Model Sub Project Plan (SPP)

Under the project 'Dairying through Cooperatives – Key to sustainable livelihood'

(Referred by JICA as "Project for Dairy Development")

XYZ Cooperative Milk Union

June 2021

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Project at a Glance

Participating Institution (PI) : XYZ Milk Union

I. Eligibility Criteria for PI

I	Financial	Remarks
A	**General Financial criteria (applicable for all PIs)**	
1	Audit of accounts should be up-to-date and the auditor's observations should not contain any adverse opinion or disclaimer.	Up to date, no adverse opinion (FY 2019-20)
2	PI should not have any over-dues to any financial institution	No overdues
3	PI should not be in a default to any bank/ financial institution on the date of applying for loan.	No default to any financial institution
4	PI needs to contribute its share in the project/State Government may offer necessary grant to cover PI's contribution.	PI will contribute its share under the project
B	**Additional Financial Criteria (applicable for PIs availing loan under the project)**	
1	PI should have positive net worth.	Yes (FY 2019-20)
2	All outstanding dues to producer members should not exceed four payment periods.	Yes. Does not exceed one payment cycle
3	The financial returns of the project: Return on Investment (ROI) of 10% (minimum) and Debt Service Coverage Ratio (DSCR) of 1.5 times (minimum)	Yes ROI – ____% DSCR – ____ times
4	The loan to be secured through collateral security, which should preferably be minimum 1.5 times of the loan amount in terms of mortgage of immovable assets and hypothecation of movable assets. State Government guarantee shall give commitment to pay the dues in case of any shortfall.	Collateral security ___ times the loan amount
II	**Institutional/ Governance**	
1	PI has a duly constituted Governing Body such as Board of Directors/Management Committee as applicable to the legal form of the PI.	Yes, Board of Directors as applicable under the State Cooperative Societies Act
2	PI has a full time Chief Executive/Managing Director (or equivalent) and adequate number of qualified technical and managerial personnel at key positions.	Yes. The Union is headed by MD, having adequate technical and managerial personnel
3	PI is willing to amend Bye-laws in line with the model Bye-laws developed and circulated by NDDB	Yes
4	Fixed/ Undisturbed tenure for senior/ key management personnel including Managing Director/Chief Executive of PI. The PI needs to take consent of NDDB before transferring the Managing Director/Chief Executive.	Yes. Agreed
5	Board of the PI should nominate one expert each in the field of finance, Dairy Technology and marketing as independent directors	Yes
III	**Technical**	
A	**Strengthening of Milk Procurement Infrastructure:**	

1	PI should have its own milk processing facilities or have a forward linkage with an existing milk processing facility.	Yes
2	PI/DCS should have the land/ premises for setting up the Bulk Milk Coolers/construction of building for DCS or BMC free from any encumbrances.	Yes. Own/leased land and is encumbrance free
3	PI already has in place IT based reporting and monitoring systems.*	Yes
4	PI should be capable in organising producers' institutions, maintaining transparency in the processes of milk collection at village level, milk quality testing, timely payments to milk producers and grievance redressal system in place.	Yes
B	**Strengthening of Processing Infrastructure:**	
1	PI should have required environmental/ statutory clearances for setting up of plants.	Yes (encumbrance free land) Milk Union will ensure required environmental/ statutory clearances
2	PI should have its own land/ long term lease, free from encumbrances, in case of setting up of new plant or expansion of existing plant. In case of lease, requisite No Objection Certificate from the concerned authority for mortgage to NDDB would have to be obtained.	Yes (own land at existing location for milk processing plant & lease land for CFP)
C	**Strengthening of Marketing Infrastructure:**	
1	PI should have own/leased milk processing facility and marketing network for sale of liquid milk & milk products	Yes
D	**Support for ICT Infrastructure:**	
1	PI should have its own milk processing facilities or have a forward linkage with an existing milk processing facility.	Yes
2	PI should have competent manpower to manage ICT Infrastructure and applications	Yes
E	**Productivity Enhancement**	
E1	**Nutritional interventions for PE:**	
1	PI will identify/recruit technical manpower exclusively for the project.	Yes
2	PI has its own plants for manufacturing and supply of cattle feed (pregnancy feed, calf starter & calf growth meal) and mineral mixture, or have an assured tie up for sourcing these products.	Yes
3	PI has implemented Animal nutrition activities (Ration Balancing Programme (RBP)/Fodder development) under NDP I successfully.*	Yes
4	PI will create corpus from the beginning, for sustainability of the activity.*	Yes, Agreed
E2	**Fodder Development:**	
I	**Fodder Seed Production and distribution/Fodder Conservation and green fodder enhancement and fodder technology demonstration:**	
1	PI should have a network of village level farmers organisations such as village Dairy Cooperative Societies, Milk Producers' Institutions and Self Help Groups and having experience in conducting demonstrations for technology transfer at field level.	Yes
2	PI should have capacity to formulate and implement a sound plan for demonstrations.	Yes
3	PI has prior experience in this area.*	Yes
II	**Crop residue management**	
1	PI must have the capacity to formulate and implement a sound plan for crop residue enrichment and densification.	Yes

2	PI has prior experience in this area.*	Yes
3	PI should have land (free of encumbrances) for setting up the units.	Yes
4	Availability of surplus crop residues in the area in large quantity from cereal /cash /fodder crops.	Yes
5	Preference of network of village level farmers organisations such as village Dairy Cooperative Societies, Milk Producers' Institutions and Self Help Groups for implementation work	Yes

*****Preference would be given to PI meeting this criteria

II. General Information about the PI

1	Legal form of participating Institution	:	Milk Cooperative (registered under State Co-operative Societies Act, __*(year)*__)
2	Year of Registration	:	
3	Area of Operation (Districts/Talukas)	:	**ABC** and **KLM** districts
4	Name of Managing Director	:	Smt./ Shri. _____

III. Financial Status (Figures in Rs. Lakh)

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21
Annual turnover					
Share capital					
Net profit					
Accumulated Net Profit / Loss (-)					
Net-Worth					

IV. Existing status and Future Projections

a. Coverage of Milk Union

No.	Particulars		Unit	Base Year (2020-21)	Future Projections (Cumm.)				
					2021-22	2022-23	2023-24	2024-25	2025-26
1	Village Level Institutions	Organised DCS/MPI	Nos.						
		Functional DCS/MPI	Nos.						
2	Village Coverage	Functional DCS/MPI	Nos.						
3	Producer Members	Functional DCS/MPI	'000 Nos.						
4	Pourer Members	Functional DCS/MPI	'000 Nos.						
5	Total Pourers (members + non-members)	Functional DCS/MPI	'000 Nos.						
6	Total women members	Functional DCS/MPI	'000 Nos.						
7	Producer Members per functional DCS/MPI		Nos.						
8	Avg. milk procurement per member		KgPD						
9	Avg. procurement per DCS/MPI		KgPD						

b. Milk Procurement

No.	Particulars	Unit	Base Year (2020-21)	Future Projections				
				2021-22	2022-23	2023-24	2024-25	2025-26
1	Milk Procurement from Functional DCS/MPI	TKgPD						
2	Bulk Milk Procurement	TKgPD						
3	Total milk procurement (1+2)	TKgPD						

c. Sale of liquid milk & milk products

No.	Particulars		Unit	Base Year (2020-21)	Future Projections				
					2021-22	2022-23	2023-24	2024-25	2025-26
1	Liquid milk sale	Packed Liquid Milk Sale	TLPD						
		Bulk milk sale	TLPD						
		Total	TLPD						
		Milk marketing as % milk procurement	%						
2	Value Added Products	Butter	MTPD						
		Ghee	MTPD						
		Curd	MTPD						
		Lassi	TLPD						
		Flavoured milk	TLPD						
		Others____							
		Others____							
		Others____							

d. Sale of cattle feed, mineral mixture and fodder seeds

No.	Particulars		Unit	Base Year (2020-21)	Future Projections				
					2021-22	2022-23	2023-24	2024-25	2025-26
1	Cattle feed sale		MT						
2	Mineral Mixture sale		MT						
3	Fodder seed sale	Kharif	Qtl						
		Rabi	Qtl						

V. Dairy Infrastructure of the PI

a. Liquid Milk Processing Infrastructure

No.	Particulars	Existing Status (As on date __/__/_____)		Proposed Requirement by 2025-26 (EoP)
		Location of Plant	Existing Capacity (TLPD)	
a.1	Milk Processing Plant	PQR		Refurbishment/Expansion : ____ TLPD New Plant: ____ TLPD (location PQR)
		Plant 2: _____		
		Plant 3:_____		

b. Value Added Products Manufacturing Infrastructure

No.	Particulars	Existing (As on date __/__/_____)		Proposed Requirement by 2025-26 (TLPD/MTPD)
		Existing Numbers (Nos.)	Existing Capacity (TLPD/MTPD)	
A	Drying Capacity (MTPD)			
B	Butter (MTPD)			
C	Ghee (MTPD)			
D	Dahi/Yogurt (MTPD)			
E	Lassi (TLPD)			
F	Aseptic Flavoured Milk (TLPD)			
G	Indigenous Sweets (MTPD)			
H	Others_____			
I	Others_____			
J	Others_____			

c. Feed and Feed Supplement Manufacturing Infrastructure

No.	Particulars	Existing (As on date __/__/_____)		Proposed Requirement by 2025-26 (MTPD)
		Location of Plant	Existing Capacity (MTPD)	
A	Cattle Feed	(____)		Refurbishment/Expansion : ____ MTPD New Plant: ____ MTPD (location_____)
B	Bypass protein plant	(____)		Refurbishment/Expansion : ____ MTPD New Plant: ___MTPD (location_____)
C	Mineral Mixture	(____)		Refurbishment/Expansion : ____ MTPD New Plant: ____ MTPD (location_____)

d. Chilling and Testing Infrastructure

No.	Particulars	Existing (As on date __/__/_____)		Proposed Requirement by 2025-26 (EoP)
		Existing Numbers	Existing Capacity (TLPD)	
I	Bulk Milk Coolers (BMCs)			
	1 KL BMC			NA
	2 KL BMC			
	3 KL BMC			NA
	5 KL BMC			NA
	10 KL BMC			NA
ii	Chilling Centres			NA
	Total Chilling capacity (i+ii)			
Iii	Milk Testing Lab (district/state level)			
Iv	Automatic Milk Collection Unit (AMCU)			
v	Data Processing & Milk Collection Unit (DPMCU)			

VI. Key Performance Indicators

No.	Project Performance Indicators	Unit	Base-line figure (Yr ____)	Incremental Targets					EOP (Cumulative Targets)
				Yr 1 (___)	Yr 2 (___)	Yr 3 (___)	Yr 4 (___)	Yr 5 (___)	
A	**Strengthening Milk Procurement Infrastructure**								
A1	New DCS/MPI to be set up	'Nos.							
A2	DCS/MPI to be strengthened	'Nos.							
A3	DCS Building to be established	'Nos.							
A4	DCS/MPI to be covered through Electronic Testing Equipment (AMCU/DPMCU)	'Nos.							
A5	Additional Producers to be enrolled	'000 Nos.							
A6	% of women members of total members enrolled	%							
A7	Capacity of BMCs to be installed	TLPD							
A9	BMC Building to be established	'Nos.							
A10	Methylene Blue Reduction time (MBRT) of raw milk	in mins							
A11	Milk Procurement (Annual)	TKgPD							
B	**Strengthening of Processing Infrastructure**								
B1	Milk Processing Capacity to be created	TLPD							
	Reduction in effluent generation *(in case of refurbishment of plant)*	%							
	Reduction in electricity usage *(in case of refurbishment of plant)*	KWH/ litre of milk processed							
	Reduction in usage of fossil fuels *(in case of refurbishment of plant)*	Litres / litre of milk processed							
B2	Value Added Products Capacity to be created	TLPD/ MTPD							
	Product 1 ____	TLPD/ MTPD							
	Product 2 ____	TLPD/ MTPD							
	Product 3 ____	TLPD/ MTPD							
B3	Feed & Feed Supplement Manufacturing capacity to be created	MTPD							
	Cattle Feed	MTPD							
	Bypass Protein	MTPD							
	Mineral Mixture	MTPD							

No.	Project Performance Indicators	Unit	Base-line figure (Yr ____)	Incremental Targets					EOP (Cumulative Targets)
				Yr 1 (___)	Yr 2 (___)	Yr 3 (___)	Yr 4 (___)	Yr 5 (___)	
C	**Strengthening of marketing Infrastructure**								
C1	Milk Parlour	'Nos.							
C2	Walk-in-Cold Store	'Nos.							
C3	Insulation for Vans	'Nos.							
C4	Liquid Milk Sale by the PI	TLPD							
C5	% increase in the sales volume of Value Added Products	%							
D	**Support for ICT**								
D1	DCS to be covered under AMCS	'Nos.							
E	**Productivity Enhancement – *through nutritional interventions***								
E1	**Calf Rearing Programme (CRP)**								
1	Villages to be covered	Nos.							
2	Pregnant Animals to be covered	Nos.							
3	Female Calves to be covered	Nos.							
E2	**Animal Nutrition Advisory Services**								
1	Villages to be covered	Nos.							
2	Farmers to be covered	Nos.							
3	Animas to be covered	Nos.							
E3	**Fodder Development**								
1	Fodder seed distributed								
	-Fodder Seed distributed	MT							
	-Plantation of root/stem cuttings	Lakh nos.							
	-Plantation of fodder trees	Lakh nos.							
2	Mower distributed	Nos.							
	-High speed wet biomass management unit	Nos.							
	-Upto 5 HP	Nos.							
	-5 to 15 HP	Nos.							
	-Over 15 HP	Nos.							
3	Chaff Cutter distributed (power/manual)	Nos.							
4	Fodder storage godown	Nos.							
5	Silage Unit created	Nos.							
6	MTC set-up	Nos.							
7	Villages to be covered	Nos.							
8	Farmers to be covered	Nos.							
F	**Training and Capacity Building**								
F1	Persons to be trained/capacity developed	'Nos.							
	Officers	'Nos.							
	Staff	'Nos.							
	Farmers	'Nos.							

VII. Financial Outlays of the Sub Project (Rs. Lakh)

No.	Particulars	2021-22	2022-23	2023-24	2024-25	2025-26	Total
A	Strengthening Milk Procurement infrastructure						
B	Strengthening Processing Infrastructure						
B1	Milk processing facilities and manufacturing facilities for Value Added Products						
B2	Feed & feed supplements manufacturing infrastructure						
C	Support for Marketing infrastructure						
D	Support for ICT Infrastructure						
E	Productivity Enhancement – *through nutritional interventions*						
F	Training and Capacity Building						
	Total						
	Grant (GoI)						
	Loan						
	PI's/State's Contribution						

VIII. Sub Project Financial Analysis

No.	Financial Indicators	Base case	**Sensitivity** (10% reduction in procurement & sales)	Norms
1	Return on Investment (RoI)			>10%
2	Debt Service Coverage Ratio (DSCR)			>1.50

1. Introduction

1.1. Overview of Operational Area of the Union

XYZ Cooperative Milk Union was established in the year _____. The area of operation of the Union is two districts of the State, namely ___*ABC*____ and ___*KLM*___. Detail of profile of operational area of Milk Union is given in the table below:

Table 1: Details of Operational Area of the Milk Union

No.	Particulars		Unit	Operational area of XYZ Milk Union
1	Area		'000 sq. km.	
2	Revenue villages		'Nos.	
3	Total population		Lakh 'Nos.	
4	Rural population		Lakh 'Nos.	
5	Rural Household		Lakh 'Nos.	
7	In milk animals	Indigenous cattle	Lakh 'Nos.	
		Crossbred cattle		
		Buffalo		
8	In-milk animal Productivity	Indigenous Cattle	KgPD	
		Crossbred Cattle		
		Buffalo		
9	Milk production		TKgPD	
10	Estimated marketable surplus		TKgPD	

1.2. Past performance of the Union

- Milk procurement network:
  As on March 2021, the Union has ____ organised DCS of which ____ are functional. About ____ lakh milk producers are members of DCS with ___% women members (____ lakh women members). Milk procurement and liquid milk sale of the Union is increasing at a CAGR of ___% and ___% respectively over past 5 years. Details of past performance of the Union are given in the Table below:

Table 2: Details of Past Performance of the Milk Union

No.	Particulars	Unit	Past performance					
			16-17	17-18	18-19	19-20	20-21	CAGR
1	Organised DCS/MPI	Nos.						
2	Functional DCS/MPI	Nos.						
3	Villages coved by Functional DCS/MPI	Nos.						
4	Producer Members (Functional DCS/MPI)	'000 'Nos.						

