River Basin Investment Plan

(Dodhara Chandani & Beldandi Municipality)

Prepared by
Green Zone Eco Pvt. Kanchanpur, Nepal

GREEN ZONE ECO Pvt. Ltd.

National Environment and Equity Development Society NEEDS NEPAL Together for Development

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Section 1: Background

1.1 Introduction

Beldadi Rural municipality, located in Kanchanpur District of Mahakali Zone under the Far Western Province of Nepal, is one of the 753 local levels formed across the country as per the decision of the Government of Nepal dated 2011/12.]. This rural municipality, located in the southern part of Kanchanpur district is formed by integrating nine wards (1 to 9) of the former Beldandi Village Development Committee, three wards (7,8,9) of former Ratauli Bichuwa Comettee and all wards i.e. all eleven wards of former Beldandi Municipality. This Rural municipality is located at an altitude of 280 meters to 800 meters above sea level and have 5 wards. It is located at 27 km southeast of the district headquarter: Bhimdattanagar. To the north of this rural municipality is Shuklaphata Wildlife Sanctuary, to the south is Pilibhit of Uttar Pradesh-India, to the east is Belauri Municipality and to the west is Shuklaphanta National Park. Mahendanagar Bazaar of Bhimdatta Municipality is the nearest from this Rural municipality. The surface area of this rural municipality is mostly flat terrain. This village municipality has its own kind of religious, political, social significance and characteristics. The village has a mixed population of indigenous Tharu community and people of various castes, religions and castes who have migrated from the hills having the population density of 1050.25.
Dodhara Chadni municipality lies at Kanchanpur district in the Sudurpaschim Province of Nepal. The municipality has been established by incorporating two former Chadni and Dodhara village development comitte across the Mahakali River in Nepal. As per the decision of the Government of Nepal on 2071/09/28, the name of this municipality has been changed to Dodhara Chadni Municipality and 10 wards have been established. It has an area of 56.84 sq km and is bounded on the northwest and south by India and on the east by Bhimdatta Municipality and Shukphata National Park. Agribusiness has the largest share in average family income

As 65% of the total population of Nepal is dependent on agriculture, agricultural production occupies a significant part of the GDP. In order to make the nation self-reliant by increasing production on the basis of specialization and commercialization of agriculture, establishment of agro-industry, import reduction and substitution, commercial farming is being expanded by conducting programs such as one village one product, pocket zones, block, zone, super zone. Agriculture without policy and prosperous Nepal without agriculture cannot be imagined. Therefore, it is necessary for the government to formulate various suitable agricultural policies required for the commercialization of agriculture. In the context of increasing trade deficit of Nepal with imported agricultural products, it is necessary to move forward with the goal of supporting the state in self-reliance by commercializing agricultural commodities and creating employment opportunities in the country.

1.2 Rationale of pocket sector development

In order to make the nation self-reliant by increasing production on the basis of specialization and commercialization of agriculture, establishment of agro-industry, reduction of imports and substitution, it is necessary to cultivate commercially by adopting the concept of one product, one pocket area. Agriculture without policy and prosperous Nepal without agriculture cannot be imagined. Therefore, it is necessary for the local government to create the necessary business model for the commercialization of agriculture and animal husbandry Nepal's agricultural system is only a means of subsistence. In order to increase the income of farmers by creating employment at the local level, it is necessary to end the scattered farming system and integrate agriculture and animal husbandry according to the concept of ***Chaklabandi***. It is necessary to expand the business by selecting crops based on the texture and texture of the land. It is necessary to adopt the concept of one ward one product in order to make the agribusiness sustainable and entrepreneurial by analyzing the benefits and costs of the selected business.

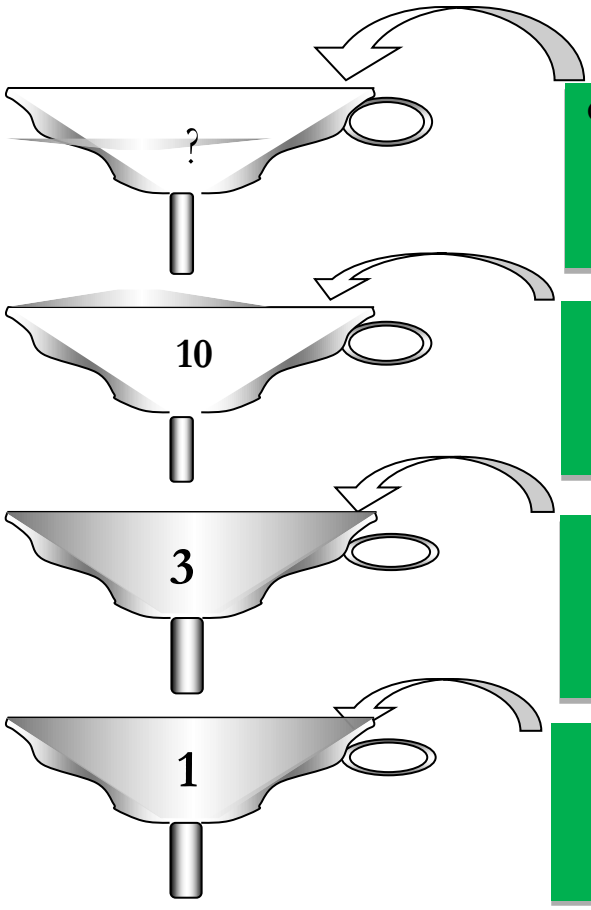
1.3 Objectives of the study

- Pocket sector of agriculture and animal husbandry will be developed on the basis of business potential
- Investment plan of potential and selected items in the riparian area will be made and implemented.
- To prepare business model with identification and role of value chain characters for sustainable development of business.

1.4 Procedures and grounds to identify investment plan

Business selection method and process

Information from local level has been collected for the potential of agriculture and livestock business in Beldandi Rural municipality. A list of occupations that have been learned from brainstorming, observation, and advice from others when choosing a business at the municipal level has been prepared. The 10 potential businesses were selected on the basis of desire and interest through a large and extensive selection process. Based on market technology, cost-benefit index, etc., the three most potential businesses have been identified through a careful selection process of the business and an investment plan of one of the three low-risk businesses has been prepared.



Check lists prepare through the Brin storm, observation. potential business listed as per another informant.

10 business listed out through the macro level selection indicator

3 business selection through the micro level business selection process and indicator.

