention points in the study area is establishing family level nutrition garden so, as to provide nutrition diversity within study area itself. As part of SIFS training, each family will get trained for components of SIFS and one among them is about what is malnutrition and how to link agriculture to address the problem of malnutrition. In this each family will get support for land-development and protection arrangements, seed seedlings and minor agriculture implements. Ultimately it will reduce dependency on outside. This intervention is focussed to ensure twelve months supply of nutritive green vegetables for these families. It is expected that this intervention might provide the participating families with some surplus production of such vegetables. **Therefore, it is important to guide these families to evolve some institutional mechanism which helps them participate within the value-chain of vegetable at the direct sale and primary processing for drying (*Sukamani*) and marketing (selling out to wider market) through own institution.**

13.3 Establishment of backyard poultry

The tribal families in the tribal junction, particularly within the study area is known for good quality "country chicken." The project community expressed that "country chicken," nowadays fetch an amount of Rs.800 to 1200 depending on weight. Their availability has reduced, very few families now produce chicken. Unfortunately, lack of good quality breed, proper housing, vaccination, timely treatment and application of preventive measures. Therefore, a backyard enterprise which can bring them with good income is not able to yield proper income for these families. Considering this project as

planned that some of the poorest families will be supported for a back-yard chicken unit with 15 chicks, cage development (protecting against natural pray) and learning kit for do-it-yourself mode. The project support and approach will help the community to follow group-based insurance, vaccination, and local level health services in poultry birds resulting in a reduction in mortality by 80-85% to 25-30%. This itself is the largest gain for S & M families. With the focus on VCA, VAAGDHARA would have to intervene own complete process focusing on hatchery, mother unit, egg-marketing, local-level vaccination services, proper-housing, and health services. This intervention also demands a well-thought marketing strategy so that they are able to participate further higher within the poultry value-chain and able to negotiate better returns for them.