No.	Particulars	Unit	Past performance					
			16-17	17-18	18-19	19-20	20-21	CAGR
5	Pourers	'000 'Nos.						
6	Women Members	'000 'Nos.						
7	Producer Members per functional DCS/MPI	Nos.						
8	Avg. milk procurement per member	KgPD						
9	Avg. procurement per DCS/MPI	KgPD						
10	Milk Procurement from DCS/MPI	TKgPD						
11	Bulk milk procurement	TKgPD						
12	Liquid Milk Sales	TLPD						
13	Bulk milk sale	TLPD						
14	Major Input Services provided							
	Cattle Feed sale	MT						
	Mineral Mixture sale	MT						
	AI Done	'000 'Nos.						

- Competitors profile:

  The milk procurement by competitors in the operational area of the POI:

Table 3: Milk procurement in the operational area

Particulars	Player 1	Player 2	Player 3
Brand name			
Milk procurement (2020-21) (TKgPD)			
Average price paid to farmers (Rs. per litre)			

- Chilling capacity:
  The chilling capacity of the Union is as given below:

Table 4: Chilling and testing infrastructure with the Union

No.	Particulars	Unit	Past performance				
			16-17	17-18	18-19	19-20	20-21
i	Bulk Milk Coolers (BMCs)						
	- Nos.						
	- Capacity						
ii	Chilling Centres						

No.	Particulars	Unit	Past performance				
			16-17	17-18	18-19	19-20	20-21
	- Nos.						
	- Capacity						
iii	Milk Testing Lab (district/state level)						
iv	Automatic Milk Collection Unit (AMCU)						
v	Data Processing & Milk Collection Unit (DPMCU)						
vi	Electronic Adulteration Testing Machine						

The details of existing chilling and testing infrastructure is given in **Annex I**.

- Quality of milk:

  About ___% of total milk procured is received through tankers (____ TKgPD) and ___% through Cans (____ TKgPD). The MBRT of milk received at the dairy are as under:

Table 5: MBRT of milk received at the dairy

Particulars		MBRT (in minutes)
Chilled milk	Chilling centre	
	BMC	
Raw milk	Cans	

Quality of milk received at the Union and the price paid to the producer members:

Table 6: Quality of milk received and price paid to farmers

Particulars	16-17	17-18	18-19	19-20	20-21
Avg. Fat (%)					
Avg. SNF (%)					
Avg. milk procurement price (including price difference) (Rs. per Kg)					

- Milk processing

  At present, the Union has a processing plant of ____ TLPD capacity at ___*PQR*___ city. The plant was established in the year _____.

Table 7: Details of Milk Processing Capacity of the Union

No.	Particulars	Unit	Capacity
1	Milk Processing Plant	TLPD	

No.	Particulars	Unit	Capacity
2	Raw milk silos	KL	
3	Pasteurised milk silos	KL	
4	Pasteuriser	KLPH	
5	Homogenizer	KLPH	
6	Cream separator	KLPH	

The Union manufactures milk products like butter, ghee, curd, lassi, flavoured milk, _____, _____ and _____ in the existing plant.

Table 8: Value Added Products Plant Capacity of the Union

No.	Particulars	Unit	Capacity
1	Butter	MTPD	
2	Ghee	MTPD	
3	Curd	MTPD	
4	Lassi	TLPD	
5	Flavoured Milk	TLPD	
6	Others _____	TLPD/MTPD	
7	Others _____	TLPD/MTPD	
8	Others _____	TLPD/ MTPD	

- Marketing of liquid Milk & Milk Products

The details of liquid milk demand and share of various players is given in the table below:

Table 9: Liquid Milk Demand & Sales in Union's Operational Area

No.	Particulars	Unit	Figures
1	Cities covered for marketing		*(name of cities)*
	Milk Demand	TKgPD	
2	Liquid Milk Sale	TLPD	
	XYZ Milk Union	TLPD	
	Private Players 1___	TLPD	
	Private Players 2___	TLPD	
	Unorganised Sector	TLPD	

The Union sells packed liquid milk & milk products under the brand name '*XYZ Milk*'. The details of sales of liquid milk and value added products by the Union is given below:

Table 10: Details of sale of liquid milk & value added products by the Milk Union

No.	Product	Unit	Avg. Fat %	Avg. SNF %	Quantity sold
A.	**Liquid milk**				
1	Toned Milk	TLPD			

No.	Product	Unit	Avg. Fat %	Avg. SNF %	Quantity sold
2	Double Toned	TLPD			
3	Standard Milk	TLPD			
4	Full Cream Milk	TLPD			
B.	**Value Added Products**				
1	Butter	MTPD			
2	Ghee	MTPD			
3	Curd	MTPD			
4	Lassi	TLPD			
5	Flavoured Milk	TLPD			
6	Others____				
7	Others____				
8	Others____				

The overview of marketing infrastructure of the Union is as given below in the table:

Table 11: Details of marketing infrastructure of the Milk Union

No.	Particulars	Unit	Figure (2020-21)
1	Distributors	Nos.	
2	Retailers	Nos.	
3	Franchisee	Nos.	
4	Exclusive Milk Booth/ Parlours	Nos.	
5	Insulated vehicles	Nos.	
	- Capacity	TL	
6	Refrigerated vehicles	Nos.	
	- Capacity	TL	
7	Retailers having Visi coolers	Nos.	
8	Retailers having Deep Freezer	Nos.	
9	Walk-in-Cold store	Nos.	
	- Capacity	TL	

1.3. Financial status of the Union

- The past financial performance of the Union is given below:

Table 12: Financial Performance of the Union in past 5 years

No.	Particulars	Past Performance (Rs. lakh)				
		2016-17	2017-18	2018-19	2019-20	2020-21
1	Annual turnover					
2	Share capital					
3	Net profit					
4	Accumulated Net Profit/ Loss (-)					
5	Net-Worth					

- Assistance received by the Union under various central/ state Government schemes for Dairy Development activities over last 3 years is given in the table below:

Table 13: Assistance received by the Milk Union under various schemes

No.	Scheme name	Loan Amount (Rs. lakh)	Grant Amount (Rs. lakh)	Union's share (Rs. lakh)	Total Outlay (Rs. lakh)	Purpose
1						
2						
3						

- Long term borrowings from NDDB and other Banks/ Financial institutions is given in the table below:

Table 14: Long term borrowing by the Union

No.	Name of Agency	Amount received (Rs. in lakh)	Purpose	Repayment Status
1				
2				

2. Overview of Sub Project

2.1. Objective of the Sub Project

The objective of the sub project is to increase sales of milk and milk products by increasing farmers' access to organised market, upgrading milk processing facilities and marketing infrastructure and enhancing the productivity of milch animals through animal nutrition intervention, thereby contributing to increase in returns to the producer members in the operational area of the union.

2.2. Sub Project Area

The proposed activity would be implemented in the operational area of the Union i.e _____,_ _____ districts.

2.3. Activities proposed

Following activities have been proposed under the project:

- Strengthening Milk Procurement Infrastructure
- Strengthening of Milk Processing Infrastructure
- Support for Marketing Infrastructure
- Support for ICT Infrastructure
- Productivity Enhancement- *through nutritional interventions*
  - Calf Rearing Programme (CRP)
  - Animal nutrition advisory services
  - Fodder development

2.4. Beneficiaries

After implementation of the Sub Project, milk producers of the DCS affiliated to the Milk Union will be benefitted. This would help in increasing the income of milk producers and make available quality milk & milk products to the consumer.

3. Sub Project Components Rationale & Design

3.1. Component A: Strengthening milk procurement infrastructure

3.1.1.Rationale

- At present, The Union has covered only ___% revenue villages and procures about ___% of milk marketable surplus villages in its operational area. The Union is facing competition from private players and unorganised players in milk procurement operations. The Union envisages expanding its coverage by setting-up new DCS in uncovered villages and enrolling more milk producer members in existing DCS. To maintain transparency and build trust of producer members in milk procurement operations and improve quality of milk received, the Union needs to set-up Electronic milk testing equipment and BMCs at DCS level.

3.1.2.Component Design

Under this component following activities have been proposed:

i. Setting-up of new Dairy Cooperative Society (DCS)
   a. Milk collection accessories including testing equipment and furniture, etc.
   b. Management grant to village level functionaries of new DCS
ii. Installation of electronic milk testing equipment (AMCU)
iii. Installation of Bulk Milk Coolers (BMC)
iv. Building for DCS/BMC
v. Tankers for milk transportation

The list of villages proposed for setting-up of new DCSs/ strengthening of existing DCS is given in **Annex II**.

The list of proposed DCSs for setting up of Electronic milk testing equipment at BMC locations/DCS considered for strengthening is given in **Annex III**.

The list of proposed location wise requirement of BMC capacity is given in the **Annex IV**.

3.2. Component B: Strengthening of Milk Processing Infrastructure

3.2.1.Rationale

- At present Union has a milk processing plant of ___ TLPD capacity which was established in the year _____. The details of

existing land area & civil structure and existing plant equipment is provided in **Annex V-A** and **Annex V-B**.

- The milk procurement is increasing at CAGR of __% since last 5 years and is expected to grow at CAGR of ___% in the next 5 years. Considering the milk procurement activities proposed under the project and the past growth rate of milk procurement, it is estimated that in next 5 years the milk procurement volume will reach to ____ TKgPD from villages in its operational area.
- To handle the increased milk procurement, the Union proposes to establish a new automated dairy plant of ____ TLPD capacity along with value added product manufacturing facility at the existing location (_____).
- In the project area, due to poor economic condition of milk producers and lack of awareness, the practice of feeding cattle feed & feed supplements like mineral mixtures is not uniform. There is a need to encourage milk producers for feeding the animals with cattle feed and mineral mixture in the project area. The Union does not have its own manufacturing capacity for cattle feed & mineral mixture. Therefore, it is proposed to establish a new cattle feed plant of _____ MTPD along with mineral mixture plant of ____ MTPD capacity, which will help in making available feed & feed supplements at reasonable rate to our milk producers as feeding of quality feed and feed supplements are crucial for improving milk productivity in animals.

3.2.2.Component Design

B1: Milk Processing Facilities and manufacturing facilities for Value Added Products

- <u>Proposed new milk processing plant details</u>
  The Union proposes to set up a new ____ TLPD milk processing plant to handle projected milk procurement and meet market demand of quality pasteurised milk.
- <u>Land and location</u>
  The existing plant (____ TLPD) of the Union is located at outskirts of PQR city. At the existing location, the Union has its own land which is encumbrance free and is available to establish a new ____ TLPD milk processing plant, along with milk products facilities.
- <u>Site development</u>
  The location is already fenced. The Union will take necessary actions such as levelling the land, etc. for construction of new

plant under the project. The filled-in site selection format is given in **Annex VI-A**.

- Layout and building

  The civil works comprise of main processing building, which includes Tanker Reception Bay, Main processing hall, provision for manufacture of other products, cold storage, CIP, Laboratory, quarters, office, garages, security post etc. The factory building for the milk reception, quality control, processing, packing and storage of milk products should be as per approved standards. The essential sections of a milk Tanker Reception Bay - consisting of can conveyor, can washer, weighing balance, dump tank etc.
    - Processing Hall - cream separator, chiller, homogenizer, pasteuriser and other related machinery are installed.
    - Storage area- for milk storage tanks.
    - Products manufacturing area-depends upon the type of products, quantity of milk handled and the machinery to be installed.
    - Packing area-for packing of liquid milk and other products.
    - Cold storage-for keeping the milk and milk products before sending to market.
    - Quality Control Laboratory-for testing the quality of milk and milk products.
    - Utilities area-for installing boiler, generator set, water treatment plant, maintenance and store area for spares.
    - Effluent Treatment Plant area for treating the dairy effluents before being discharged.
    - Office area-for all the essential staff.
    - Vehicle parking area-both for the milk procurement and distribution vehicles.
    - Input supply area- for providing veterinary service, supply of feed, fodder seeds, etc.
- Plant and machinery

  The buildings and equipment required for establishment of capacity of new milk processing plant along with its specification is given in **Annex VII-A**.

B2: Feed & Feed Supplement Manufacturing Infrastructure

- Proposed new feed & feed supplement plant details

  The Union proposes to establish ____ MTPD cattle feed plant along with by-pass protein feed (___ MTPD) and mineral mixture (___ MTPD) manufacturing facilities to cater to the demand of its producer members.

- Land and location
  The plant is envisaged to be established at MNO location which is well connected by road and railway. Most of the raw materials can be procured locally or from neighbouring states. It is estimated that approximately ___ acres of land would be required to house the plant as well as the raw material and finished goods godowns. The Union has its own land of ___ acres which is encumbrance free where the proposed plant can be set-up. The filled-in site selection format is given in **Annex VI-B**. The buildings and equipment required for establishment of capacity of new milk processing plant along with its specification is given in **Annex VII-B**.
- Type of feed
  The Union is envisaging to manufacture BIS Type I and Type II cattle feed, mineral mixture and by-pass protein feed at the proposed plant.

3.3. Component C: Support for Marketing Infrastructure

3.3.1.Rationale

- At present, the Union is selling ____ TLPD liquid milk in its operational area under brand name _____, whereas demand of liquid milk is ____ TLPD. The Union targets to sell ___ TLPD liquid milk by 2025-26 by increasing its share in liquid milk demand from ___% to ___%.
- To enhance perception of consumers about the milk products of the Union there is need to strengthen cold chain infrastructure and establish additional milk parlours so that good quality milk products can be made available at desirable temperatures to the consumers.
- The marketing and sales plan of the Union over next three years is given in **Annex VIII.**

3.3.2.Component Design

Under this component following activities have been proposed:

- Strengthening marketing cold chain infrastructure by:
  - Establishing walk-in cold stores
  - Insulation of marketing vans
  - Establishing Milk Parlours with visi-coolers and deep freezers
- Conducting consumer awareness programmes highlighting the benefits of packed liquid milk over loose milk, dangers of loose milk in terms of hygiene, quality, etc.

- Conducting marketing studies and market promotion activities

3.4. Component D: Support for ICT Infrastructure

3.4.1.Rationale

- Information & Communication Technologies (ICT) plays a pivotal role in maintaining transparency and improving operational efficiency of a business. It is necessary for the Union to promote the use of ICT to remain competitive. ICT will be helpful at all levels of dairy value chain by increasing traceability, reducing turn-around time and maintaining transparency in operations. It is very important that benefit of ICT should also reach to the milk producers. To build transparency in milk bill payment ICT can play a pivotal role by daily informing the milk producers about the quantity & quality of milk poured and its value. Under the project, it is proposed to establish Automatic Milk Collection System (AMCS).

3.4.2.Component Design

- AMCS is a software to streamline milk collection operations at village level and provide farmers and other stakeholders with latest information on milk procurement transactions on real-time basis.
- Necessary arrangement of the hardware and software required for implementation will be installed suitably. The software would be installed at DCS level, connectivity with Union Portal will be established, interface with various equipment will be managed, the software will be configured, the initial data from union portal will be updated and DCS would be guided to manage / update master data.
- It will help in bringing transparency in the milk collection operations, improve process efficiency and provide real time information to dairy cooperatives. AMCS will enable milk bill payment directly to farmers' bank accounts. Farmers will get instant SMSs for every transaction and have access to all past transactions with AMCS android application.