Final business selection based on Market survey, and investment plan

The major basis of business selection

1) Market 2) Technology 3) Raw material

4) Human resources 5) Infrastructure 6) Investment Capacity

7) Government policy 8) Expansion and employment potential

9) Consumer desire 10) Land texture

Section 2: Potential Business and Pocket Determination

2.1 Beldandi Rural municipality

2.1.1 Potential occupations

Agribusiness	Livestock business
Banana Cultivation, Herbal Cultivation, Bamboo Cultivation, Ginger Cultivation, Turmeric Cultivation, Sugar Cane Cultivation, Chaite Paddy, mustard cultivation, Vegetable Cultivation, Seed Production, Chili Cultivation, Sesame Cultivation, Soybean Cultivation, , Potato Cultivation	Fisheries, Poultry, Goat farming, Pig farming, Dairy Farming, Quail farming, duck Farming, Sheep farming , Fisheries using Bio flock technology

2.1.2 Potential Pocket Areas

Ward Number	Pocket Area	Possible Item	Priority	Possibilities
A) agribusiness				
❖ ward no 1 and 2	Oil production pocket	Sabin and Mustard	P 1	❖ sandy and Loam Soil. ❖ High land no water reserved ❖ Low risk of wild animal ❖ High market demand
❖ Ward no 3,4,5	Sugarcane	Sugarcane	P-1	❖ Sandy lumpy soil ❖ Best product for river side ❖ Low risk for wild animal ❖ High demand
	Vegetable pocket	Potato	P-2	❖ High demand and sales in local market ❖ Income can be taken in a short period
Ward no 1 & 5	Food crop pockets	Off season paddy	P-1	❖ wetland ❖ Irrigation system ❖ Two crops can be taken
B) Livestock				
Ward Number	**Pocket Area**	**Possible Item**	**Priority**	**Possibilities**
Ward no 1, Ratanpur ward no 2 dhakaniya	Fish pocket	fish farming on pond	P-1	❖ Simsar /wetland land ❖ water dumping area ❖ pond located area High demand
Current ward number 1,2,3,5	Meat pocket area	Goats, Poultry, pig	first	❖ Pasture area ❖ Special availability High demand in the market
	Milk pocket	Buffalo rearing	second	❖ Pasture area ❖ Special availability ❖ High demand in the market No special skills required
Ratanpur of Ward No. 1 and Dhakaniya of Ward No. 2	Fish pocket	Fishing in the pond	first	❖ Wetland area ❖ Water stagnation ❖ Lake area High demand
Current ward number 1,2,3,5	Meat pocket area	Goats, Poultry, pig	first	❖ Pasture area ❖ Special availability High demand in the market
	Milk pocket	Buffalo rearing	second	❖ Pasture area ❖ Special availability ❖ High demand in the market No special skills required

2.1.3 The concept of pocket development in agriculture

It is necessary for the local government to create the necessary business model for the commercialization of agriculture and animal husbandry. In order to increase the income of farmers by creating employment at the local level, it is necessary to end the scattered farming system and integrate the agriculture and animal husbandry according to the concept of Chaklabandi. It is necessary to expand the business by selecting crops based on the type and texture of the land. The development of pockets is necessary for the selection of goods by analyzing the benefits and costs of the selected business and adopting the concept of one ward one product to make agribusiness sustainable and entrepreneurial. In order to develop Beldandi Rural Municipality of Kanchanpur as an agricultural pocket, the following items have been prioritized.

2.1.4 Macro selection of potential business

Business should not be done on the basis of surface observation, hearing or imitation. There is a risk of drowning the investment when investing in the business without having proper study. Therefore, you should only invest by choosing a business. In the first stage, while choosing a business, you have to choose the kind of business that can be invested easily, supported by the family and the kind of business that uses the skills that you have.

Basics of business choice	**Potential Business**									
	Sugarcane	River bad farming	banana	Mustard	Lentils	Potato	Bamboo	Chili	Onion	Turmeric
Support from family	5	4	4	5	5	5	4	5	5	4
To be able to Investment/ capacity	5	4	3	5	4	3	1	4	4	4
Can be handled by your skill	5	4	4	5	5	4	4	4	4	4
Total marks	15	13	11	15	14	12	9	13	13	12

Very Weak = 1 weak = 2 Satisfactory= 3 Good= 4 Very good = 5

2.1.5 Micro selection process of business

Since the goods produced in the business are produced for the customer, it is necessary to produce the goods according to the desire and demand of the customer. Market demand and customer desire may change so it is necessary to modify and diversify the product over time. The product should be produced by studying the market demand. The choice of business should be made keeping in mind the following indicators.

Business	Basis of selection								Total points
	Market	Raw material	Technology	Skill	Investment	Government policy	Infrastructure	Soil Quality	
Mustard	5	5	4	4	5	4	4	4	35
Lentils	5	5	4	4	5	4	4	4	35
Sugarcane	5	5	4	4	4	5	5	4	36
Vegetable (Riverside farming)	3	4	4	5	4	4	4	5	33
Chili	4	4	5	4	4	4	4	3	32

Very Weak = 1 weak = 2 Satisfactory= 3 Good= 4 Very good = 5

2.2 Dodhara Chandani Municipality

2.2.1 Potential occupations

Agriculture business	Livestock business
Banana Cultivation, Herbal Cultivation, Bamboo Cultivation, Ginger Cultivation, Turmeric Cultivation, Sugarcane Cultivation, Chaite Paddy, Mustard, Vegetable Cultivation, Food Grain Seed Production, Chili Cultivation, Sesame Cultivation, Soybean Cultivation, Bagar Cultivation, Potato Cultivation, Pointed guard Cultivation, Litchi Mango, lemon, corn, lentils	Fisheries, local poultry farming, goat farming, buffalo farming, BATAI farming, Duck farming, bee, turkey

2.2.2 Development of pocket of agribusiness

Possible ward	pocket area	Possible item	prioritization	Possible bases
Ward number 1,2,3,4,5	Grain crop	Wheat seed production	The first	❖ Sandy loam soil ❖ Water freezing ❖ High demand ❖ Irrigation system
	Vegetable pocket	Vegetable, Pointed Gourd	The second	
Ward number 6,7	Vegetables	Pointed Gourd farming	The second	
Ward number 8,9,10	Sugarcane production pocket	Sugarcane	The first	❖ Low risk crops in riverine areas

2.2.3 Macro selection of potential business

Business should not be done on the basis of surface observation, hearing or imitation. There is a risk of drowning the investment when investing in the business without having proper study. Therefore, you should only invest by choosing a business. In the first stage, while choosing a business, you have to choose the kind of business that can be invested easily, supported by the family and the kind of business that uses the skills that you have.