14 Robust Agri Value Chain – The Way Forward

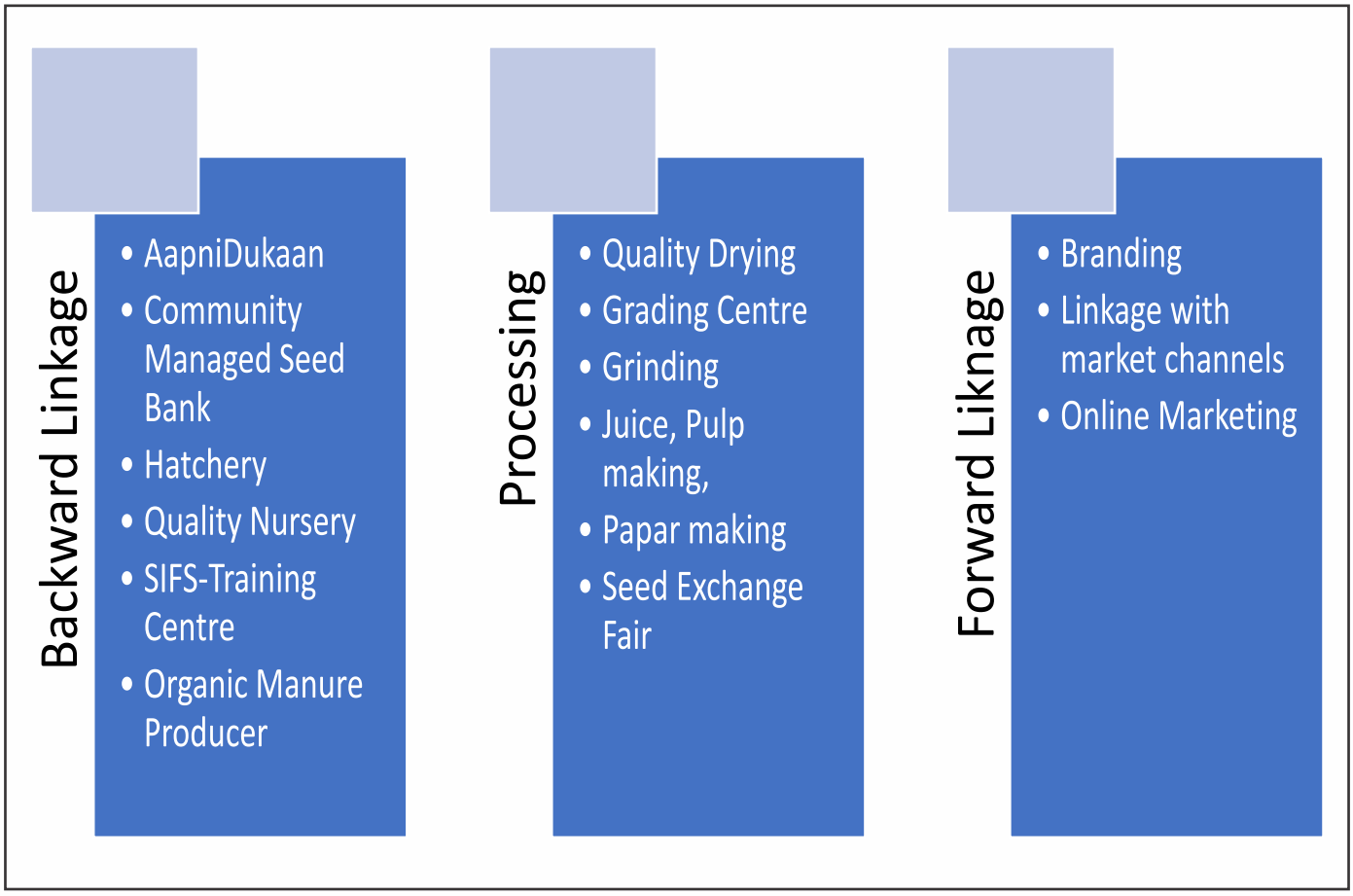
The VCA study aim was the generation of ideas for upgrading the value chains in South Rajasthan and to enable the learning for future reference to evolving a long-term program and various projects planning. In addition, this report is not only aiming as a reference for the participating communities only but is also meant to be a useful resource for other stakeholders to work for the revival of indigenous, traditional and tree-based livelihoods in the resource reach tribal regions and consider options for interventions. Stakeholders in the sector can then prioritize from the list of potential beneficial actions according to their individual capabilities and/or priorities. This VCA report is thus intended to stimulate further actions and discussions in the sector and also strategic plan for the VAAGDHARA and another stakeholder who plans to improve the livelihood of small and marginal farm holder in South Rajasthan and adjoining regions. VAAGDHARA identified various issues but the most important ones are issues regarding depletion of soil fertility (unsustainable farming methods), ensuring water availability and the need for better direct links between small farmers and processors. Some other examples from the region are Maize, Barley, Mal, Kaang, Kangani, etc. those have multiple ends uses, such as for maize porridge, flour, snacks, couscous, and other products for human consumption; inputs for beer production; and feed for poultry and animals. However, yields of these grains have increased only slightly and the sales of the grains to markets other than animal feed face obstacles in the value chains. This analysis underscores the importance of cereal growers and breeders recognizing that managing for food quality can increase their access to more markets, within the value chains, for example in Uganda, a brewery strengthened the sorghum value chain by offering farmers production contracts with guaranteed prices along with quality requirements, which led many more farmers to grow the grain.

To generate the livelihood option through an effective value chain in fruit production from the entry point to the end product, it is important to have an efficient system that supports all the phase in the value chain. To have a dynamic market where buyer's get good quality products at an affordable price. It is important to enhance market functioning by bringing all stakeholders together, making an effective chain, making them understand the demand of the market and possible profits for them. In order to develop the sector, it is important to develop cooperation and network between farmers and among all the stakeholders in the value chain. There are multiple problems which are common among the farmers. The best way to resolve these problems is by organizing them together and allow them to work together to overcome those by developing a collective system. The collective may work toward identifying problems and solving them through negotiation, bargaining at a different level to develop the sector. Moreover, in the present study it has been observed

that there is a lack of government support in the development of the sector at all the level. So, efforts can be made to establish a good relationship between governments and the stakeholders through dialogue, discussion on their sector, difficulties they face and resources they require to resolve the problems.

15 Conclusion

The situation in entire south Rajasthan and adjoining states demands to *"needle"* the various factors into a single thread that would provide end-to-end solutions for efficient market and better price discovery for producer, processor and consumer and develop efficient "Agri Value Chains", which may ultimately create a "hunger-free & properly nourished" society.Growth and development of agricultural value chains for local and external markets can be considered as a powerful tool for poverty reduction and to fight against the challenge of food-security in for this underprivileged community.