3.5. Component E: Productivity Enhancement

3.5.1. Rationale

- The milk productivity of milch animals in the operational area is very low. Low milk production by indigenous cows and buffaloes can be attributed to several reasons of which imbalanced nutrition is one of the major factors. Also, feeding accounts for about 70% of the cost of milk production. To

improve the profitability and income from dairy farming, the Union proposes to implement productivity enhancement activities such as Calf Rearing Programme (CRP), Animal Nutrition Advisory Services and Fodder Development activities in its operational area.

E.1: Calf Rearing Programme

- In order to improve the productivity and lifetime milk production, Calf Rearing Programme is proposed to be implemented by the Union. It would help in addressing the issues of high calf mortality, delay in sexual maturity and longer calving interval, which are the major causes of economic loss to the farmers.
- Under the programme, pregnant animals will be fed with specific feed optimally. Subsequently, proper feeding and management of healthy born calves would help in their growth at desired rate.

E.2 Animal Nutrition Advisory Services:

- To maximise profitability in dairy farming and to achieve maximum yield as per their genetic potential, it is important to feed animals optimally during transition as well as in early phase of lactation.
- Feeding of quality feed and feed supplements are crucial for improving productivity and reproductive performance in animals. Due to lack of awareness on balanced feeding, the ration of dairy animals remains often deficient with certain critical nutrients that are important for milk production and reproduction.
- Thus, under the project, milk producers will be encouraged to feed the animals with fodder, cattle feed & mineral mixture in a balanced proportion with the help of '*Pashu Poshan'* application.

E.3 Fodder Development:

- Availability of green fodder round the year is critical as green fodder is the source of nutrients for milch animals. The shortage of green fodder in the operational area poses a major challenge for the Union to meet the nutritional requirement of livestock.
- In the operational area of the Union, the main constraints for enhancing availability of green fodder are limited land under fodder production, shortages of improved certified fodder seeds, poor adoption of fodder conservation practices, lack of adequate management of common / fallow lands, wasting of fodder by feeding un-chaffed fodder and lack of awareness among farmers about latest & improved fodder production &

conservation technologies. To make available green fodder throughout the year, it is important to conserve fodder in the form of silage when it is abundant at particular season. Thus, Union proposes to enhance green fodder production and promotion of fodder conservation technologies & crop residue management at field level in its operational area.

3.5.2.Component Design

E1 Calf Rearing Programme

- An Animal Nutrition Officer (ANO) will be responsible for project implementation and monitoring.
- One CRP supervisor would be identified for about 10 villages
- Advanced pregnant cows (minimum 7 months pregnant) and buffaloes (minimum 8 months pregnant) will be identified, depending upon the availability of milch breeds.
- During advanced pregnancy stage, pregnancy feed will be given to identified animals @ 3 kg per day/animal for 60 days prior to calving.
- On calving, CRP supervisor would ear tag the female calves with 12 digit unique ear tag provided in the project and record data in INAPH software using tablet/android phone.
- Calf starter (225 kg/animal for 26 weeks), calf growth meal (1435 kg/animal for 82 weeks) would be made available for each animal.
- Transition feed (4 kg per day for 111 days) will be provided to the Dams in order to achieve higher milk yield, longer lactation length and to reduce metabolic disorders.
- Farmers will be oriented on '*Pashu Poshan'* application for generating balanced ration advice by themselves.
- After completion of six months of project implementation, awareness campaigns for farmers will be organized by the CRP supervisor.

E2 Animal Nutrition Advisory Services

- An Animal Nutrition Supervisor (ANS) will conduct village awareness programme to popularise various feed supplements and their importance.
- Demonstration of benefits of mineral mixture feeding to 40 animals in a village will be done in phased manner. Animal will be provided 100 gm/day mineral mixture for 300 days. Benefits of feeding mineral mixture through these animals will be demonstrated to other farmers in the village by conducting Village Awareness Programmes (VAPs).

- Demonstration for positive effects of Transition feed and early lactation feed (4 kg for 111 days per animal) will be carried out (for about 10 animals per village).
- Popularisation of '*Pashu Poshan'* application will be done to promote balanced feeding.
- Pamphlets and reading materials will be provided to farmers in local languages.
- All the transactions will be captured in INAPH software.

E3 Fodder Development Activities

- Fodder Development Officer (FDO), Animal Nutrition Officer (ANO) and Animal Nutrition supervisors (ANS) will be responsible for project implementation and monitoring (same for all PE activities).
- The Union will identify farmers to provide support for TL/Certified/ Hybrid fodder seeds and to encourage use of mowers.
- Under the project, Manual chaff-cutters will be provided to marginal & small farmers and Power chaff-cutters will be provided to large farmers.
- The Union will identify and develop entrepreneurs at village level who will organise production of green fodder on medium and large farmers' fields under buy- back arrangement with DCS and conserve it in the form of silage.
- Union will identify progressive farmer in villages for making available premises for setting-up of Micro Training Centre (MTC). The operations of MTC will be managed by the Union.
- For Commercial fodder production, the PI will finalise land on lease in the village and develop the land in a scientific manner for fodder production. The fodder thus produced will be sold to landless households, marginal and small farmers.

The list of villages proposed for implementation of CRP, AN advisory services and Fodder development activities is given in **Annex IX.**

3.6. Component F: Training and Capacity Building

- Training & capacity development of Union Staff, DCS staff and producer members is an important aspect for success of the sub project. Thus, under the sub project, the Union proposes to focus on capacity building of its manpower in all spheres of dairying operations along with awareness & extension activities for milk producers.

4. Sub Project Implementation Arrangement

4.1. Implementation arrangement

4.1.1. Sub Project Management Committee (SPMC)

- At the PI level, a Sub Project Management Committee will be constituted for monitoring and reviewing activities under various components being implemented under the project, which will be headed by Managing Director (MD) of the Milk Union.
- The members of the Committee will be:
    i. Managing Director/ Chief Executive Officer / General Manager of the Milk Union (Chairperson)
    ii. Section/Department Heads (Purchase, Finance & Accounts, HR & Admin, Procurement & Inputs, Plant & Engineering, Marketing & Sales, IT/MIS.)
    iii. Sub-Project Coordinators (all components proposed under the project)
    iv. Grievance Redressal Officer (GRO)
    v. NDDB representative
    vi. MIS Officer – who shall be the member convener
- The Committee, if desires, may also call special invitees to attend the meeting. The Committee will meet at least once a quarter to review the progress of sub project activities.
- The roles & responsibilities of the Committee will be:
    - To review the progress of the sub project (component wise) and provide quarterly reports (as may be required) to Implementation & Monitoring Cell (IMC) in NDDB in specified formats.
    - To prepare long term strategies, action plans, take policy decisions related to sub project implementation, including approval of budget, expenditure, reimbursement and release of advances, entering into contracts with agencies and other organizations, etc.
    - Post sanction, timely execution of project agreements and ensure regular utilisation & repayment of loan as per the terms and conditions prescribed in the loan agreements.
    - Resolve issue and bottlenecks during sub project implementation.
    - Regularly review the status of grievance redressals under the sub projects and provide guidance/directions, if required.
    - Provide required support to auditors appointed under the project.

- Ensure timely submission of required data, information and reports to IMC (located at NDDB.

4.1.2.Sub Project Implementation Cell (SPIC)

- To effectively implement each component under the project, a Sub Project Implementation Cell will be constituted at PI level for each component.
- The Cell will be headed by Sub Project Coordinator (PC) who will be appointed by MD of the PI and the members of the Cell will be:
  i. Sub Project Coordinator (one PC each for respective component) – head of the cell
  ii. Officers & Supervisor (Milk procurement supervisor/ Marketing supervisor/AN officer, FDO, AN supervisor, CRPS – as applicable to the sub project)
  iii. Purchase Officer
  iv. Finance & Accounts Officer
  v. IT/MIS Officer
- The Cell will be responsible for implementation and monitoring of the activities of the particular component on day-to-day basis and will be accountable for achievement of the targets set under the sub project.
- The Cell would meet every month and will manage implementation of the sub project under the supervision, direction and control of the Sub Project Management Committee.
- The roles & responsibilities of the Cell will be:
  - Define sub-project Key Performance Indicators (KPI) in line with Project Operation Manual and set monthly targets under each KPI
  - Arrange required resources to implement the project
  - Monitor the physical and financial progress of the Sub project
  - Document success stories.
  - Periodically report the progress of sub project activities to the Sub Project Management Committee.
  - Provide required suggestions/ recommendations to Sub Project Management Committee to take necessary policy decisions for smooth implementation of the sub-project.
  - Resolve and respond to all grievances received under the sub project.
  - Maintain record and accounts of all transactions.

- Identification/recruitment of requisite manpower & arrange their training

4.1.3.Implementation in the field

- The PI will identify one senior officer as Project Coordinator (PC) from the existing manpower for overall project coordination and monitoring. Supervisors/Field staff will report to PC. PC will liaison with NDDB for technical and other supports.

4.2. Schedule of implementation

- The sub project is expected to start in the year 2021-22. The appointment of the agency for technical consultancy services, construction of civil structures, purchase of materials, etc. will begin from 2021-22. The establishment of new dairy plant is expected to be completed by 2022-23 and start processing of milk and manufacturing of milk products from 2022-23 onwards. The tentative schedule of implementation of activities under the project is given in **Annex X.**

5. Human Resource Management

5.1. Existing Manpower

- The Union has total manpower strength of ___, of which ___ are officers, ____ are staff and ____ are workers. The day to day operations of the Union is looked after by a Managing Director. Section wise existing manpower strength is given in the table below:

Table 15: Section wise existing manpower of the Milk Union

No.	Department/ Section	Officers			Staff			Workers			Total		
		Regular	Contract	Total	Regular	Contract	Total	Regular	Contract	Total	Regular	Contract	Total
1	Administration												
2	Accounts												
3	P&I												
4	Marketing												
5	Purchase/Store												
6	MIS												
7	Plant/Production												
8	Quality Control												
9	Engineering												
	Total												

- The Organogram of the Milk Union is given in **Annex XI.**

5.2. Training & Capacity Development activities of the PI

- At present, the Union has its own Training Centre with ___ rooms having aggregate seating capacity for about ____ persons. Lodging and boarding facilities are available for about ____ persons is available.
- In 2020-21 the Union had conducted ____*(nos.)*___ training programmes for farmers, Board of Directors, officer and staff on various topics related to clean milk production, farm management, dairy value chain, plant operations, etc.

5.3. Manpower required for the proposed sub-project

The Union has the required manpower for implementation of the project. The additional manpower required for the project would be hired as and when required. The key manpower required for implementation of sub project activities at village level will be identified and suitably trained. The manpower identified at Union level for coordination of all the components under the project is as given below:

Table 16: Details of manpower identified for sub-project

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinators	*Nos.*	Identified
2.	MIS Officer	*Nos.*	Identified
3.	Grievance Redressal Officer	*Nos.*	Identified
4.	Finance Officer	*Nos.*	Identified
5.	Purchase (Procurement) Officer	*Nos.*	Identified
	Total	***Nos.***	

Component wise specific manpower required for implementation of the sub-project is as follows:

Component A: Strengthening of milk procurement infrastructure

Table 17: Details of manpower identified for component A: Strengthening of milk procurement infrastructure

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator	*Nos.*	Identified
2.	Procurement Officer/ Manager	*Nos.*	Identified
3.	Supervisor	*Nos.*	*__(nos.)___* – identified, *__(nos.)___* – proposed to be recruited
	Total	***Nos.***	

New DCS secretaries will be recruited from the village itself. Wherever BMC is proposed, suitable persons as cleaner & tester will also be identified. DCS employees will be trained on various aspects of running DCS and BMC.

Strengthening of milk processing infrastructure:

- Manpower required for Milk processing plant of ___ TLPD along with Value Added Products facilities is given below:

Table 18: Details of manpower identified for component B1: Strengthening of milk processing infrastructure

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator	*Nos.*	Identified
2.	Plant Manager	*Nos.*	Identified
3.	Engineers	*Nos.*	*__(nos.)___* – to be identified
4.	Quality Control/ Lab. Chemist	*Nos.*	*__(nos.)___* – to be identified
5.	Production Officer	*Nos.*	*__(nos.)___* - identified, *__(nos.)___* – proposed to be recruited
6.	Sr. Technician / Operator	*Nos.*	*__(nos.)___* - identified, *__(nos.)___* – proposed to be recruited

No.	Particulars	Manpower required	Identified/ to be recruited
7.	Distribution coordinator	*Nos.*	Identified
8.	Store Keeper	*Nos.*	Identified
	Total	***Nos.***	

About __ Officers and ___ staff are required to operate the automated plant. The casual labour required for the plant would be hired on daily job work basis.

- Manpower required for Cattle feed & feed manufacturing plant of ___ MTPD along with ___ MTPD by-pass protein plant and __ MTPD mineral mixture plant is given below:

Table 19: Details of manpower identified for sub component B2: Strengthening of feed & feed supplement manufacturing infrastructure

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator (PC)	*Nos.*	Identified
2.	Engineers	*Nos.*	*__(nos.)___* – to be identified
3.	Purchase Officer	*Nos.*	Identified
4.	Production Officers	*Nos.*	*__(nos.)___* – to be identified
5.	Quality Control/ Lab. Chemist	*Nos.*	Identified
6.	Sr. Technician / Operator	*Nos.*	*__(nos.)___* - identified, *__(nos.)___* - proposed to be recruited
7.	Distribution coordinator	*Nos.*	Identified
8.	Technicians	*Nos.*	*__(nos.)___* - identified, *__(nos.)___* - proposed to be recruited
9.	Administration Officer	*Nos.*	To be recruited
10.	Store Keeper	*Nos.*	Identified
	Total	***Nos.***	

It is estimated that the CFP would attain 75% capacity utilization only after the fifth year of commencement of operations. Initially ___ personnel are planned to be engaged in essential areas such as production, distribution, stores, laboratory etc. As the plant starts to operate the third shift from the sixth year onwards, the number of personnel engaged would be increased to ____. The Union will put in place the required manpower.

Strengthening of milk marketing infrastructure:

Table 20: Details of manpower identified for component C: Strengthening of milk marketing infrastructure

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator (PC)	*Nos.*	Identified
2.	Marketing Officer/ Manager	*Nos.*	Identified
3.	Marketing Field Staff	*Nos.*	__*(nos.)*___ - identified, __*(nos.)*___ - to be recruited
	Total	***Nos.***	

Strengthening of ICT infrastructure:

Table 21: Details of manpower identified for component D: Strengthening of ICT infrastructure

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator (PC)	*Nos.*	Identified
2.	MIS Officer	*Nos.*	Identified
	Total	***Nos.***	

Manpower for Productivity Enhancement Activities:

Table 22: Details of manpower identified for component E: Productivity Enhancement – through nutritional interventions

No.	Particulars	Manpower required	Identified/ to be recruited
1.	Project Coordinator (PC)	*Nos.*	Identified
2.	Animal Nutrition Officer (ANO)	*Nos.*	To be recruited
3.	Fodder Development Officer (FDO)	*Nos.*	Identified
4.	Calf Rearing Programme Supervisor (CRPS)	*Nos.*	To be recruited
5.	Animal Nutrition Supervisor (ANS)	*Nos.*	To be recruited
	Total	***Nos.***	

6. Financial Management

6.1. Financial Analysis

6.1.1. Financial indicators

The XYZ Milk Union is a financially stable organisation and its sales turnover has increased by ____% over past 5 years. The Financial Performance of the Union is shown in the Table below:

Table 23: Financial performance of the Milk Union

(Rs. lakh)

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21
Annual turnover					
Share capital					
Net profit					
Accumulated Net Profit / Loss (-)					
Net-Worth					

6.2. Release of Fund

The Union will open two separate "Project Bank Accounts" in a scheduled commercial bank one for loan and the other for grant for transactions related to the implementation of the project. Project Bank Account will be operated by two authorised persons of the Union. Union will deposit its' contribution in the said Project Bank Accounts. All payments related to the sub-project shall be made through cheques or bank transfer from these accounts only.