Basics of business choice	**Business name**									
	Sugarcane	Pointed Gourd	Banana	Paddy	Lentils	Potato	Groundnut	Sweet potato	Riverine farming	Turmeric
Support from family	5	5	5	4	4	4	4	4	4	4
To be able to Investment/capacity	5	4	4	4	3	3	3	2	3	3
Can be handled by your skill	4	4	3	4	4	4	3	4	3	4
Total Marks	14	13		11	11	11	10	10	10	11

Very Weak = 1 weak = 2 Satisfactory= 3 Good= 4 Very good = 5

2.2.4 Micro selection process of business

Since the goods produced in the business are produced for the customer, it is necessary to produce the goods according to the desire and demand of the customer. Market demand and customer desire may change so it is necessary to modify and diversify the product over time. The product should be produced by studying the market demand. The choice of business should be made keeping in mind the following indicators.

Business name	Basis of selection								Total Marks
	Market	Raw material	Market	Raw material	Market	Raw material	Market	Raw material	
Sugarcane	4	5	5	4	3	5	3	5	34
Banana	3	3	3	4	3	3	4	4	27
Pointed gourd	4	5	4	4	4	5	4	4	34
Turmeric	3	4	4	5	4	4	3	4	31
Chaite Paddy	4	4	4	4	3	5	3	4	31

Very Weak = 1 weak = 2 Satisfactory= 3 Good= 4 Very good = 5

Section 3: SWOT Analysis of Potential Agricultural Yield

A. Sugarcane Farming	
Strengths	**Weakness**
❖ Less affected by flood ❖ Less prevalence of wild animals than other crops ❖ Once planted, it can be harvested up to three times ❖ Works as biological embankment ❖ No problem on sales ❖ High returns ❖ Free technical assistance from sugar mills ❖ Creates employment ❖ The insurance policy has been prepared and the crop can be insured for risk reduction.	❖ Not receiving timely payment from sugar mill ❖ The first year should be a lump sum investment. ❖ Mill monopoly in the market ❖ It takes 1 year to get the product
Opportunities	**challenges**
❖ 2 sugar mills established ❖ To make good use of unsuitable land for kicking other crops along the riverbank. ❖ Easy availability of labors.	❖ Possibility of habitat for wild animals ❖ To compete with Indian products ❖ Fear of fire
B. Mustard Farming	
Strengths	**Weakness**
❖ There is high demand in the market. ❖ Doing business with less time and less investment ❖ Doing business using simple skills and techniques ❖ Mustard oil to be used as medicine	❖ No cultivation in riverine areas ❖ Unable to do business on a large scale
Opportunities	**Challenges**
❖ Soil cultivation will improve soil quality ❖ Organic manure can be made ❖ To be helpful for the horticulture business.	❖ High risk from cold wave in rain ❖ Unprotected by wild animals ❖ Affected by normal floods.
C. Lentil Farming	
Strengths	**Weakness**
❖ There is high demand in the market. ❖ Doing business with less time and less investment. ❖ Doing business using simple skills and techniques.	❖ High risk from cold wave in rain ❖ Unprotected by wild animals ❖ Affected by normal floods.
Opportunities	**Challenges**
❖ Improves soil quality ❖ Can be cultivated in nominal irrigated areas.	❖ High risk from cold wave in rain ❖ Unprotected by wild animals ❖ Affected by normal floods.
Riverbed Farming	
Strengths	**Weakness**
❖ Make good use of wasted land	❖ increase the possibility of erosion.

❖ Can be cultivated in leisure time after other cultivation ❖ Income can be given in a short time ❖ Involved communities with no or less land can be involved	❖ You have to go from house to house to sell ❖ Bagar is not suitable for all farming as it is not available in all places. ❖ Unable to expand business due to limited space. ❖ There will be no long-term business as it depends on river.
Opportunities	**Challenges**
❖ Arable land is being turned into bogs day by day. ❖ It will reduce the incidence of diseases and insects.	❖ High risk of floods due to cultivation in Bagar ❖ Risk of wild animals ❖ Problems in marketing due to corona at harvest time. ❖ Outbreak of cold wave
D. Pointed gourd Farming	
Strengths	**Weakness**
❖ Production can be picked every week] ❖ Long time production from June to July ❖ Beneficial for health ❖ Improving soil quality ❖ Do not rot for a long time	❖ Difficult to identify plant species ❖ Cultivation should be done in proportion to males and females. ❖ No production in swamp fields.
Opportunities	**Challenges**
❖ There is high demand in Indian market. The Indian market is close. ❖ There is high demand in the market. ❖ It is considered to be very suitable for cultivation in Dodhara Chadni.	❖ As it rains at night, it will not bear fruit if it rains ❖ Snake outbreaks can occur
E. Paddy	
Strengths	**Weakness**
❖ Yield more than rain-fed paddy and also get better price ❖ grains is good for rice ❖ Grains do not breaks. ❖ High value of straw.	❖ Difficult to avoid quadrupeds ❖ More irrigation should be done.
❖ **Opportunities**	❖ **Challenges**
❖ Two crops of paddy can be harvested in a year ❖ Seasonal production ❖ There is provision of crop insurance in production	❖ Fear of rain while picking crops ❖ Flood probability ❖ High rainfall