Such regions have higher potential for value addition mainly in traditional vegetables, fruits, forgotten crops, forest foods, tree-based produces, etc. rather than conventional crops, and if access is made available to processing, marketing, and distribution, which could enhance the value of the final products. Fueled by these new strategic directions, there is significant demand by value chain actors for technical assistance, improved production technologies, business development services and linkages to markets along value chains. It is important to pursue market-oriented agricultural development strategy to increase agricultural

production and improve the livelihoods of small holders. An approach to development which puts at the center the interrelatedness of actors in the value chain who – separated by time and space – gradually add value to products and services as they pass from one link in the chain to the next. While designing value chain development activities VAAGDHARA can plans to take the following steps of the project cycle:

VAAGDHARA and JKSK can partner to establish a joint Value Chain Cell (VCC) to strengthen the value chain perspective in its SIFS program. A road-map can be prepared to guide the functioning of the VCC team, which in-tern can help farmers groups in planning and implementing value chains targeted to specific commodities such as Palash-full, Mahua, Maize, Turmeric, etc., through different partnerships. New projects can be envisaged to take up some pilot value chains and livelihood activities with different farmer groups

- **JKSK can also plan to helpMangarh Producer Organization, for establishing a country poultry value chain and support these 5000 farmers involve in back-yard poultry. A detailed business plan needs to be worked out for MPO including** extension advisory and input services to the farmers as a complete package, which includes general farm management practices and specific management practices related to chicks, feed, and medication.
- **Janjatiya Krishi Swaraj Kendra – Farmers' Producer Company partnership for better services to farmers in the area**
- JKSK along with some thematic experts need to explore the possibility of creating SMEs in the Agri and allied value chain in the SIFS program. It aims to enable at least 100000 farmers to adopt technologies to improve their crop yields with a complementary component on scaling out (under design) to boost agricultural production and reduce rural poverty within the next ten years.
- JKSK can plan to set up extension center named Apani-Dukaan at cluster level in order to deliver affordable farmers' services (such as Seed, fertilizers, ICT based crop advisory, customized crop reminder calls, crop monitoring, market information, and linkage, etc. at their doorstep). The will enable farmers to get access to all type of information and *S*achchi-Khe*ti* related services.
- There is a need for conducting detailed study to adapt value-chain approach in specific items that are produced in the area in abundance such as ***Maize, Rice, Palash full, Aam, Jau, and Mahua,*** *etc. VAAGDHARA need* to work for undertaking detailed business plan for overall development of the area while creating livelihood improvement opportunity for small and marginal farmers in the area.
- It can include a preparatory and intervention phase will have requirements like core implementation & capacity building support, technical support for both backward (management, harvesting, storage) and forward (processing, packaging, marketing) processes, institutional development support, convergence facilitation, etc., a mapping of potential agencies would also be undertaken.\
- To start with, VAAGDHARA may initiate following actions at different level to adapt value-chain approach within SIFS.

Community Preparedness	• Organising Mango Festival • Initiate discussion on value-chain approach • Team Capacity building on Value Chain approach
Production Enhancement	• Soil and Water Conservation work; SALT, land leveling, bunding, Thavla • Agroforestry, horticulture, Nutrition Garden • Mango, Lemon, Guava - plantation campaign
Household Level Processing	• Quality Drying of items like green leafy vegetables, palash flowers etc. • Sorting, grading & packaging • Local level grinding, oil-press etc.
Market Linkages for Savings in Input	• Seed Processing and Seed Bank • Smart Farmers Enterprises - Biocompost etc. • Collective procuring and sharing of implements
Market Linkage for better Income	• Local level procurement and linkage with wider organic market for items like Jau, Gehu, Chana, Sarson, Rai, Amchur, Mahua etc. • Branding and online sales



Shop of Fenni Bhai - Mahudikheda

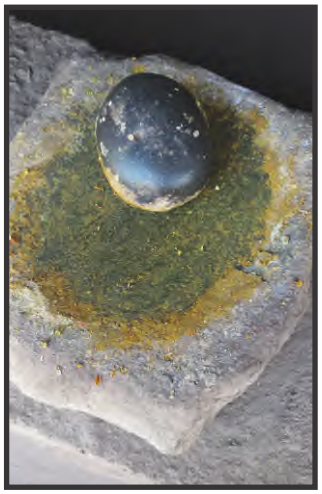
Supply Van for input chain (Packaged food)

Process of Maize Grain Removing

Drying of Wheat

Turmeric Drying

Wooden Oil-Press for Mahua Oil



Spice - Grinding Tool

Drying of Mahua Petals

VAAGDHARA

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