The Union will submit the Fund Utilisation Report (FUR) duly audited by its internal auditors (a Chartered Accountant) within 15 days of the close of the quarter.

6.3. Financial Management arrangements including fund flow

The Union will follow the financial management arrangements prescribed in the Project Operational Manual. The Union would build up sound financial management systems and processes as also the organisational structure to implement these systems in an efficient manner for availing assistance under the JICA project.

7. Sub Project Procurement/Purchase Arrangement

7.1. Present procurement (purchase) procedure of the Union

The Union has its own Procurement rules which is being followed for procurement of goods (ICT and Non-ICT), works and services. The Purchase section is headed by General Manager and supported by ___ Managers and ____ officers. Qualifications of personnel working in purchase section are given below:

Table 24: Manpower structure in Purchase section

No.	Designations	Qualifications	Experience
1.			
2.			
3.			
4.			

7.2. Proposed procurement (purchase) arrangement under the sub project

To purchase goods, works & services, the Union will follow the procurement (purchase) procedures as described in the Project Operation Manual. The Union has prepared a procurement plan and procurement schedule for goods to be procured under the sub project. The Procurement Plan and Procurement Schedule for first 6 months is attached at **Annex XII**.

8. Risk Assessment and Mitigation Plan

Potential risks that have an adverse bearing on the sub project and appropriate response mechanisms to deal with them have been identified. If some more risks arise in the course of sub project implementation, they will be suitably identified and appropriate mitigation measures would be evolved. The risks identified along with the possible mitigation/enhancement measures are given below:

Table 25: Risk Assessment and Mitigation Matrix

No.	Risk	Mitigation/enhancement Measures
1	Availability of encumbrance free land for construction of DCS/ BMC building.	Adequate care will be taken by the PI to ensure encumbrance free land for construction of DCS/ BMC building at village level. Only the land owned by DCS or taken on lease from Government/Gram Panchayat will be used for construction of the buildings.
	Increase in cost of steel, cement, equipment and manpower during the project implementation.	Adequate provision for price contingency has been considered while estimating the total project outlay which will take care of price escalation of the cost of steel, cement, equipment and manpower during the project implementation.
2	Addition of waste to the environment at location of the plant.	Modernisation of dairy plants will reduce solid losses and put lesser load on the ETP. Energy efficient systems will be put in place in the plant for reduction in requirement of fuel and water per litre of milk. Effluent Treatment in the plant premises will be set-up and ensure its regular operation. Waste management practices at the plant level will be adopted and suitable training of staff for the same will be done.
3	Less availability of adequate certified/TL fodder seeds.	Proper planning and regular follow up with ICAR/NSC and Seed Production Agencies to ensure availability of certified/TL seeds.
4	Inability to maximize the participation of milk producers.	Effective implementation of disclosure policy at village level. Awareness campaigns at village level will be conducted. Regular monitoring will be done to identify the gaps in targeted number of milk producers and actual participation. Robust grievance redressal mechanism will be set by PI related to exclusion /denial of opportunity to participate.
5	Resistance for ear tagging of animals by the producers	Awareness meetings regarding benefits of ear tagging will be conducted.

9. Environmental and Social aspects

9.1. Impact on environment

- Necessary Environmental/Statutory Clearance (EC) from concerned regulatory authority has been obtained by the Union, for setting-up of new dairy plant and for establishment of new feed & feed supplement manufacturing infrastructure, as given below:
    - Clearance from Pollution Control Board for establishment of ETP
    - _____
    - _____
- The Union has filled the necessary check list of environmental impacts which is given in **Annex XIII**.
- Due to the nature of activities proposed under the project, there will not be any anticipated change/ alteration of land use and it will be in confirmation to the approved Master Plan/Development Plan of the area.
- The project would put less strain on environment even after increase in capacity of infrastructure for procurement and processing as it would involve use of energy efficient systems, automation and less vehicular movements in villages.
- The setting-up of automated milk processing facility is expected to reduce energy and water consumption. Improved systems would help recirculation of water in dairy plant so as to reduce water consumption. It will also help in reducing milk solid waste. This will reduce the volume of effluents generated in the plant resulting in reduction of carbon footprint at the plant level.
- The project will promote the usage of renewable energy (solar) which can be used by the village level institutions for meeting their daily electricity requirement for operating BMC, AMCU etc. This will also act as platform to promote the usage of clean energy, which will help in reducing carbon footprint at the village level.
- The investments envisaged under the project will help adopting the energy efficient technologies which will result in considerable savings in the operational cost of dairy plants. The project will also help in reducing the pressure on natural resources like use of water in dairy plant, promote use of renewable source of energy like solar energy and use of agro-waste as replacement of fossil fuels, etc.
- The project in no ways either directly or indirectly poses threat to the biodiversity as the construction activities proposed does

not involve extensive clearing or modification of vegetation. If at all any/some tree removal is required, then compensatory tree plantation/landscaping will be done at an appropriate scale.

- During the construction, working environment, health and safety of workers will be taken care of in compliance with the existing laws.

9.2. Land requirement under the project

- The project does not envisage any acquisition of land, rehabilitation and resettlement in the project area.
- Village level institutions would be set up at the building arranged by the union.
- The union already possess excess land to build new dairy plants, compound cattle feed and mineral mixture plants.
- For construction of the DCS/BMC building, only the encumbrance free land owned by DCS or taken on lease from Government/Gram Panchayat will be used.

9.3. Impact on society

- The positive impacts of the project would help in increasing income of milk producers, creation of employment and availability of safe milk to consumers.
- Increased income opportunity for milk producers will also encourage more people to adopt dairying as a source of livelihood.

9.4. Categorization of Project

- Since the land proposed for establishment of new plant under the project is owned by the Union and is encumbrance free, the project will not require any rehabilitation and resettlement of people in the project area. Activities such as strengthening marketing & ICT infrastructure and productivity enhancement will not lead to any adverse impact. Considering the extent of environmental and social impacts, this project is likely to have minimal adverse impact on environment and society. As per the "JICA Guidelines for Environmental and Social Considerations", the Project will be categorized as "C".

10. Key Performance Indicators

10.1. Key Performance Indicators

Detailed year-wise Key Performance Indicators (KPIs) of the sub project are given in the Table below:

Table 26: Key Performance Indicators of the project

No.	Project Performance Indicators	Unit	Base-line figure (Yr ____)	Incremental Targets					EOP (Cumulative Targets)
				Yr 1 (___)	Yr 2 (___)	Yr 3 (___)	Yr 4 (___)	Yr 5 (___)	
A	**Strengthening Milk Procurement Infrastructure**								
A1	New DCS/MPI to be set up	'Nos.							
A2	DCS/MPI to be strengthened	'Nos.							
A3	DCS Building to be established	'Nos.							
A4	DCS/MPI to be covered through Electronic Testing Equipment (AMCU/DPMCU)	'Nos.							
A5	Additional Producers to be enrolled	'000 Nos.							
A6	% of women members of total members enrolled	%							
A7	Capacity of BMCs to be installed	TLPD							
A9	BMC Building to be established	'Nos.							
A10	Methylene Blue Reduction time (MBRT) of raw milk	in mins							
A11	Milk Procurement (Annual)	TKgPD							
B	**Strengthening of Processing Infrastructure**								
B1	Milk Processing Capacity to be created	TLPD							
	Reduction in effluent generation *(in case of refurbishment of plant)*	%							
	Reduction in electricity usage *(in case of refurbishment of plant)*	KWH/ litre of milk processed							
	Reduction in usage of fossil fuels *(in case of refurbishment of plant)*	Litres/ litre of milk processed							
B2	Value Added Products Capacity to be created	TLPD/ MTPD							
	Product 1 ____	TLPD/ MTPD							
	Product 2 ____	TLPD/ MTPD							
	Product 3 ____	TLPD/ MTPD							
B3	Feed & Feed Supplement	MTPD							

No.	Project Performance Indicators	Unit	Base-line figure (Yr ____)	Incremental Targets					EOP (Cumulative Targets)
				Yr 1 (___)	Yr 2 (___)	Yr 3 (___)	Yr 4 (___)	Yr 5 (___)	
	Manufacturing capacity to be created								
	Cattle Feed	MTPD							
	Bypass Protein	MTPD							
	Mineral Mixture	MTPD							
C	**Strengthening of marketing Infrastructure**								
C1	Milk Parlour	'Nos.							
C2	Walk-in-Cold Store	'Nos.							
C3	Insulation for Vans	'Nos.							
C4	Liquid Milk Sale by the PI	TLPD							
C5	% increase in the sales volume of Value Added Products	%							
D	**Support for ICT**								
D1	DCS to be covered under AMCS	'Nos.							
E	**Productivity Enhancement – *through nutritional interventions***								
E1	**Calf Rearing Programme (CRP)**								
1	Villages to be covered	Nos.							
2	Pregnant Animals to be covered	Nos.							
3	Female Calves to be covered	Nos.							
E2	**Animal Nutrition Advisory Services**								
1	Villages to be covered	Nos.							
2	Farmers to be covered	Nos.							
3	Animas to be covered	Nos.							
E3	**Fodder Development**								
1	Fodder seed distributed								
	-Fodder Seed distributed	MT							
	-Plantation of root/stem cuttings	Lakh nos.							
	-Plantation of fodder trees	Lakh nos.							
2	Mower distributed	Nos.							
	-High speed wet biomass management unit	Nos.							
	-Upto 5 HP	Nos.							
	-5 to 15 HP	Nos.							
	-Over 15 HP	Nos.							
3	Chaff Cutter distributed (power/manual)	Nos.							
4	Fodder storage godown	Nos.							
5	Silage Unit created	Nos.							
6	MTC set-up	Nos.							
7	Villages to be covered	Nos.							
8	Farmers to be covered	Nos.							
F	**Training and Capacity Building**								
F1	Persons to be trained/capacity developed	'Nos.							
	Officers	'Nos.							
	Staff	'Nos.							
	Farmers	'Nos.							

10.2. Socio-economic benefits:

The project will provide an avenue for milk producers for sale of milk bringing about a positive change at village level. The project will result in socio-economic benefits by increasing income of milk producers as well as creation of employment.

11. Means of Finance and Sub Project Sustainability

11.1. Means of Finance

The Union proposes to avail financial assistance under the project 'Dairying through Cooperatives – key to sustainable livelihood' project. The Union will arrange its contribution from its own resources. In this regard, a copy of the Board resolution of the Milk Union is attached at **Annex XIV**.

The total project outlay is Rs. ____ lakh with Rs. ____ lakh as grant-in-aid, Rs. ____ lakh as loan and Rs. ____ lakh as State/PI's contribution. Component wise break-up of loan, grant and State/PI's contribution is given below:

Table 27: Component wise Financial Outlay

No.	Component	Financial Outlay (Rs. in lakh)			
		ODA Loan	Grant	State/PI's Contribution	Total
A	Strengthening Milk Procurement infrastructure				
B	Strengthening Processing Infrastructure				
B.1.	- Milk processing facilities and manufacturing facilities for Value Added Products				
B.2.	- Feed & feed supplements manufacturing infrastructure				
C	Support for Marketing infrastructure				
D	Support for ICT Infrastructure				
E	Productivity Enhancement				
F	Training & Capacity Building				
	Total				

The year wise financial outlay is given in the table below:

Table 28: Total Financial Outlay of the Sub Project (Rs. lakh)

No.	Particulars	2021 -22	2022 -23	2023-24	2024 -25	2025-26	Total
A	Strengthening Milk Procurement infrastructure						
B	Strengthening Processing Infrastructure						
B1	Milk processing facilities and manufacturing facilities for Value Added Products						
B2	Feed & feed supplements manufacturing infrastructure						
C	Support for Marketing infrastructure						
D	Support for ICT Infrastructure						

No.	Particulars	2021 -22	2022 -23	2023-24	2024 -25	2025-26	Total
E	Productivity Enhancement – *through nutritional interventions*						
F	Training and Capacity Building						
	Total						
	Grant (GoI)						
	Loan						
	PI's/State's Contribution						

Component and year wise physical target and financial outlay is given in **Annex XV**.

11.2. Security

The detail of the security available with the Union is given below:

Table 29: Details of security available with the Milk Union

Particulars	Location	Area (in acres)	Ownership	Book value (Rs. crore)
Land	PQR		Owned by Union	
	LMN			
	Chilling centre 1			
Building	PQR		Owned by Union	
	Chilling centre 1			
Plant/machinery	PQR		Owned by Union	
	Chilling centre 1			
Total				

Particulars	Amount (Rs. In lakh)
Loan envisaged under current proposal	
Total loan	
Net block	
Total assets to be created under project	
Total assets	
Security times	

The security available with the Union is ___ times more than the loan amount of Rs. _____ lakh.

11.3. Sustainability of the sub project activities

- Under Strengthening of milk procurement infrastructure component, setting up of new DCS and installation of BMCs & AMCUs have been envisaged. To make new DCS sustainable, initially for 3 years, salary of the DCS secretary shall be provided on tapering basis under the project. After that it is expected that DCS would be collecting adequate milk so as to meet DCS management expenses from revenue generated from the weight volume difference/ DCS commission/ local milk sale to make the DCS self-sustainable. The sustainability of new DCS is given in **Annex XVI**. Also, the sustainability of BMC is given in **Annex XVII**.

- The Union will continue the implementation of Productivity Enhancement activities from its own funds to reap benefits of nutritional interventions in the long run.

11.4. Financial analysis of the sub project

- The Union has proposed to avail Rs. ____ loan for establishment of new milk processing plant along with value added products facilities, feed & feed manufacturing plant, DCS/BMC building, marketing and ICT infrastructure.
- Based on savings and improved sales realisation by establishment of new milk processing plant/ value added product plant/ feed & feed manufacturing plant, the projected material balancing statement and projected operating statement for the project is worked out and is attached at **Annex XVIII**. The summary of financial indicators is given in the Table below:

Table 30: Summary of financial indicators for the project

No	Financial Indicators	Base case	**Sensitivity** (10% reduction in procurement & sales)	Norms
1	Return on investment (RoI)			>10%
2	Debt Service Coverage Ratio (DSCR)			>1.50

11.5. Sensitivity analysis

Considering the projected operations of the Union, the Return on Investment (ROI) and Debt Service Coverage Ratio (DSCR) works out to ____**%** and ____ **times** respectively at 100% procurement and sales. After providing 10 % sensitivity in both milk procurement and sales volume i.e. 10% reduction in both procurement and sales, the projected ROI and DSCR works out to ____ % and _____ times respectively.