Section 4: Stakeholders, market, value chain actors and roles

4.1 Role and Stakeholders in sugarcane farming

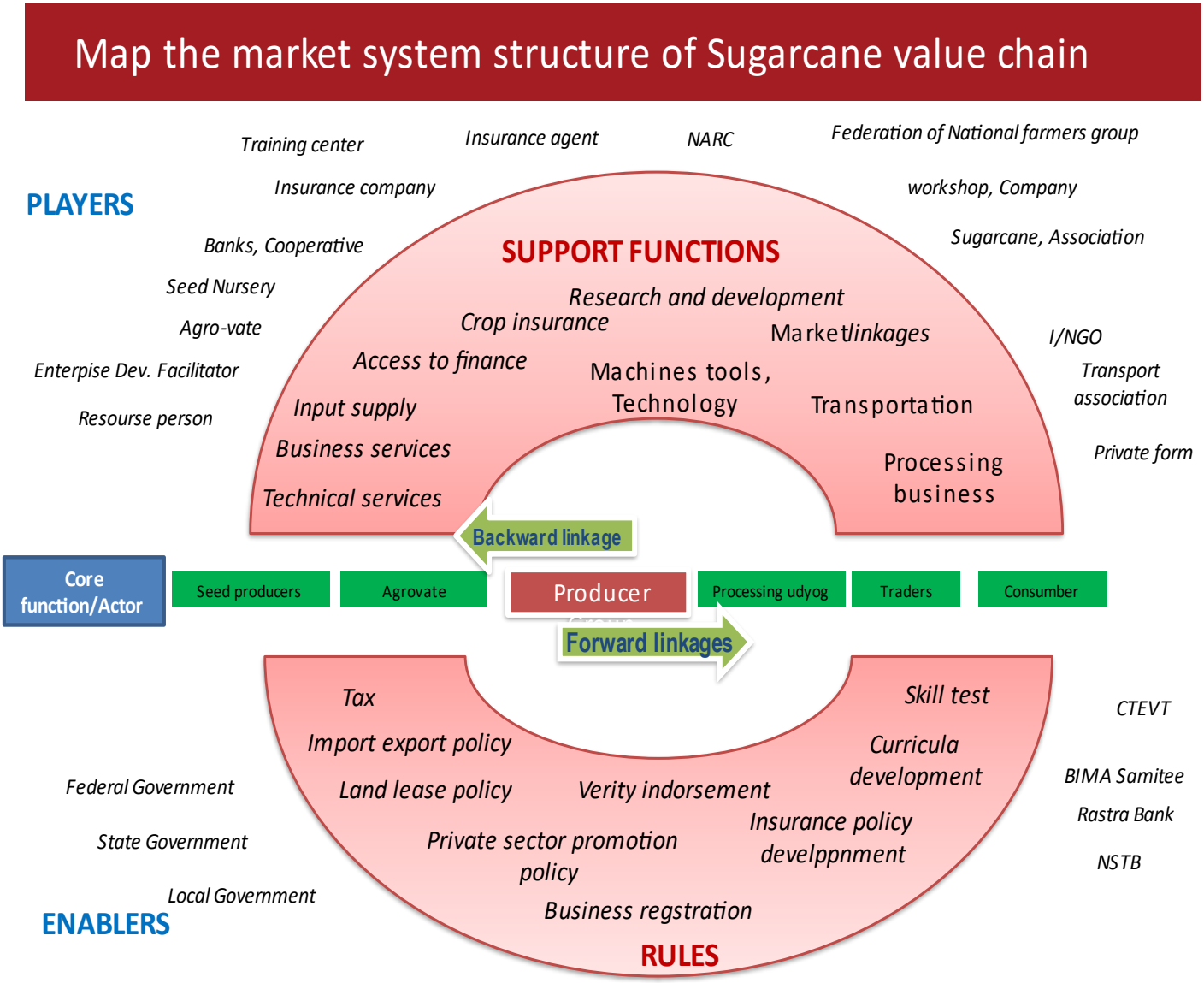
S. N	Stakeholder	Role
1	Federal Government	❖ Sugarcane support price should be fixed. ❖ Prices should be maintained on the basis of cost through coordination between producers and sugar mills. ❖ Strictly prevent unauthorized imports from India. ❖ Sugarcane species should also be listed
2	State Government	❖ Bring relief package to small farmers. ❖ New species of sugarcane need to be researched. ❖ Marketing needs to be facilitated ❖ To make a law of Chaklabandhi.
3	Local Government	❖ Pocket area should be determined. ❖ Sugarcane cultivation area should be assessed, and current sugarcane data should be collected. ❖ Making and implementing lease laws ❖ To make a law of intercession. ❖ Implement the concept of one product one cooperative. ❖ Bring relief package to small farmers.
4	Insurance Committee and Companies	❖ Insurance policy needs to be revised. ❖ Orientation of crop insurance. ❖ Insurance facilitators and appraisers should be developed from the sugarcane pocket area. ❖ To implement crop insurance effectively.
5	Sugarcane Traders Association	❖ To organize the farmers. ❖ Advocacy and lobbying for necessary policy rules. ❖ Business relation development among value chaiun actor ❖ To facilitate market management. ❖ To update sugarcane statistics
6	NGO	❖ Making and develop suitable models of sugarcane business. ❖ To orient the farmers by analyzing the benefits and costs. ❖ Learning should be made systematic and scientific. ❖ Facilitate advocacy and advocacy for necessary policy rules.
7	Production group	❖ Early variety sugarcane plantation ❖ To be done in coordination with sugarcane planting and harvest processing industry. ❖ Proper management of orchards. ❖ Work according to the advice of the technician ❖ Insuring sugarcane
8	Processing industry, sugar mill	❖ Distribute quality seeds. ❖ To provide technical assistance to farmers.

		❖ Use of interest card for sugarcane harvesting. ❖ To help maintain the price of sugarcane on the basis of cost. ❖ Discourage sugarcane coming to India and promote domestic production. ❖ Payment on time.
9	Financial institution	❖ Provide concessional agricultural loans. ❖ The project needs to be pledged.

4.2 Role and Stakeholders in Pointed gourd farming

S. N	Stakeholder	Role
1	State Government	❖ Bring relief package to small farmers. ❖ New species need to be researched. ❖ Marketing needs to be facilitated ❖ To make a law for Chakhlabandhi
2	Local government	❖ Pocket should be determined. ❖ Making and implementing lease laws ❖ To make a law of intercession. ❖ Implement the concept of one product one cooperative. ❖ Bring relief package to small farmers.
3	Insurance company	❖ Insurance policy needs to be prepared. ❖ Orientation of crop insurance. ❖ Insurance facilitators and appraisers should be developed from the pocket area. ❖ To implement crop insurance effectively.
4	NGO	❖ Making and exhibiting suitable models of business. ❖ To orient the farmers by analyzing the benefits and costs. ❖ Transfer and expand learning. ❖ Facilitate advocacy and advocacy for necessary policy rules.
5	Production group	❖ Proper management of orchards. ❖ Coordinate with market management committee and mandi. ❖ To act according to the advice of the technician. ❖ Crop insurance should be done.
6	Market Management Committee	❖ Assist in marketing. ❖ Promote the sale of indigenous products.
7	Financial institution	❖ Provide concessional agricultural loans. ❖ The project needs to be pledged.
8	Media	❖ Assist in the promotion. ❖ Broadcasting on the benefits to human health.

4.3 Market structure and value chain actors



Section 5: Investment Plan

5.1 Investment plan of Sugarcane

Investment plan summary				
1	Entrepreneurs Name			
2	Organization/form name			
3	Types of Business			
4	Address			
5	Product			
6	Target Market			
	Particular	first Year	Second Year	Third Year
8	Land uses	1	1	1
9	Production quintal	618	451	404
10	Total capital Rs	276058	140556	136519
s	Variable Cost	237258	140556	136519
v	Fix assets	38800	0	0
11	Annual seals Rs	335920	245480	219640
12	Annual Net Profit	83905	90167	68364
13	Per Quintal Profit Rs	408	344	375
14	Return on investment (ROI)	35	64	50
15	Brick even point (BEP)	15	14	18
16	Par Katta Investment	13803	7028	6826

5.2 Marketing Plan

Product: Sugarcane
Market: Sugar making processing factory, Beluri, Purnbash Municipality
Marketing strategy

5.2.1 Production Plan and Target

Particular	Farming Area	Unit	First year	Second Year	Third Year	Total
Early verity 238 Sugarcane	1	Quintal	650	475	425	1550
5 % damaged		Quintal	33	24	21	78
Harvest		Quintal	618	451	404	1473
Note: Early verity 238, 239,15023 Sugarcane more useful for sugar production. Per quintal 10 to 12 kg sugar production						

5.2.2 Fixed Assets

SN	Particulars	Unit	Quantity	Rate	Total Cost, NPR
1	Spade/grape hoe	Piece	5	700	3500
2	Sprayer	Piece	2	4500	9000
3	Sickle	Piece	15	500	7500
4	Toka	Piece	4	200	800
5	Water motor	Piece	1	18000	18000
	Total				**38800**

5.2.3 Depreciation Cost

SN	Particulars	Quantity	Rate	Total Cost, NPR	Total life (yrs)	Total depreciation
1	Spade/grape hoe	5	700	3500	7	500
2	Sprayer	2	4500	9000	3	3000
3	Sickle	15	500	7500	7	1071
4	Toka	4	200	800	7	114
5	Water Motor	1	18000	18000	7	2571
	Total			**38800**		**7257**

5.3 Expenditure Plan

5.3.1 Raw materials expanses, NPR

Sn	Particular	Per Bigha	Unit	Rate	First year	Second Year	Third Year	Total NPR
A	**Seed**	80	Quintal	544	43520	0	0	43520
B	**chemical fertilizers**				0			0
1	DAP	50	Kg	55	2750	0	0	2750
2	urea	125	Kg	22	2750	2750	2750	8250
3	MOP	50	Kg	40	2000	2000	2000	6000
4	Sugarcane special	10	Kg	200	2000	2000	2000	6000
5	Salfer	10	Kg	250	2500	2500	2500	7500
C	**pesticides**				0			0
1	Furadan	1	Kg	1200	1200	1200	1200	3600
2	fungicide	500	Gram	2	750	750	750	2250
3	Spray pesticide	1	Litter	1500	1500	1500	1500	4500
D	Vitamin (Alkara)	300	Gram	25	7500	7500	7500	22500
	Total				**66470**	**20200**	**20200**	**106870**

5.3.2 Human resource, in NPR

Sn	Particular Labor cost	Quantity	Unit	Rate	First year	Second Year	Third Year
1	Seed plantation	20	500	10000	0	0	10000
1	Seed prepare for plantation (Cutting)	20	500	10000	0	0	10000
2	weeding	5	400	2000	2000	2000	6000
3	Irrigation	6	500	3000	3000	3000	9000
4	Harvest	50	500	25000	25000	25000	75000
	Total			**50000**	**30000**	**30000**	**110000**

5.3.3 Other Expenses, in NPR

Sn	Particular	Unit	Qty	Rate	First year	Second Year	Third Year	Total NPR
					Total Rs	Total Rs	Total Rs	
A	Land Rent	Bigha	1	40000	40000	40000	40000	**120000**
B	Field digging			0	0	0	0	**0**
1	Hairo	Hour	2	1800	3600	0	0	**3600**
2	Rotavater	Hour	4	1800	7200	0	0	**7200**
3	Raja halo	Hour	1	2500	2500	0	0	**2500**
4	Plantation as trench method	Hour	1	3000	3000	0	0	**3000**
5	weeding as Trench method	Hour	2	3000	6000	6000	6000	**18000**
C	Transportation				0	0	0	**0**
1	Loading	Quintal	618	15	9263	6769	6056	**22088**
2	Transportation	Quinta	618	70	43225	31588	28263	**103075**
D	Others				0	0	0	**0**

1	Irrigation	Bigha	1	2000	2000	2000	2000	**6000**
2	Crop insurance	Bigha	1	4000	4000	4000	4000	**12000**
	Total				120788	90356	86319	297463

5.4 Financial Plan

5.4.1 Total cost, in NPR

SN	Particulars	First Year	Second Year	Third Year	Total Cost
		Total	Total	Total	
1	Fixed costs	38800	0	0	38800
2	Variable costs	237258	140556	136519	514333
a	Raw materials	66470	20200	20200	106870
b	Labor costs	50000	30000	30000	110000
c	Other costs	120788	90356	86319	297463
	Total	276058	140556	136519	553133

5.4.2 Per unit production Cost, in NPR

Sn	Particular	First Year	Second Year	Third Year	Total
1	Total Production cost	237258	140556	136519	514333
2	Total Production Quintal	618	451	404	1473
3	Per quintal Investment	**384**	**311**	**338**	**349**

	Particular	First Year	Second Year	Third Year
1	Per quintal Investment	384.22	311	338
2	Total depreciation	11.75	16.08	17.97
3	Bank interest	12.15	16.62	18.6

	Per Quintal investment Rs	**408.12**	**344.18**	**374.68**
	Per quintal Rs	**544**	**544**	**544**
	Per quintal Profit Rs	**135.88**	**199.82**	**169.32**

5.4.3 Sours of Investment, in NPR

SN	Particular	Total
1	Fix capital	38800
2	Variable Cost	237258
	Total capital	**276058**
3	Bank investment	150000
4	Investment	126058
5	Subsidy	0
	Interest rate	5
	Annual interest, NPR	**7500**

5.4.4 Income Projection, in NPR

SN	Particular	First Year	Second Year	Third Year	Total
1	Total Production quintal	618	451	404	1473
2	Selling price	544	544	544	544
3	**Total Income**	**335920**	**245480**	**219640**	**801040**

5.4.5 Profit and loss projection, in NPR

SN	Particular	First Year	Second Year	Third Year	Total
1	**Total Income**	**335920**	**245480**	**219640**	**801040**
2	**Variable cost in Rs.**	**237258**	**140556**	**136519**	**514333**
a	Raw materials	66470	20200	20200	106870
b	Labor cost	50000	30000	30000	110000
c	Other costs	120788	90356	86319	297463
3	**Total Grass Profit (1-2) Rs**	**98663**	**104924**	**83121**	**286708**
4	**Fixed cost**	**14757**	**14757**	**14757**	**44271**
a	Bank interest	7500	7500	7500	22500
b	Depreciation	7257	7257	7257	21771
	Net Profit Rs	**83905**	**90167**	**68364**	**242436**

5.4.6 Rate of return, in NPR

$$\text{Rate of return Ö} = \frac{\text{Net profit X 100}}{\text{Total investment}}$$

S.N.	Particulars	First year	Second year	Third year	Total, NPR
1	Net profit	83905	90167	68364	242436
2	Total investment	237258	140556	136519	514333
	Rate of return	35	64	50	47

5.4.7 Breakeven point, in NPR

$$\textbf{Breakeven point} = \frac{\textbf{Fixed cost x 100}}{\textbf{Total Income – variable cost}}$$

S.N.	Particulars	First lot	Second lot	Third lot	Total, NPR
1	**Breakeven point**	15	14	18	15

Section 6: Conclusion

Two to three times more than cereal crops can be earned from sugarcane farming. Disadvantage community members can farm sugarcane commercially by leasing land of School, temple and individuals and can have good return. The production of sugarcane is less in Nepal than its demand, so there in no problem of marketing. Processing udyog are established locally and local resource persons/technician of sugarcane are developed to support on sugarcane farming. According to this plan, farmers investment can be recovered if 15 percent of total sugarcane is sold in the first year. Since the rate of return is 47% which is very high, this business is profitable.