***

Annex I: List of existing chilling, testing and processing infrastructure

❖ Milk chilling plant

No.	Location			Capacity	Owned by *(Union/ DCS)*	Status *(functional/non-functional)*
	District name	Taluka Name	Village Name & Census code			
1						
2						

❖ Bulk Milk Coolers (BMC)

No.	Location			Capacity	Owned by *(Union/ DCS)*	Status *(functional/non-functional)*
	District name	Taluka Name	Village Name & Census code			
1						
2						

❖ Automatic Milk Collection Units (AMCU)

No.	Location			Owned by *(Union/ DCS)*	Status *(functional/ non-functional)*
	District name	Taluka Name	Village Name & Census code		
1					
2					

❖ Data Processing and Milk Collection Units (DPMCU)

No.	Location			Owned by *(Union/ DCS)*	Status *(functional/ non-functional)*
	District name	Taluka Name	Village Name & Census code		
1					
2					

❖ Electronic Adulteration Testing Machine

No.	Location			Owned by *(Union/ DCS)*	Status *(functional/ non-functional)*
	District name	Taluka Name	Village Name & Census code		
1					
2					

❖ Milk Testing Laboratories

No.	Location			Capacity	Owned by *(Union/ DCS)*	Status *(functional/non-functional)*
	District name	Taluka Name	Village Name			
1						
2						

❖ Milk processing plant

No.	Location			Capacity	Owned by *(Union/ DCS)*	Status *(functional/non-functional)*
	District name	Taluka Name	Village Name			
1						
2						

Note: Rows may be added under each category suitably

Annex II: List of villages proposed for setting-up of new DCS/ strengthening of existing DCS

No.	District name	Taluka Name	Village Name	Census Code (as per Human Census 2011)	Status *(registered / un-registered)*	Existing Milk Production (TKgPD)	Existing Milk marketable surplus (TKgPD)	Expected Milk procurement (TKgPD) (1st year of operation)
1								
2								
3								
4								
5								
6								
7								
8								
9								

Annex III: List of proposed village wise DCS for installation of Electronic Milk Testing Equipment (AMCU)

No.	District name	Taluka Name	Village Name	Census Code (as per Human Census 2011)	Name of DCS	Existing Milk procurement (TKgPD)	No of members (Nos.)	Existing testing facility with DCS
1								
2								
3								
4								
5								
6								
7								
8								
9								

Annex IV: List of proposed BMC village location and capacity

No.	District name	Taluka Name	Village Name	Census code (as per Human Census 2011)	Number of villages to be linked with BMC village	Milk procurement (TKgPD) (BMC DCS+linked villages)		Proposed No. of BMC	Proposed Capacity (KL)
						Existing (2020-21)	Projected (2025-26)		

Annex V: Details of existing land area & civil structure and existing plant equipment

A. Details of existing land area and civil structure

(Information to be provided for each dairy plant separately if the Union has more than one dairy plant)

Name, Location & address of dairy plant: _____

Sr No	Description	Area/ Volume	Unit	Number of floors	Year of construction/ processing	Present condition (Good/Needs renovation)	Remarks
1	**Total land area of the plant***		Acre				
2	**Total built up area* (ground floor area only)**		Sq m				
3	**Total Road & Hard Park area**		Sq m				
4	**Area available for future expansion**		Acre				
5	**Production Block details#**						
(i)	Milk reception block (inclusive of can & tanker reception)		Sq m				
(ii)	Liquid milk processing & packaging block		Sq m				
(iii)	Milk Powder Plant		Sq m				
(iv)	Milk Product Block (provide product names in remarks column; In case of individual product blocks provide separate areas)		Sq m				
6	**Utilities Block details#**						
(i)	Refrigeration block		Sq m				
(ii)	Steam generation block		Sq m				
(iii)	Electric Substation block		Sq m				
(iv)	Transformer Yard		Sq m				
(v)	Fuel storage area		Sq m				
(vi)	Waste disposal area		Sq m				

Sr No	Description	Area/ Volume	Unit	Number of floors	Year of construction/ processing	Present condition (Good/Needs renovation)	Remarks
(vii)	Water storage & treatment block		Sq m				
(viii)	Water storage tank capacity		Cu m				
(ix)	Effluent Treatment Plant		Sq m				
7	**Non industrial Blocks#**						
(i)	Administrative block		Sq m				
(ii)	Workers Amenities block		Sq m				
(iii)	Security cabin		Sq m				
(iv)	Toilet block		Sq m				
(v)	Car park/cycle stand		Sq m				

* - Please provide Plant Site Layout drawing, if available

- Please provide ground floor area for each building to ascertain free land area available for expansion/new installation. Also provide equipment layout drawings, if available

B. Details of existing plant equipment

(Information to be provided for each dairy plant separately if the Union has more than one dairy plant)

Name, Location & address of dairy plant:

Capacity of Plant: ____ TLPD

Please add rows wherever required in order to provide complete details of plant & machinery)

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
A	**Liquid milk**	**Reception**	Can Washer I	Straight/ rotary					
			Can Washer II	Straight/ rotary					
			Raw Milk chiller I						
			Raw Milk chiller II						
		Milk storage	Raw milk storage Tank/ silo I	Horizontal/ Vertical					
			Raw milk storage Tank/ silo II	Horizontal/ Vertical					
			Raw milk storage Tank/ silo III	Horizontal/ Vertical					
			Pasturised Milk storage Tank/Silo I	Horizontal/ Vertical					
			Pasturised Milk storage Tank/Silo II	Horizontal/ Vertical					
			Pasturised Milk storage Tank/Silo III	Horizontal/ Vertical					
		Milk processing	Milk pasteuriser I						
			Milk pasteuriser II						

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
			Cream separator I	Self / manual cleaning					
			Cream separator II	Self / manual cleaning					
			Homogeniser						
			Cream pasteuriser I						
			Cream pasteuriser II						
		Milk packing	Milk pouch packing machine I	Pneumatic/ Mechanical					
			Milk pouch packing machine II	Pneumatic/ Mechanical					
			Milk pouch packing machine III	Pneumatic/ Mechanical					
			Milk pouch packing machine IV	Pneumatic/ Mechanical					
			Horizontal milk storage tank I						
			Horizontal milk storage tank II						
			Horizontal milk storage tank III						
			Crate washer						
B	**Butter making**		Butter churn						
			Continuous butter making machine						
			Butter milk silo/tank						
			Butter packing machine	Bulk/ consumer					
C	**Ghee Making**		Ghee boiler I						

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
			Ghee boiler II						
			Ghee boiler III						
			Ghee clarifier						
			Ghee pouch packing machine						
			Ghee consumer packing machine						
			Ghee Tin (15 kg) packing machine						
D	**Milk powder plant**		Milk Silo						
			Evaporator (water evaporation capacity to be provided)	MVR/ TVR					
			Dryer (water evaporation capacity to be provided)	No of stages					
			Supply air heater type	FO/ Steam heated					
			Vibro-fluidiser						
			Powder bulk packing	Manual/ Automatic					
			Powder consumer packing	Semi- auto/ Automatic					
E	**UHT**		Milk steriliser						
			Aseptic filling machine						
			Tray packing						
			Shrink wrapping						
F	**Indigenous products**		*Please mention equipment name…….*						Details of major equipment
			Please mention equipment name…….						

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
			Please mention equipment name…….						to be provided
			Please mention equipment name…….						
G	**Electricals**		HT breaker panel	OCB/ MOCB/ VCB					
			Distribution transformer	Onload / off load tap changer					
			Power control centre						
			Capacitor bank						
			DG set I						
			DG set II						
			Sub Station						
H	**Refrigeration**		Refrigeration compressor I (high stage)	Reciprocating/ Screw					
			Refrigeration compressor II (high stage)	Reciprocating/ Screw					
			Refrigeration compressor III (high stage)	Reciprocating/ Screw					
			Refrigeration compressor (low stage)	Reciprocating/ Screw					
			Economiser						
			Condensors	Atmospheric/ Evaporative / PHE/ Shell & tube					

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
			Condensor water pumps						
			Ice bank tank (coil length to be provided)						
			Ice silo (coil length to be provided)						
			Chilled wsater pumps						
			Receiver I						
			Receiver II						
			Refrigerant pump						
			Milk Cold store						
			Butter cold store						
			Butter deep freeze						
I	**Steam generation**		Boiler I	Fire tube/ Water tube					
			Boiler II	Fire tube/ Water tube					
			Boiler III	Fire tube/ Water tube					
			Fuel oil storage tank						
			Coal handling equipmet						
			CNG storage						
J	**Air Compressor**		Compressor I	Reciprocating/ Screw					
			Compressor II	Reciprocating/ Screw					
			Air Receiver	Vertical/horizontal					
K	**Hydroflow**		Hydroflow tank I						
			Hydroflow tank II						

Sr No	Section	Area	Existing Equipment name	Type	Capacity	Manufacturer	Year of installation	Working condition	Remarks
			Raw water pumps						
			Water softening plant						
			RO plant						
			DM water plant						
			Treated water pumps						
L	**Effluent treatment plant**		Effluent treatment plant	Aerobic/ Unaerobic & aerobic					

Annex VI: Filled-in site selection format

A. Milk processing plant

Name of the proposed project : _____

Location of Site : _____

District : _____

1. Land map : Enclosed /Not available

2. Survey map at the site showing :

- North point :
- Scale (mm 1:800) :
- Area and Dimensions of the plot : _____Sq.Mtrs. [____ M x ___ M]
- Permanent & Temporary Structure :
- Electrical line (HT/LT with KV) : _____ _____
- Telephone lines (Trunk/Local) : _____ _____
- Existing sewerage/storm Water drains, if any : Yes/no
- Existing important tree :
- Well, ponds :
- Mounds :
- Contours :

Note: The survey map if available should be enclosed. Otherwise a rough sketch showing important items out of the above list should be prepared and enclosed.

3. Source of land and survey maps If available : _____ _____

4. R.L. of site, if site is fairly flat : _____ _____

5. R.L. of high and low points, if site Undulatory : _____

6. Maximum HFL at site : _____ Cms.

7. Frequency of HFL : _____

8. R.L. of nearest National Or State Highway : _____

9. Minimum depth of subsoil water (below Existing ground) : _____

10. Type of foundations used in the vicinity Of site or the nearest town for 2 to 3 Storeyed building : _____

11. Local information on the soil bearing: Capacity _____

12. Local information on the type of soil (Silty/Boulder/ Rock) Encountered at the site at shallow and Deep depths : _____

13. Soil testing report from a nearby place to be enclosed if available : _____

14. Nearest Railway Station :

- Distance of site : _____
- M.G./B.G./N.G. : _____
- Important trains passing through Station :
- Both passenger and goods : _____
- Railway zone : _____

15. Is a railway siding possible : Yes /No

16. Name & address of DRM to be Contacted : _____

17. Nearest Highway :_____

18. a) Distance from nearest Highway :_____

b) Distance from Municipal Limits :_____

19. General width of the roads in the Area :_____ Metres

20. Approach road to the site, if any : _____Yes/No

21. Length of approach road required : _____ Metres

22. Nearest source of

a) Natural water supply : _____ Well/River/Canal/Pond

b) Municipal water supply : _____Well/River/Canal/Pond

23. Is Municipal supply possible ? : Yes / No

If yes, size of existing Pipe line at the: _____Cms.
Nearest Point of municipal supply

24. Any open wells in the area : Yes / No

a) Lowestlevel of sub-soil : _____ Metres
Water encountered in
Poorest monsoon season

b) General level of water : _____ Metres

c) Yield of well : _____Metres/hr.

25. Any tubewells in the area/ : Yes /No
Neighbourhood

a) Size of the well & depth : _____ Cms. _____Meters

b) HP of pump : _____HP

c) Yield of tube well : _____Litres/hr.

d) Strata chart if available : Yes / No

e) Distance of tubewell from : _____Metres
Site

26. Is any sanction required from : _____Metres
Local authorities for drilling of tube
Wells

27. Address of nearest office of Central : _____
Ground Water Board or any similar
State agency

28. A hydrological map of the area, : Yes/No.(to be enclosed if available)
If possible

29. Effluent disposal :

a) Distance and location of nearest : _____Metres
Possible place

b) Capacity of municipal drain/ : _____Cusece
Nullah etc.

c) Is it required to be treated before : _____ Yes/No
Disposal as per the rules of local
Authorities (If yes, to indicate the Characteristics
of the
treated Efluent before disposal such
as
BOD & PH etc.)

d) How is effluent of the nearby :
Industries disposed off

30. Power Supply

a) Is any HT line passing throuth site : _____ Yes/No

(If yes, indicate voltage and Whether it is agricultural feeder)

b) If no, distance of nearest HT line From site : _____Metres

c) Authorities to be approached for required electrical load. (Electrical load informations must be available with the officer visiting site). : _____

d) A copy of tariff rules, if possible : (to be enclosed)

e) Authorities for temporary power if available : _____

f) Upto what load can LT power be made Available : _____ KVA

31. Telephone line

a) Distance of nearest telephone line : _____Metres

b) Authority to be approached for sanction :_____

32. Industries in the neighbourhood :

33. a) Nearest Cattle Feed Plant : _____KM

b) Nearest Chilling Centre : _____KM

c) Nearest Dairy : _____KM

d) Nearest industries using milk with Details of capacity etc. and their Common problems :_____

34. General water in the area :

a) Wind or dust storms and their frequency, direction of wind, velocity :_____

b) Yearly rainfall : _____mm.

c) Monsoon period : _____month

d) Maximum & minimum temp. : _____Deg.C._____Deg.C.

e) Type of trees & plantation in the Neighbourhood : _____

f) Snow fall : _____mm.

35. Name of local reputed contractors:

a) Civil : _____

b) Electrical/Mechanical : _____

c) Sanitary : _____

d) Suppliers : _____

e) Transporters : _____

f) Chamber of commerce : _____

36. Address of local PWD Office : _____

37. Minimum wages applicable in the Area. : _____Rs./day

38. Addresses of :

a) Factory inspector : _____

b) Boiler inspector : _____

c) Electrical Inspector : _____

d) Explosive inspector : _____

e) Civil Supplies Deptt. : _____

39. Nearest Cement Factory : _____

40. Address of nearest HSL/TATA/ TISCO stockyard : _____

41. Local materials used for construction : _____
And their rates

42. Location & distance of the nearest Petrol/diesel filling station. : _____

B. (*Same format to be used for site selection of feed & feed supplement manufacturing infrastructure*)

Annex VII: Civil and equipment requirement along with specifications

A. For establishment of ____ TLPD capacity milk processing plant

i. Summary of Cost estimates

No.	Description	Amount (Rs. lakh)
1	Civil Works	
2	Processing & Production Equipment	
3	Service Equipment	
4	Miscellaneous Equipment	
5	Erection	
6	Technical Service Fee @ 5.5% On Sl. Nos. 1 – 5	
7	GST on TSF @ 18%	
	Total Project Cost (Rs Lakhs)	

ii. Cost estimates – Civil works

Description	Qty	Unit	Unit Rate Rs	Sub Total Rs.	Amount Rs. Lakhs
CIVIL WORKS					
LAND AND DEVELOPMENT					
LAND AND DEVELOPMENT					
Land development, landscaping, soil investigation & land survey					
INDUSTRIAL BUILDING					
INDUSTRIAL BUILDING					
Production Block (including cold store, deep freezes)					
Service block					
Misc. Industrial buildings: Fuel yard, Transformer yard, foundation of milk silos, ammonia and air compressors, ice silos/IBT, boilers and chimney, structural pipe bridge etc.					
STORAGE FACILITIES/BUILDINGS					
STORAGE FACILITIES/BUILDINGS					
Powder godown					
Packing material store					
Chemical store					
Spare parts store					
General Godown					
Scrap Yard					
NON INDUSTRIAL BUILDINGS					
NON INDUSTRIAL BUILDINGS					
Administrative block					