Section 7: Investment Plan of Pointed Gourd

7.1 Pointed gourd farming system

7.1.1 Introduction

- Perennial vegetable (climbers).
- Cultivated in the Terai/Plain region.
- Rich in protein (2%). Vitamin A and C, Calcium, Phosphorus and Iron are found abundantly.
- Useful for brain and heart disease patients.
- Easily digested and improve blood circulation.

7.1.2 Climate

- Damp and warm climate is needed.
- Pointed gourd can be cultivates in terai and inner terai where high rainfall, high temperature and damp climate found.

7.1.3 Soil

- Sandy loam soil having high organic matter**.**
- Light soil with good drainage facilities.
- Soil around the root region should get warm soon after the temperature increase.
- Sandy soil found in bank of river is best suited for its cultivation**.**

7.1.4 Plant morphology

- Perennial climbing plant gives yield for 4-5 years once cultivated.
- Remains dormant in autumn season and new bud formation occurs in spring season.
- Male and female plants are found separately.
- For a good fruiting (85-90) % female and (10-15) % male plants are needed.

7.1.5 Varieties

Sanu narsingha

- Small pointed white fruit.
- Vines small and speckled fruit round in shape.

- Higher productivity than other varieties. 70-100 kg can be produced in 1 week per kattha of land.

Kajala

- Fruits are big, long, white, pointed and round.
- Seed is pointed in forward and backward direction and about (6-7) cm in length.
- Production of (60-70) kg in 1 week per kattha.

7.1.6 Distinguishing features and management aspects

Male

- Vines of male plants are black, long and thick. leaves are big and dark green.
- No fruiting in the vines of male plant but flowering is seen.
- Flowers are long and dense.
- Flowering occurs from evening 7 pm to morning 6 am.
- Wilting of flowers occurs from morning 6 am to noon 12 pm.

Female

- Vines of female plants are small and speckled.
- Leaves are round and slightly pointed in the front.
- Distance from one leaf to another is 3-5 cm.
- Flowering and fruiting is seen in every leaf.

Planting date

From the old healthy plant cutting of 50 cm is done, round cut is given at one end and 2/3rd of the cutting is placed below the soil. Cutting is done between the first week of the Ashoj to second week of the Kartik. Cutting with root is done between magh 15 to Chaitra 15.

Seed rate

- 165-200 cutting/kattha.
- 5000-6000 cutting/hectare.

Land preparation

- Deep tillage for 2-3 times followed by leveling.
- Should have good facilities of irrigation and drainage.
- Pit of dimension (30 cm. ×30 cm. ×30 cm) is dug. Compost and chemical fertilizers in required amount are kept.

Spacing

- Row to row spacing should be 3-4m.
- Plant to plant spacing should be 4m.
- If the land is sloppy then plant to plant spacing can be increased to 5m too.

Fertilizer management

- Fertilizer management depends upon the fertility of land.
- First year: 3 kg urea, 3 kg DAP, 2 kg MOP and 1.5 ton well decomposed compost per kattha should be used.
- In a pit where cuttings are to be planted, apply 15gm urea,15gm DAP, 10gm MOP and 1 kg FYM.
- From the second year, at Ashoj – Kartik weeding should be done and 50gm urea and 1 kg FYM should be given**.**

Techniques of plant cuttings:

By digging pit: After digging the pit as mentioned above,50cm of cutting is wrapped and made round. Then the cutting is planted in such a way that both ends of the cutting should be above 15-20 cm from the soil surface. Cutting which comes in contact with the soil starts rooting after some days. Cutting above the soil starts producing new shoots.

By digging a canal: 30cm wide and 30cm deep canal is dug and filled with soil and FYM. Then the vines are planted as above mentioned spacing. Canal to canal distance should be 4m.

Irrigation

Vines planted in Ashoj-Kartik should be given 3-4 times irrigation up to Chaitra - Baisakh. But there should not be water logging.

Weeding

Vines get dried in winter. Main vines should be cut 50cm above the soil surface at Mangsir. New vines start fruiting soon after the spring season. Weeding should be done 4-5 times per year.

Care and management of pointed gourd vines

Growth of vines is maximum at night. Growth of female vines is about 7.8 cm and male vines is about 8.5 - 9 cm per night. This trend increases after Shrawn. Due to higher growth rate every morning inspection of the vines should be done and the vines going to another plot should be prevented.

Harvesting

Immature green fruit should not be harvested. Immature fruit are hairy in nature. If the immature fruit harvested, they break easily on slight pressure, these fruits get damaged within 4-5 hours. At the time

of harvesting, the flower should be well dried and small hairs on the fruits should be well destroyed. Harvesting of fruit should be done at an interval of 7 days.

Diseases and its control

Yellow fungus at the soil surface or little above the soil surface followed by decaying is major problem in pointed gourd. This disease is seen from Poush to Chaitra of second year of pointed gourd cultivation. Yellowing and rotting of vines is seen in rainy season. So, there should be good drainage facility.

For the above-mentioned yellow fungus 3gm/liter of blue copper should be sprayed at an interval of 10 days. For the proper growth and development of vines, Agromin is given at an interval of 15 days. Above mentioned fungicide and Agromin should not be used at the same time.

7.2 Summary of Investment Plan

1	Entrepreneurs Name			
2	Organization/form name			
3	Types of Business			
4	Address			
5	Product			
6	Target Market			
	Particular	**First year**	**Second Year**	**Third Year**
7	Land uses	10	10	10
8	Production quintal	80	65	65
9	Total capital Rs	146900	75800	75800
a	Variable Cost	137900	75800	75800
b	Fix assets	9000	0	0

10	Annual seals Rs	176000	143000	143000
11	Annual Net Profit	30700	59800	59800
12	Per Quintal Profit Rs	1725	1167	1167
13	Per KG production Cost	17	12	12
14	Return on investment (ROI)	22	79	79
15	Brick even point (BEP)	19	11	11
16	Par Katta Investment	14690	7580	7580

7.2.1 Marketing Plan

Production Place: Dodhara Chandani municipality 8, Kanchanpur.
Production area and objectives: 126 quintals in 10 kattha
Targeted market area: Mahendranagar, Dhangadi, Nepalgunj and India.

7.2.2 Production plan

Particulars	Per Month	Per Katta	Unit	Production			Total
				First lot (10 month)	Second Lot (10 Month)	Third Loat (10 Month)	
Pointed gourd production plan	10	8	quintal	80	65	65	210
Total Production			quintal	80	65	65	210

7.2.3 Fixed costs & depreciation, in NPR

S.N.	Particulars	quantity	rate	Total Cost	Total life (yrs.)	Total depreciation
1	Spade/grape hoe	3	700	2100	5	420
2	Sprayer	1	4500	4500	3	1500
3	Sickle	3	500	1500	5	300
4	Small Spade	3	300	900	5	180
	Total			**9000**		**2400**

7.3 Expenditure Plan

7.3.1 Raw materials expenses, NPR

SN	**Particular**	**Land used**	**Per Katta**	**Total Qtl.**	**Unit**	**Rate**	**First year**	**Second Year**	**Third Year**	**Total**
							Total	Total	Total	
1	Plant	10	350	3500	Sapling	10	35000	0	0	35000
2	FYM	10	325	1	Tractor	4000	4000	0	0	4000
3	Mulching materials	10	0.5	5	Tractor	2000	10000	10000	10000	30000
4	chemical fertilizers			0			0	0	0	0
A	DAP	10	2	20	kg	60	1200	1200	1200	3600
B	Urea	10	2	20	kg	35	700	700	700	2100
C	MOP	10	2	10	kg	40	400	400	400	1200

D	Pesticides	10	500	3000	Rs	1	3000	3000	3000	9000
E	Nutrition	10	500	3000	Rs	1	3000	3000	3000	9000
	Total						**57300**	**18300**	**18300**	**93900**

7.3.2 Labors, cost in NPR

SN	Particular	Land use	Per Katta	Unit	Total Qtnl.	rate	First Year	Second Year	Third Year	Total Cost
							Total Rs	Total	Total	Total
1	Land preparation (by tractor)	10	0.5	Day	5	2000	10000	0	0	10000
2	Ridge making	10	1	Day	10	500	5000	0	0	5000
3	Pit digging and planting	10	1	Day	10	500	5000	0	0	0
4	Seedlings production	10	0.5	Day	5	500	2500	0	0	2500
5	Mulching	10	1	Day	10	500	5000	5000	5000	15000
6	and spraying	10	0.5	Day	5	500	2500	2500	2500	7500
7	uf]8d]n	10	2	Day	20	500	10000	10000	10000	30000
8	Harvesting	10	2	Day	20	500	10000	10000	10000	30000
	Total						**50000**	**27500**	**27500**	**100000**

7.3.3 Other costs, in NPR

SN	Particular	Quintal	Unit	Rate	First year	Second Year	Third Year	Total Cost
					Total	Total	Total	
1	Land rant	10	Katta	2000	20000	20000	20000	60000
2	Searching market	2	Month	1000	2000	2000	2000	6000
3	Soil test	3	sample	200	600	0	0	600
4	Irrigation	10	Katta	300	3000	3000	3000	9000
5	Digging by Haro	10	Hour	1	1200	1200	1200	3600
6	Digging by Rotavator	10	Hour	1	1800	1800	1800	5400
7	Crop insurance premium	10	Katta	1	2000	2000	2000	6000
Total cost Rs					**30600**	**30000**	**30000**	**90600**

7.4 Financial Plan

7.4.1 Total cost, in NPR

S.N.	Particulars	First year	Second Year	Third Year	Total Cost
		Total Cost	Total Cost	Total Cost	
1	Fixed costs	9000	0	0	9000
2	Variable costs				
a	Raw materials	57300	18300	18300	93900
b	Labor costs	50000	27500	27500	105000
c	Other costs	30600	30000	30000	90600
	Total	**146900**	**75800**	**75800**	**298500**

7.4.2 Total Variable cost, in NPR

Sn	Particular	First year	Second Year	Third Year	Total Cost
		Total Cost	Total Cost	Total Cost	
1	Raw materials	57300	18300	18300	93900
2	Labor costs	50000	27500	27500	105000
3	Other costs	30600	30000	30000	90600
	Total Cost	**137900**	**75800**	**75800**	**289500**
	Per Katta Cost	**6895**	**3790**	**3790**	**14475**

7.4.3 Per Unit production cost, in NPR

S.N.	Particular	**First year**	**Second Year**	**Third Year**	Total Cost
1	Total Production cost	137900	75800	75800	289500
2	Total Production (KG)	80	65	65	210
3	Per quintal Investment	**1724**	**1166**	**1166**	**1379**
	Per Kg Investment	**17.24**	**11.66**	**11.66**	**13.79**

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SN	**Particular**	**First year**	**Second Year**	**Third Year**
1	Per quintal Investment	1724	1166	1166
2	Total depreciation	0.20	0.2	0.2
3	Bank interest	0.60	0.6	0.6
4	Per Quintal investment Rs	1724.55	1166.95	1166.95
5	Per Kg Rs	17.25	11.67	11.67
6	Per quintal Profit Rs	775.45	1333.05	1333.05
5.00	Sales prize	2500.00	2500.00	2500.00

7.4.4 Source of income

S.N.	Source of income	Total
	Total needed net cost	137900
1	Self-investment	87900
2	Bank investment	50000
3	Subsidy	0
4	Interest rate	**10**
	Annual interest Rs.	**5000**

7.4.5 Income projection, in NPR

S.N.	Particular	First year	Second Year	Third Year	Total
1	Total Production	80	65	65	210
2	Per Quintal Selling Prize Rs	2200	2200	2200	2200
3	**Total sales Rs**	**176000**	**143000**	**143000**	**462000**

Profit loss projection, in NPR

S.N.	Particular	First year	Second Year	Third Year	Total
1	Total Income	176000	143000	143000	462000
2	Variable cost in Rs.	137900	75800	75800	289500
a	Raw materials	57300	18300	18300	93900
b	Labor cost	50000	27500	27500	105000
c	Other costs	30600	30000	30000	90600

	Total Grass Profit (1-2) Rs	**38100**	**67200**	**67200**	**172500**
3	**Fixed cost**				
a	Depreciation	2400	2400	2400	7200
b	Bank interest	5000	5000	5000	5000
	Total	**7400**	**7400**	**7400**	**12200**
	Total Net profit Rs	**30700**	**59800**	**59800**	**160300**
	Net profit per kattha Rs	**3070**	**5980**	**5980**	