Description	Qty	Unit	Unit Rate Rs	Sub Total Rs.	Amount Rs. Lakhs
Workers Amenities					
Security complex					
Toilet block					
Parking cycle/scooter stand					
MS gates					
COMPOUND WALL AND OTHER BUILDINGS					
COMPOUND WALL AND OTHER BUILDINGS					
Compound wall/Chain link fence					
BUILDING FURNISHINGS					
OFFICE FURNISHINGS AND EQUIPMENT					
Lab furniture					
Site Furniture					
Misc. Furnishing					
EFFLUENT TREATMENT PLANT					
EFFLUENT TREATMENT PLANT					
Civil, mechanical, electrical & erection works for ETP for 2 LLPD dairy					
ROAD AND PAVEMENTS					
ROAD AND PAVEMENTS					
Concrete roads /Hard Park					
ELECTRIFICATION					
INTERNAL ELECTRIFICATION					
Electrification Contract					
Lighting Fixtures and Fans					
WATER SUPPLY AND DRAINAGE					
WATER SUPPLY AND DRAINAGE					
UG sump 2.0 lakh Litres					
Storm water drainage					
Rain water harvesting with recharge wells					
External sanitary line					
CONSULTANTS SERVICES					
CONSULTANTS SERVICE FEES					
Architects & structural consultants fees @ 3.5% of civil works					
CIVIL CONTINGENCIES					
CIVIL CONTINGENCIES					
Civil contingencies @ 6 %					
TOTAL FOR CIVIL WORKS					

iii. Cost estimates – Equipment

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
PROCESS AND PRODUCTION EQUIPMENT					
RECEPTION EQUIPMENT					
RECEPTION EQUIPMENT INCLUDING STORAGE					
Tanker unloading hose with fittings (2 No. for unloading, 2 no. for CIP)					
Tanker unloading pump					
Disc type Inline strainer					
SS De-aeration vessel					
Reception & tanker CIP Control panels					
Self supported hot dip galvanised Steel platforms for approach of tanker man ways with SS railing					
Raw Milk Chiller (10 - 4 Deg C)					
Raw Milk Silos					
CIP Return Pump					
Mass flow meters					
CHILLING & PROCESSING EQUIPMENT					
CHILLING & PROCESSING EQUIPMENT FOR MILK AND CREAM					
Milk transfer pump from RMST to Pasteurizer					
Inter silo Milk Transfer/Raw Milk despatch pump					
Mass flow meters					
Milk Pasteuriser with all accessories					
Milk Pasteuriser with accessories for curd milk					
Self Cleaning Tripurpose centrifuge with Auto Standardisation Unit					
Homogeniser with accessories for milk					
Homogeniser with accessories for curd milk					
Electric hoist with mono rail structure					
Pasteurised Milk Silos (PMST)					
Pasteurised Milk Silos (PMST)					
Pasteurised Milk Despatch Pump					
Pasteurised Milk Despatch Chiller					
Past Milk Inter Silo Transfer pump					
Past Milk Silo to Raw Milk Silo Transfer pump					
CIP Return Pump					
Milk transfer pump to HMST					
Milk Re-Chiller for pouch filling lines					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Milk Dispatch (tanker loading) hose food grade					
Cream balance tank					
Cream transfer Pump with VFD					
Cream Pasteuriser					
Cooling Tower system with pumps					
Cream Storage cum Ripening Tank					
CIP Return Pump					
Cream pump (Lobe) with VFD for transfer of cream to butter section as well as dosing to silo for fat correction					
RECONSTITUTION EQUIPMENT					
Milk RECONSTITUTION SECTION INCLUDING POWDER STORE					
Funnel venturi with pumps					
Water heater PHE with water flow meter					
Duplex Filters					
Reconstitution milk tank					
CIP return pump					
Milk Recirculation-cum-transfer Pump					
Reconstitution milk chiller					
LIQUID MILK FILLING EQUIPMENT					
POUCH FILLING SECTION INCLUDING CRATE WASHING					
Crate washer with drier					
Two tier Crate conveyor with pouch collection table for individual machine and conveying of filled crates upto milk cold room					
Pouch Filling Machines for Liquid Milk					
Milk filling tanks (HMST)					
Milk filling tanks (HMST)					
Left over milk collection & return system					
CIP Return Pumps					
SS packing table					
Electronic weigh scale					
Cooling Water balance tank with accessories					
Cooling water recirculation pump (SS)					
Cooling water PHE Chiller					
Trolley mounted leaky pouch collection tank					
Leaked pouch dump tank					
Inline duplex Strainer					
Leaked pouch milk PHE					
Leaked pouch milk transfer pump					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
RINSE MILK RECOVERY SYSTEM					
Rinse milk recovery tank jacketed & insulated					
Rinse Milk transfer pump to RMST					
Rinse Milk Chiller					
CIP Return Pump					
BUTTER MAKING EQUIPMENT					
CONTINUOUS BUTTER MAKING SECTION					
Cream Transfer Pump (lobe) imported					
Cream Buffer Tank					
Continuous Butter making Machine without provision for automatic salt and moisture correction facility.					
Continuous Butter making Machine with provision for automatic salt and moisture correction facility.					
Salt Dosing Tank on skid					
Dosing Pump					
On line moisture And salt measurement and control system					
Pasteurised Butter Wash Water insulated Tank					
Pasteurised Butter Wash Water Transfer pump					
Butter Wash Water Balance Tank					
Wash Water circulation pump					
Wash Water PHE					
Butter Moulding & Wrapping machines					
Conveyors for the inter-transfer of packed table butter and also to the cold room.					
Butter Milk Storage Tank					
Hopper with auger, covers, level sensors, controls					
Butter trolleys					
LASSI & BUTTER MILK HANDLING SECTION					
Curd Inoculation Tank					
Curd Setting Tank					
SS Shear Pump					
Inoculated Milk/Lassi/Butter Milk transfer pump					
FAT RECOVERY SECTION					
Butter Melting Tank					
Molten Butter Transfer Pump					
Fat Recovery Tank					
GHEE MAKING EQUIPMENT					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
GHEE MAKING & PACKING EQUIPMENT					
Butter Positive Displacement pump					
Butter Melting Vat with PHE based hot water generator					
Molten Butter Transfer Pump					
Pre-stratification Tank					
Ghee boiler					
Ghee transfer pump					
Ghee Settling tanks					
Ghee Clarifier					
Ghee Balance Tank					
Ghee storage cum granulation jacketed tanks					
Ghee Pouch Packing Machine					
Ghee check weighing scale					
Ghee residue trolley with tank					
SS packing tables					
Ghee leaky pouch collection system					
CURD MAKING & PACKING					
CURD, LASSI & BUTTER MILK MAKING & PACKING EQUIPMENT					
Curd milk storage tank					
CIP return pump					
Culture Preparation Tank					
Culture Dosing Pump PD type					
Inoculation/curd setting tank for curd					
CIP Return pump for curd tank					
Sugar dissolving / syrup preparation vat					
Sugar syrup transfer pump					
Pasteurized water tank					
PHE Chiller for cooling sugar syrup & past. water					
Pasteurized water transfer pump					
Sugar syrup transfer pump					
Pouch Filling Machine for curd milk/butter milk /lassi					
Leaky pouch collection system					
Rotary curd cup filling machine indigenous					
Crate washer and conveyor					
Heater for incubation room					
CLEANING IN PLACE EQUIPMENT					
CIP COMMON FACILITY					
Bulk Acid storage tank					
Bulk Lye storage tank					
Chemical unloading pump (for acid & lye)					
Tanker unloading hose					
Acid carbouys unloading tank					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Lye flake dissolving tank with agitator					
Acid Transfer pump					
Lye Transfer pump					
SS tray for bulk tanks and pumps					
PROCESS & Tanker CIP - 3 Circuits					
Lye tank					
Acid Tank					
Hot water tank					
Recuperation tank					
Flush water tank					
Acid Service Tank with dosing pump					
Lye Service Tank with dosing pump.					
Plate Heat exchangers					
Duplex Inline Filters					
CIP forward pumps					
Recirculation pump for acid & lye solution tanks					
TANKER CIP - single Circuits					
Lye tank					
Acid Tank					
Hot water tank					
Recuperation tank					
Flush water tank					
Acid Service Tank with dosing pump					
Lye Service Tank with dosing pump.					
Plate Heat exchangers					
Duplex Inline Filters					
CIP forward pumps					
Recirculation pump for acid & lye solution tanks					
CIP FOR IP BLOCK					
Lye tank					
Acid Tank					
Hot water tank					
Recuperation tank					
Flush water tank					
Lye & Acid dosing system					
Acid Transfer pump					
Lye Transfer pump					
Acid Service Tank					
Lye Service Tank					
Plate Heat exchangers					
Duplex Filters					
CIP forward pumps					
CIP Return Pumps					
MILK PIPING AND FITTINGS					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
MILK & CIP PIPING AND FITTINGS					
SS Pipes, fittings, flow plates, SS supports, imported Mix proof & single seat valves, valve battery trays etc.					
INSTRUMENTATION & AUTOMATION					
CONTROL & INSTRUMENTS, AUTOMATION					
Controls & Instrumentation					
DCS Automation system with HMIs					
MIS System					
TOTAL					
PROCESS AND PRODUCTION CONTINGENCIES					
PROCESS AND PRODUCTION CONTINGENCIES					
Process and Production contingencies					
TOTAL FOR PROCESS & PRODUCTION					
SERVICE EQUIPMENT					
REFRIGERATION SYSTEM					
REFRIGERATION PLANT					
Refrigeration Compressor Units (1 W + 1 S) suitable for operating at -10 Deg C suction and +40 Deg C condensing Temp.					
Refrigeration Compressor Units (1 W + 1 S) suitable for operating at -25 Deg C suction & -10 Deg C discharge					
Motors for main Compressors					
Motors for booster Compressors					
VFD Starters for high stage compressor					
VFD Starters for low stage compressor					
Common Economizers one each for -5 Deg C & -30 Deg C compressors					
Oil Loading & unloading system					
Pre-Chiller working at -2 deg C Complete with liquid accumulator, Anti-freeze temperature controller, CIP arrangement - Flow rate of water 180 Cu.m/Chiller					
Evaporative type condenser imported					
Liquid ammonia pumps, 15 Cum/Hr for -5 deg C)					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Liquid ammonia pumps1.5 Cum/Hr for -30 deg C					
HP Liquid ammonia Receiver with standard fittings.					
IBT System with 4000 RM coil					
Refrigerant lines controls					
Priority vessel					
Miscellaneous items					
Liquid accumulator, one each for system working at -5 deg C and - 30 deg C					
Oil Cooler - refrigerant cooled type					
Oil Rectifier for -2 deg C, -10 deg C & -25 deg C systems					
Chilled water pumps (3W + 1S)					
Defrost water supply & return pump (2W + 1S)					
Automatic air purger					
Motor Control Centre for Refrigeration					
PLC / DCS based Plant Central Automation					
Copper Power, control & instrumentation cables					
Earthing materials, cable trays & electrical accessories					
Local instruments on all vessels/pipelines					
Ammonia Piping, valves & fittings					
Condenser water Piping, valves & fittings					
Defrost water, Chilled water Piping/drain, valves & fittings for process upto the outlet of the pump NRV.					
Insulation of refrigerant and chilled water lines with PUF sections and cladding					
Galvanised MS Structural supports for piping including supports for piping outside the building, ladder etc.					
Spares					
Expansion tank for chilled water					
First Charge of ammonia Gas					
First Charge of Compressor Oil & Lubricants					
COLD STORAGES/ DEEP FREEZERS INSULATION					
USING PUF SANDWICHED PANELS & FDC UNITS					
Milk Cold Storage					
Dahi blast cooler					
Dahi Cold storage					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Chaach/Lassi Cold Storage					
Paneer Cold Storage					
Butter Cold Store					
Curd & Paneer Cold Store					
Curd incubation room					
Butter deep freeze for butter					
STEAM GENERATION SYSTEM					
STEAM RAISING PLANT					
Coal/ wood/briquette fired Steam Boiler with ESP, auto blow down and Air preheating					
Chimney & Ducting					
Feed Water Tank insulated & Water piping					
HP Steam & Condensate Pipes & Fittings IBR					
Steam Pressure Reducing Station IBR					
LP Steam Pipes & Fittings					
Condensate collection and pumping system					
Insulation of Steam Piping					
SOLAR WATER HEATING SYSTEM					
CST for generating hot water at 80 deg C					
WATER HANDLING SYSTEM					
WATER SYSTEM					
Automatic duplex filtration plant					
Raw filtered water hydroflow system with vertical pumps (1W + 1S)					
Automatic duplex water softening plant					
Soft water hydroflow system with vertical pumps (1W + 1S)					
Automatic DM or RO water plant					
DM or RO water buffer SS storage tank					
RO water pumps (1W + 1S)					
Water pipes, valves & fittings					
COMPRESSED AIR HANDLING SYSTEM					
AIR HANDLING SYSTEM					
VFD driven non-lubricating screw air compressor in acoustic enclosure & with after cooler & moisture separator (1 W + 1S)					
SS Air Receiver with accessories					
Air Dryer refrigerated type					
Compressed air pipes & fittings					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
STRUCTURAL BRIDGES/PLATFORMS					
SS structural platforms in tanker ways/CIP tanks/ghee equipment/silos spiral ladders, pouch filling machines, cross over bridge for crate conveyors etc.					
INDUSTRIAL ELECTRICAL HT					
INDUSTRIAL ELECTRICAL HT					
2 panel 11 KV HT VCB and Protection system					
HT Cable, 11 KV, XLPE					
Two pole structure with accessories					
OLTC Transformer 11 KV/415V with RTCC Panel					
INDUSTRIAL ELECTRICAL LT					
INDUSTRIAL ELECTRICAL LT					
LT Bus duct					
Power control centre (PCC)					
MCC's for LMP, Ghee, Curd, UHT and boilers					
Power & control cables					
Instrumentation cables					
RCPs, Frequency drive panel					
Earthing (Power & instruments/automation)					
Capacitor Panels with APFCR & Capacitors					
DG Set with AMF Panel					
Miscellaneous items					
- GI & SS cable trays					
- Isolators (with Emergency push buttons)					
- Rubber Mats					
- SS Conduits					
TOTAL SERVICE EQUIPMENT					
SERVICE EQUIPMENT CONTINGENCIES					
SERVICE EQUIPMENT CONTINGENCIES					
Service equipment contingencies					
TOTAL FOR SERVICE EQUIPMENT					
MISCELLANEOUS EQUIPMENT					
LABORATORY EQUIPMENT					
LABORATORY EQUIPMENT					
Gerber Test Equipment					
MBR Test kit					
Sediment Analyser					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Phosphatase Test kit					
Raw milk density meter					
Acidometer					
Sampling Kit					
Plate count test kit					
Swab test kit					
Advance range electronic pH meter					
Chlorine Sanitiser strength analyser					
Majonnier Fat tester					
Water examination test kit					
Infra red milk analyser					
Electric autoclave					
Polarimeter					
Microscope					
Magnetic stirrer					
Causticity / acidity test equipment					
Coliform bacteria test equipment					
Colony counter					
High precision weighing balance					
Heavy duty hot air oven					
Incubator					
Distilled water unit					
Antibiotics test kit					
Anaerobic count analysis equipment					
Microwave oven					
Laboratory, equipment, glassware, chemicals					
WORKSHOP MACHINES					
WORKSHOP EQUIPMENT AND TOOLS					
Workshop tools & equipment					
FIRE FIGHTING SYSTEM					
FIRE FIGHTING SYSTEM					
Fire extinguishers for LMP, control room, office, Workers' amenities, production building, butter cold store & deep freeze, ghee store, general store & lignite/coal/wood/ briquette storage area					
WEIGHING EQUIPMENT					
WEIGHING EQUIPMENT					
Elec. Weigh bridge					
Elec. Weigh scale in central store					
COMMUNICATION EQUIPMWNT					
EPABX AND TELEPHONE					
EPABX and telephone system					
SPARE PARTS					
SPARE PARTS					

Description	Capacity	Qty	Unit Price	Total Price	Total Price in Lakh Rs
Spares					
MISCELLANEOUS ITEMS					
Steam & Water Mixing batteries					
Misc items					
TOTAL					
MISCELLANEOUS EQUIPMENT CONTINGENCIES					
MISCELLANEOUS EQUIPMENT CONTINGENCIES					
Miscellaneous equipment contingencies					
TOTAL FOR MISC EQUIPMENT					
ERECTION					
ERECTION					
ERECTION, TESTING AND COMMISSIONING					
Erection of LMP, utilities, Misc. items + Misc. like insurance/water charges/ Electricity etc.					
TOTAL					
ERECTION CONTINGENCIES					
ERECTION CONTINGENCIES					
Erection contingencies					
TOTAL FOR ERECTION OF EQUIPMENT					

B. (Similar format to be used for Cattle feed, By-pass protein and Mineral Mixture plant)

Annex VIII: Marketing and sales plan for milk & milk products over next 3 years

Table 1.A: Breakup of Projected Liquid Milk (LM) Sales

Particulars	Unit	Base Yr.	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
Urban Population	Lakhs						
Per capita Consumption	Gms/ day						
Liquid Milk Demand Potential	TLPD						
Total Milk sales by the Union	TLPD						
LM Sales through retailers	TLPD						
Full Cream Milk	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
200 ml	TLPD						
Standard Milk	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
200 ml	TLPD						
Toned Milk	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
200 ml	TLPD						
Double Toned Milk	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
200 ml	TLPD						
Any other Variant	TLPD						

Particulars	Unit	Base Yr.	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
200 ml	TLPD						
Breakup of Institutions LM Sales	TLPD						
Hotels	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
Restaurants	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
Caterers	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
Tea stall	TLPD						
5000 ml	TLPD						
1000 ml	TLPD						
500 ml	TLPD						
Others	TLPD						
Union's LM market share	%						
Liquid milk marketing as % of procurement							

Table 1.B: Breakup of Projected Value Added Products (VAP) Sales

Breakup of Products Sales	Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
Total Products to be sold by Union	Nos						
Product 1	TLPD/ MTPD						
Product 2							
Product 3 etc							
New Product launch 1							

Breakup of Products Sales	Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
New Product launch 2							
New Product launch 3 etc							
Products to be sold through Retailers & Parlours							
Product 1	TLPD/ MTPD						
Product 2							
Product 3 etc							
New Product -1							
New Product -2							
New Product -3 etc							
Products to be sold through Institutions							
Product 1	TLPD/ MTPD						
Product 2							
Product 3 etc							
New Product -1							
New Product -2							
New Product -3 etc							

Table 1.C: Distribution & retail network

Particulars		Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
Distribution network								
Distributors		Nos						
Distributor Routes		Nos						
Vehicles used for milk distribution		Nos						
Insulated vehicle	Own Vehicle	Nos						
	Hired vehicle	Nos						
Vehicle without insulation	Own Vehicle	Nos						
	Hired vehicle	Nos						
Retailers		Nos						
Total Retailers		Nos						

Particulars	Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
Retailers with visi cooler	Nos						
Milk Parlours/ Booths	Nos						
Milk Parlours/booths with Visi cooler	Nos						
Institutional Buyers	Nos						
Hotels	Nos						
Restaurants	Nos						
Caterers	Nos						
Tea stall	Nos						
Other Institutions	Nos						

Table 2: Advertisement & Sales Promotional activities undertaken by Union

Particulars	Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
Outdoor Media							
Hoardings	Nos						
Ad-poles							
Sign boards	Nos						
Banners – Vinyl	Nos						
Danglers	Nos						
Buntings	Nos						
Glow sign Boards	Nos						
Wall paintings	ft^2						
Vehicle Paintings/Vinyl Pasting	ft^2						
Parlour Paintings/Vinyl Pasting	ft^2						
Retail shop Painting	ft^2						
Ads on Bus Shelter	ft^2						
Print Media							
Newspaper Ads	Nos						
Newspaper insertions	Nos						
Pamphlets	Nos						

Particulars	Unit	Base Yr.	Yr -1	Yr -2	Yr-3	Yr-4	Yr-5
Stickers	Nos						
Brochures	Nos						
Others							
Electronic Media							
Radio Jingles	Nos						
Ads in Cable TV Network	Nos						
Ads in Cinema Theatres	Nos						
Others							
Social Awareness Campaign							
Sponsoring Social Awareness Campaigns	Nos						
Sponsoring school events and programmes	Nos						
Organising Programmes and events *(Eg. Cooking competition, Most Progressive Retailers & Distributors, etc.)*	Nos						
School Student visit to Dairy	Nos						
Others	Nos						
Social Media							
Advertisement through Social Media sites	Nos						

Annex IX: List of villages to be covered for Productivity Enhancement Activities

A. Calf Rearing Programme (CRP)

No.	District name	Taluka Name	Village Name	Census Code (as per Human Census 2011)	Name of DCS	Existing Milk procurement (TKgPD)	Milch animals (Nos.)	Heifers (Nos.)
1								
2								
3								
4								

B. Animal Nutrition Advisory Services

No.	District name	Taluka Name	Village Name	Census Code (as per Human Census 2011)	Name of DCS	Existing Milk procurement (TKgPD)	Milch animals (Nos.)	Heifers (Nos.)
1								
2								
3								
4								

C. Fodder Development

No.	District name	Taluka Name	Village Name	Census Code (as per Human Census 2011)	Name of DCS	Existing Milk procurement (TKgPD)
1						
2						
3						
4						

Annex X: The schedule of implementation of activities under the project

Component A: Strengthening Milk Procurement Activities

No.	Activity	Total time taken to complete the activity (in days)	Year 1								Year 2							
			Month 1				Month 2				Month 1				Month 2			
			W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
1	**Identification and recruitment of manpower**																	
	Identification of manpower of Union for the project activities																	
	Identification/ Recruitment of DCS secretary																	
	Identification of DCS Management Committee																	
2	**Purchase of Goods**																	
	Capital Items																	
	Stock record of goods																	
3	**Identification of villages**																	
	Organisation of Gram Sabha																	
	Registration of society																	
	Construction of building for DCS																	
	Installation of EMAT																	
	Installation of AMCU/DPMCU																	
4	**Installation of BMC**																	
	Identification of location for building/ existing building																	
	Construction of building for BMC																	
	Installation of BMC																	
5	**Training & Capacity Building**																	
	Training of Union employees																	
	Training of DCS secretaries																	
6	**Initiation of milk procurement**																	

Note: This rollout plan is for the activities (identifying villages for DCS organisation/strengthening, installing AMCU/DPMCU/BMC) envisaged in the 1st year. Similar process would be followed in subsequent years.

Component B: Strengthening of Milk Processing Activities

No.	Activity	Total time taken to complete the activity (in days)	Year 1												Year 2			
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4
1.	Preliminary activities																	
2.	Execution of Civil work																	
3.	Processing Plant																	
4.	Refrigeration Plant																	
5.	Steam Generation Plant																	
6.	Industrial Electricals																	
7.	ETP																	
8.	Project completion & handing over																	

Component C: Strengthening of Marketing Infrastructure

No.	Activity	Total time taken to complete the activity (in days)	Year 1								Year 2							
			Month 1				Month 2				Month 1				Month 2			
			W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
1	**Identification and recruitment of manpower**																	
	Identification of manpower of Union for the project activities																	
2	**Purchase of Goods**																	
	Capital Items																	
	Stock record of goods																	
3	**Identification of location for milk booth**																	
	Paperwork and getting necessary clearances																	
	Installation of Deep freezer/ Vizi cooler																	
	Establishment of walk-in-cold storage																	
4	**Awareness programmes & Market studies**																	
	Awareness programmes																	
	Market studies																	
5	**Training & Capacity Building**																	
	Training of Union employees																	

Note: This rollout plan is for the activities envisaged in the 1st year. Similar process would be followed in subsequent years.

Component D: Support for ICT Infrastructure

No.	Activity	Total time taken to complete the activity (in days)	Year 1								Year 2							
			Month 1				Month 2				Month 1				Month 2			
			W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
1	**Identification and recruitment of manpower**																	
	Identification of manpower of Union for the project activities																	
2	**Purchase of Goods**																	
	Capital Items																	
	Stock record of goods																	
3	**Pilot run**																	
5	**Training & Capacity Building**																	
	Training of Union employees																	

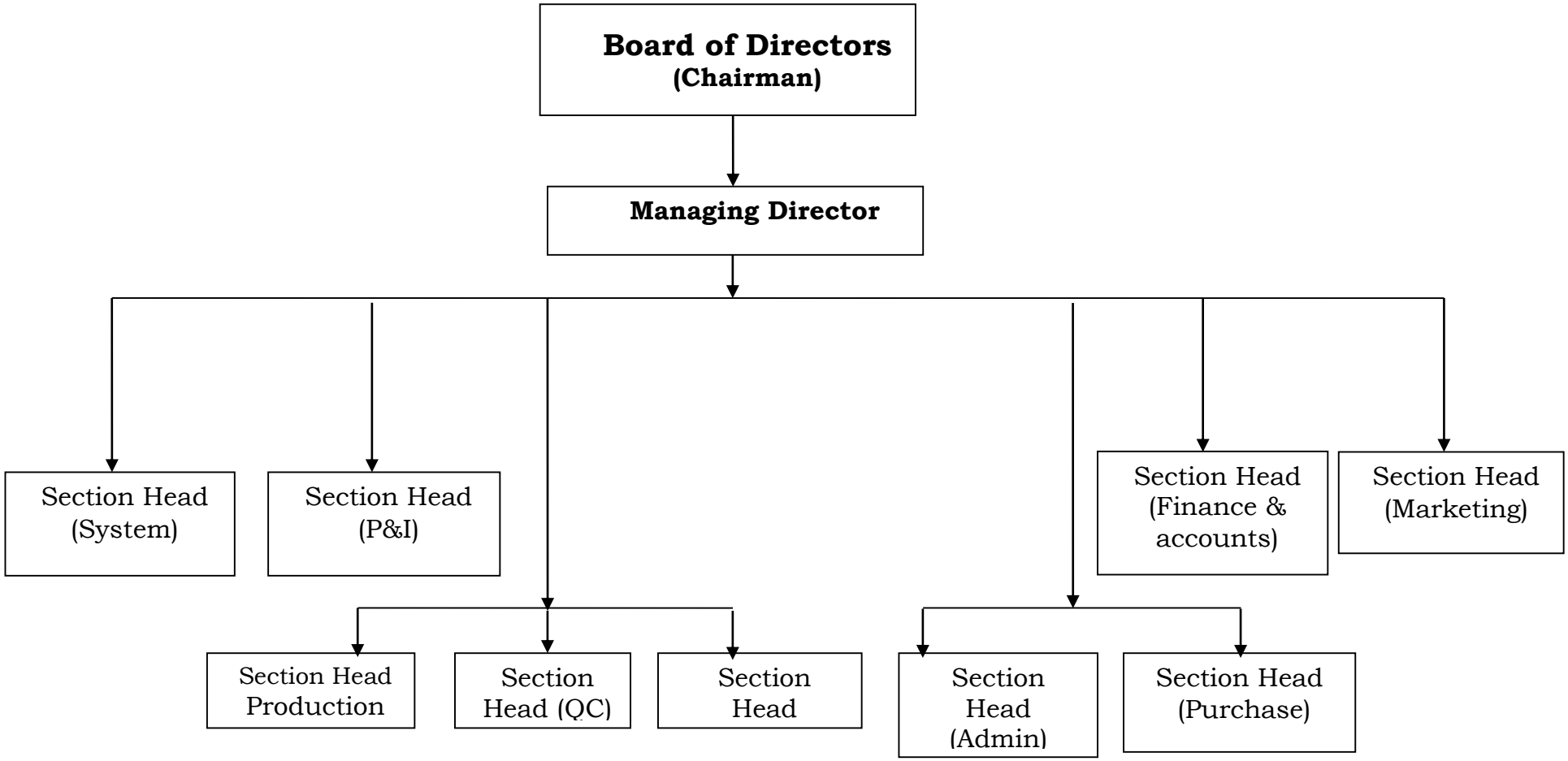
Component E: Productivity Enhancement- through nutritional interventions

No.	Activity	Total time taken to complete the activity (in days)	Year 1								Year 2							
			Month 1				Month 2				Month 1				Month 2			
			W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
1	**Identification and recruitment of manpower**																	
	Identification of ANO/ FDO																	
	Identification of CRP/AN supervisors																	
2	**Purchase of Goods**																	
	Capital Items																	
	Stock record of goods																	
3	**Identification of villages & animals**																	
	Finalisation of villages																	
	Identification of farmers willing to participate under CRP																	
	Identification of pregnant animals																	
4	**Registration of animals**																	
	Ear tagging & Registration of pregnant animals																	
	Follow-up of pregnant animals																	
	Ear tagging & Registration of female calves																	
5	**CRP activities**																	
	Deworming of female calves																	
	Vaccination of female calves																	
	Assistance for pregnancy feed																	
	Assistance for calf starter																	

No.	Activity	Total time taken to complete the activity (in days)	Year 1								Year 2							
			Month 1				Month 2				Month 1				Month 2			
			W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
	Assistance for calf growth meal																	
	Assistance for transition feed																	
5	**An Advisory Services**																	
	Assistance for mineral mixture																	
	Assistance for transition feed & early lactation feed																	
6	**FD activities**																	
	Silage making																	
	Demo for Mower																	
	Other activities …																	
7	**Training & Capacity Building**																	
	Training to ANO/FDO																	
	Training to CRP/AN Supervisor																	
8	**Project Monitoring and support**																	
	Salary to ANO																	
	Salary to CRP/AN Supervisor																	
	Office expenses for ANO																	

Note: This is an indicative rollout plan for the activities envisaged in the 1st year. Similar process would be followed in subsequent years.

Annex XI: Organogram of the Milk Union



Annex XII: Procurement Plan and Procurement Schedule

A. Procurement Plan

No.	Item	No.	Unit Rate (Rs.)	Total estimated cost (Rs in lakhs)	Method of procurement	Review
1	Milk Collection accessories					
2	Milk cans					
3	ICT support of milk procurement					
	Total					

B. Procurement Schedule

No.	Item	Quantity (nos.)	Total estimate cost (Rs in lakh)	Method of procurement	Issuance of IFB	Receipt and opening of bids	Evaluation of bids and approval of competent Authority	Issuance of Purchase Order	Start of supply	Completion of supply
1	Milk Collection accessories									
2	Milk cans									
3	ICT support of milk procurement									
	Total									

Annex XIII: Environmental Checklist

Screening Format

Name of Proposed Project:

Project Executing Organization, Project Proponent or Investment Company:

Name, Address, Organization, and Contact Point of a Responsible Officer:

Name:

Address:
Organization:
Tel:
Fax:
E-Mail:
Date:
Signature:

Check Items

Please write “to be advised (TBA)” when the details of a project are yet to be determined.

Question 1: Address of project site

Question 2: Scale and contents of the project (approximate area, facilities area, production, electricity generated, etc.)

2-1. Project profile (scale and contents)

2-2. How was the necessity of the project confirmed?
Is the project consistent with the higher program/policy?
□YES: Please describe the higher program/policy.
( )
□NO

2-3. Did the proponent consider alternatives before this request?

□YES: Please describe outline of the alternatives （ ）
□NO

2-4. Did the proponent implement meetings with the related stakeholders before this
request?
□Implemented □Not implemented
If implemented, please mark the following stakeholders.
□Administrative body
□Local residents
□NGO
□Others（ ）

Question 3:
Is the project a new one or an ongoing one? In the case of an ongoing project, have you received strong complaints or other comments from local residents?
☐New ☐Ongoing (with complaints) ☐Ongoing (without complaints)
☐Other （ ）

Question 4:
Is an Environmental Impact Assessment (EIA), including an Initial Environmental Examination (IEE) Is, required for the project according to a law or guidelines of a host country? If yes, is EIA implemented or planned? If necessary, please fill in the reason why EIA is required.
☐Necessity (□Implemented □Ongoing/planning)
(Reason why EIA is required:)
☐Not necessary
☐Other (please explain)

Question 5:
In the case that steps were taken for an EIA, was the EIA approved by the relevant laws of the host country? If yes, please note the date of approval and the competent authority.