Rate of return, in NPR

$$\text{Rate of return} = \frac{\text{Net profit X 100}}{\text{Total investment}}$$

S.N.	Particulars	First year	Second Year	Third Year	Total
1	Net profit	30700	59800	59800	150300
2	Total investment	137900	75800	75800	289500
	Rate of return	**22**	**79**	**79**	**52**

Breakeven point

$$\text{Breakeven point} = \frac{\text{Fixed cost x 100}}{\text{Total Income – variable cost}}$$

S.N.	Particulars	First year	Second Year	Third Year	Total

1	Total Income	176000	143000	143000	462000
2	Variable cost	137900	75800	75800	289500
	Gross profit (TR-VC)	**38100**	**67200**	**67200**	**172500**
3	Fixed cost	7400	7400	7400	22200
	Breakeven point	**19**	**11**	**11**	**13**

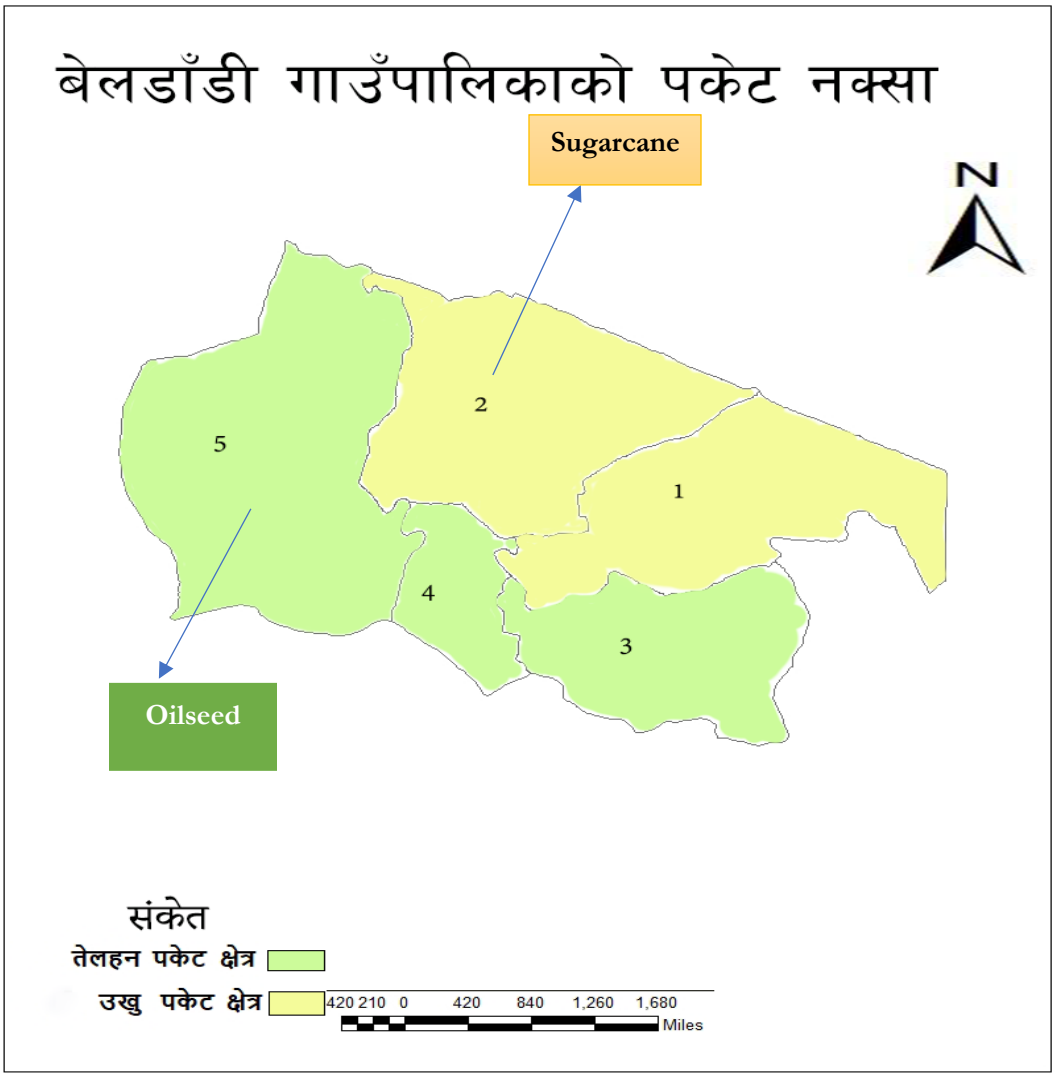
Section 7: Suggestions and Conclusions

Pointed gourd is a perennial vegetable. It is widely cultivated in Dodhara area of Mahakali municipality in Kanchanpur district. It contains protein (2%), vitamin A and C along with calcium, phosphorus and iron. It is highly useful vegetable for brain and heart disease patient. It can be easily digested and helps in blood circulation. Its commercial cultivation is highly profitable in investment point of view. Net profit of average Rs.5000/kattha can be obtained from its farming. Although farmers are well known about its commercial farming practices but due to lack of market facilities and linkage its farming is not extended yet. According to cost benefit analysis, average rate of return in this business is around 52%.

- Commercialization should be done by selecting businesses such as sugarcane, bamboo which have less loss in the riparian zone and work as organic embankment. Crops should be selected and cultivated according to the quality of the land.
- Farmers should be orientated on the benefits and costs of commodities and crop insurance should be made mandatory for risk management.
- Promote agri business through thematic agricultural cooperatives is needed.
- Land lease policy should be formulated. Since people of Indian origin have been cultivating land in most of the places, the business has to be brought under the scope of tax by registering it through temporary registration process.
- Entrepreneurship should be developed among the farmers through farmers business schools in every ward.
- It is necessary to increase the productivity per unit rather than expanding the area under paddy and wheat.
- Herbal business should be promoted in the settlements connected to the conservation area.
- Organic manure and organic pesticides should be managed.
- Services should be localized by developing thematic resource persons at the local level.
- Land allotment should be stopped, and lease law should be enacted.
- The customs duty should be fixed at the customs rate according to the time relative to the imported goods.
- Imported goods that do not meet the criteria to be adopted under Phytosanitary Certificate should be stopped as soon as possible.
- To end the practice of dumping due to its low cost of Indian products, antic dumping policy should be applied.

Annex-1: Maps showing pocket areas of potentiality

Beldandi Municipality



Dodhara Chandani Municipality