☐Approved without a supplementary condition	☐Approved with a supplementary condition	☐Under appraisal

(Date of approval: Competent authority:)

☐Under implementation

☐Appraisal process not yet started

☐Other ( )

Question 6:

If the project requires a certificate regarding the environment and society other than an EIA, please indicate the title of said certificate. Was it approved?

☐Already certified

Title of the certificate: ( )

☐Requires a certificate but not yet approved

☐Not required

☐Other ( )

Question 7:

Are any of the following areas present either inside or surrounding the project site?

☐Yes ☐No

If yes, please mark the corresponding items.

☐National parks, protection areas designated by the government (coastline, wetlands, reserved area for ethnic or indigenous people, cultural heritage)

☐Primeval forests, tropical natural forests

☐Ecologically important habitats (coral reefs, mangrove wetlands, tidal flats, etc.)

☐Habitats of endangered species for which protection is required under local laws and/or international treaties

☐Areas that run the risk of a large scale increase in soil salinity or soil erosion

☐Remarkable desertification areas

☐Areas with special values from an archaeological, historical, and/or cultural points of view
☐Habitats of minorities, indigenous people, or nomadic people with a traditional lifestyle, or areas with special social value

Question 8:
Does the project include any of the following items?
☐Yes ☐No

If yes, please mark the appropriate items.
☐Involuntary resettlement (scale: households persons)
☐Groundwater pumping (scale: m3/year)
☐Land reclamation, land development, and/or land-clearing (scale: hectors)
☐Logging (scale: hectors)

Question 9:
Please mark related adverse environmental and social impacts, and describe their outlines.

☐Air pollution
☐Water pollution
☐Soil pollution
☐Waste
☐Noise and vibrations
☐Ground subsidence
☐Offensive odors
☐Geographical features
☐Bottom sediment
☐Biota and ecosystems
☐Water usage
☐Accidents
☐Global warming

☐Involuntary resettlement
☐Local economies, such as employment, livelihood, etc.
☐Land use and utilization of local resources
☐Social institutions such as social infrastructure and local decision-making institutions
☐Existing social infrastructures and services
☐Poor, indigenous, or ethnic people
☐Misdistribution of benefits and damages
☐Local conflicts of interest
☐Gender
☐Children's rights

☐Cultural heritage
☐Infectious diseases such as HIV/AIDS
☐Other ( )
Outline of related impact:

Question 10:

In the case of a loan project such as a two-step loan or a sector loan, can sub-projects be specified at the present time?

☐Yes ☐No

Question 11:

Regarding information disclosure and meetings with stakeholders, if JICA's environmental and social considerations are required, does the proponent agree to information disclosure and meetings with stakeholders through these guidelines?

☐Yes ☐No

Annex XIV: Board resolution (sample)

The Board of Directors of XYZ Milk Union in its meeting held on _____*(date)*_____ vide Resolution No.123 has adopted the following resolution:-

Resolution No. 123

"RESOLVED that the approval of the Board be and is hereby accorded to the Union for receiving assistance under 'Dairying Through Cooperatives (DTC) scheme."

"FURTHER RESOLVED THAT the Union intends to establish ____ new DCS, ____ BMCs and ____ AMCU, ___ LLPD dairy plant, ___ walk-in-cold storage. The Union also intends to implement Productivity Enhancement Activities through implementation of Calf Rearing Programme, Animal Nutrition Advisory Services and Fodder Development activities in _____ villages."

"FURTHER RESOLVED THAT out of total project cost of about Rs. ____ Lakh, the Union intends to avail Rs. _____ Lakh as grant, Rs. ____ Lakh as loan under the above scheme and is ready to contribute the balance amount of Rs. ___ Lakh from its own sources."

"FURTHER RESOLVED THAT, the Union hereby assures that it would continue to implement all the activities under the project on a sustainable basis."

"FURTHER RESOLVED THAT, the Union hereby ensures that there is no duplication or overlap of the proposed activity(s) with the existing schemes of the Central and State Government departments in the operational area of the Union.

"FURTHER RESOLVED THAT Managing Director of the Union be and is hereby authorised to execute all documents including the Loan Agreement with National Dairy Development Board (NDDB), on behalf of the Union and carry out any other relevant action that may be necessary for the appraisal and successful implementation of the project after its approval."

Signature
Designation
Seal

Annex XV: Component wise cost table

Component A - Strengthening Milk Procurement infrastructure

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
	Key Parameters/Physical Targets														
	New Villages to be covered	Nos.													
	Villages to be covered for strengthening	Nos.													
	Total villages to be covered	Nos.													
	Milk producer members to be enrolled	Nos.													
	Women producer members enrolled @ 50%	Nos.													
	Additional milk procurement (incremental)	TKgPD													
	Additional milk procurement (cumulative)	TKgPD													
	Participating Institutions	Nos.													
A	**Assistance to Village level Producers' Institution**														
A1	Building for Village Producer Institution	Nos.							5.00						
A2	SS milk collection Accessories, testing equipment, DCS board, furniture etc.	Nos.							1.00						

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
A3	AMCU - Capital Cost & operating cost	Nos.							1.75						
A4	Management grant to Village level functionary *(tapering over 2 years - 100%, 50%)*	Nos.							0.36						
	Sub Total (A)														
B	**Support for BMCs**														
B1	Building for Bulk Cooler	Nos.							3.00						
B2	Bulk Milk Coolers(2KL)	Nos.							8.00						
B3	Tankers for milk transportation 10KL	Nos.							15.00						
	Sub Total (B)														
	Total Outlay (A+B) without Price Contingency														
	Price Contingency @ 6%														
	Total Outlay with Price Contingency														
	Pattern of Assistance														
A	**JICA ODA Loan**														
B	**Grant**														
C	**PIs Contribution**														
	Total Outlay														

Component B - Strengthening of Milk Processing Infrastructure

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
A	**Modernisation & creation of new - milk processing plant, drying plant & VAP**														
A1	**New Plants**	**TLPD**													
	-100 TLPD Plant	Nos.							3800.00						
	-300 TLPD Plant	Nos.							9000.00						
A2	**Modernisation/expansion of existing plant**	**TLPD**													
	- 0.40 to 1 LLPD	Nos.							3000.00						
	- 0.60 to 1.00 LLPD	Nos.							3500.00						
	- 1 to 2 LLPD	Nos.							4000.00						
A3	**Product Plants**	**MTPD / TLPD**													
	- Drying Capacity	MTPD							150.00						
	- Ice Cream Plant	TLPD													
	- Aseptic Flavoured Milk	TLPD													
	- Indigenous Sweets	MTPD													
	- Dahi, Youghurt or Fermented Milk	MTPD							25.00						
	- Cheese or Paneer	MTPD							25.00						
B	**Feed & Feed Manufacturing Plant**	MTPD													
	- Cattle Feed Plant - 150 TLPD	Nos.							4000.00						
	- Bypass Protein Plant - 50 MTPD								800.00						
	- Mineral Mixture Plant - 12 MTPD								40.00						
	Total Outlay without Price Contingency														

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
	Price Contingency @ 6%														
	Total Outlay with Price Contingency														
	Pattern of Assistance														
A	**JICA ODA Loan**														
	- Milk processing facilities and manufacturing facilities for Value Added Products														
	- Feed & feed supplements manufacturing infrastructure														
B	**Grant**														
C	**PIs Contribution**														
	- Milk processing facilities and manufacturing facilities for Value Added Products														
	- Feed & feed supplements manufacturing infrastructure														
	Total Outlay														

Component C – Support for Marketing Infrastructure

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
A	**Cold Chain Infrastructure:**														
	- Walk-in-Cold Store - 50 KL Capacity	Nos.							5.00						
	- Walk-in-Cold Store - 25 KL Capacity	Nos.							2.50						
	- Walk-in-Cold Store - 10 KL Capacity	Nos.							1.00						
B	**Insulation for Marketing Vans 5KL Capacity**	Nos.							2.00						
C	**Milk Parlours with Visi Cooler and Deep Freezer**	Nos.							3.00						
D	**Consumer awareness Programme**	Nos.							0.25						
E	**Market Studies**	Nos.							10.00						
F	Market Promotion Cost on tapering *(tapering over 3 years - 100%, 75%, 50%)*								LS						
	Total Outlay without Price Contingency														
	Price Contingency @ 6%														
	Total Outlay with Price Contingency														
	Pattern of Assistance														
A	**JICA ODA Loan**														
B	**Grant**														
C	**PIs Contribution**														
	Total Outlay														

Component D – Support for Information & Communication Technology

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
	Number of DCS/MPIs to be covered	Nos.													
A	**Capital Cost**														
A1	Internet Dongle at DCS/MPI level	Nos.							0.03						
B	**Operational Cost**														
B1	**At DCS/MPI Level**														
	Internet charge for 3 years	Nos.							0.15						
B2	**At PI Level**														
	Internet charge for 3 years	Nos.							0.54						
	Software implementation support to DCS/MPI for 3 years	Nos.							0.05						
	AMC for AMCS software for 3 years	Nos.							1.80						
	Server hosting support for 3 years	Nos.							7.20						
	SMS charges for 3 years *(note a)*	Nos.							0.16						
	Total Outlay without Price Contingency														
	Price Contingency @ 6%														
	Total Outlay with Price Contingency														
	Pattern of Assistance														
A	**JICA ODA Loan**														
B	**Grant**														
C	**PI's Contribution**														
	Total Outlay														

Component E - Productivity Enhancement – through Nutritional Interventions

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
	Physical Targets														
1	Animal Nutrition Officer (ANO)#	No.													
2	Supervisors	No.													
	- CRP Supervisors (5 per module(district))	No.													
	- AN Advisory Services (2 per district)	No.													
3	Villages to be covered (inc.)														
	- Calf Rearing Programme	No.													
	- AN Advisory Services*	No.													
4	Animals to be covered (inc.)														
	- Pregnant animals under CRP *(5 animals per village per year for 2 years)*	No.													
	Female calves under CRP	No.													
	Animals for feeding Mineral Mixture *(40 animals per village)*	No.													
	Animals to be covered for Transition and Early lactation feed *(10 animals per village)*	No.													
	Animals to be covered under Pashuposhan	No.													
	Financial Outlay														
A.	**Calf Rearing Programme**														
A.1	Assistance for Pregnancy feed *(50% assistance) (note a)*	TKg							0.14						

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
A.2	Assistance for Calf starter *(50% assistance) (note b)*	TKg							0.15						
A.3	Assistance for Calf growth meal *(50% assistance) (note c)*	TKg							0.125						
A.4	Assistance for Transition feed (post calving feed) for DAMs *(50% assistance) (note d)*	TKg							0.15						
A.5	Deworming for female calves & Fertility Improvement	Nos.							0.00075						
A.6	Vaccination for female calves	Nos.							0.00070						
A.7	Ear tag *(with 25% physical contingency)*								0.00012						
A.8	Working Kit for CRP (with 20% physical contingency) (note e)								0.025						
A.9	Stationery/ Data records (Booklet etc.) *(note f)*								0.01						
B.	**Animal Nutrition Advisory Services**														
B.1	Assistance for distribution of Mineral mixture *(50% assistance) (note g)*	MT							0.40						
B.2	Assistance for distribution of Transition feed and Early Lactation Feed *(50% assistance) (note h)*	MT							0.15						
B.3	Ear tag *(with 25% physical contingency)*	Nos.							0.00012						
B.4	Working Kit (with 20% physical contingency) *(note i)*	Nos.							0.025						

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
B.5	Stationery/ Data records (Booklet etc.) *(note j)*	Nos.							0.01						
C.	**Fodder Development Activities**														
C.1	**Green Fodder Production Enhancement**														
a	**Fodder seed Support to farmers for TL/ Certified/Hybrid fodder seeds**														
	Legume fodder crops (Truthfully Labelled) *(note k)*	MT							0.30						
	Legume fodder crops (Certified) *(note l)*	MT							0.40						
	Cereal fodder crops (Truthfully Labelled)	MT							0.10						
	Cereal fodder crops (Certified)	MT							0.20						
	Plantation of roots/stem cuttings of perennial grasses	Lakhs							1.00						
	Planting of fodder trees	Lakhs							1.00						
C.2	**Demonstration of Crop residues management technologies**														
a	**Demonstration of crop residue management through Mower**														
	High speed wet biomass management units large capacity *(note m)*	Nos.							40.00						

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021 -22	2022 -23	2023 -24	2024 -25	2025 -26	Total		2021-22	2022 -23	2023-24	2024 -25	2025 -26	Total
	Mower upto 5HP (preferably combine prevention version) *(note n)*	Nos.							1.00						
	Mower 5-15 HP (preferably combine prevention version) *(note o)*	Nos.							6.00						
	Mower over 15 HP (reaping, baling, threshing & bundle making & prime mower) (preferably combine prevention version) *(note p)*	Nos.							20.00						
C.3	**Demonstration of Fodder Conservation Technologies**														
a	**Demonstration of fodder conservation through Chaff cutter and Fodder storage Godown**														
	Chaff cutter Manual	Nos.							0.10						
	Chaff cutter Power	Nos.							0.25						
	Conveyer fed chaff-cutter (Chopper Loader) to DCS	Nos.							1.75						
	Fodder storage godown dry & green dual purpose	Nos.							15.00						
b	**Demonstration of Green Fodder Conservation through Silage making**														
	Low cost silage making at DCS Level (note q)	No.							10.00						
C.4	**Demonstration and Propagation of modern fodder**														

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
	production & conservation technologies														
	Establishment of Micro - training centre	Nos.							10.00						
	Commercial fodder production through Participating Institutions	Ha							5.00						
D	**Extension activities**														
D.1	Village awareness programmes for enhancing adoption of cattle feed, green fodder & mineral mixtures	No. of programmes							0.10						
D.2	Awareness campaign on calf rearing *(note r)*	No. of campaigns							0.30						
D.3	Promotional materials (poster, pamphlet, reading material) *(note s)*	Nos.							0.03						
D.4	Feed testing charges for CF, MM and CRP feed														
	Feed testing charges under CRP *(note t)*	Nos.							0.120						
	Feed testing under Animal Nutrition Advisory Services *(note u)*	Nos.							0.05						
E	**Capacity Building / Training**														
E.1	Training to ANO	No. of ANO							0.20						

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
E.2	Training to AN and CRP Supervisors *(with 50% physical contingency)*	No. of AN & CRP supervisors							0.20						
E.3	Milch animal rearing for dairy farmers	Nos.							0.10						
F	**Project Monitoring Support**														
F.1	Salary to Animal Nutrition Officer (ANO) (1 per district) *(note v)*	No.							7.20						
F.2	Salary to Animal Nutrition Supervisor (2 per district) *(note w)*	No.							3.00						
F.3	Salary to CRP Supervisor (5 per district) *(note x)*	No.							1.80						
F.4	Laptop for ANO *(note y)*	No.							0.70						
F.5	Tablet for Animal Nutrition Supervisors and CRP Supervisors *(with 20% physical contingency) (note z)*	No.							0.17						
F.6	Camera to ANO *(note aa)*	Nos.							0.30						
F.7	Propulsion charges for ANO *(note ab)*	No.							3.60						
F.8	Mobile and internet charges *(note ac)*														
	Animal Nutrition Officer	No.							0.06						
	Animal Nutrition & CRP Supervisor	No.							0.04						

No.	Particulars	Unit	Physical Targets						Unit Cost (Rs. in lakh)	Financial Outlay (Rs. in lakh)					
			2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
F.9	Office expenses for ANO *(note ad)*	No.							0.05						
	Total														
	Price Contingency @6%														
	Total with price contingency @ 6%														
	Pattern of Assistance														
A	ODA Loan														
B	Grant														
C	Participating Institution (PI) Contribution														
	Total														

Note:

a - Pregnancy Feed @ Rs 28/kg feed including transportation cost (2 Rs./kg). Feed for 60 days (3 kg per animal per day). 50% assistance considered under project.

b - Calf Starter @ Rs 30/kg feed including transportation cost (2 Rs./kg). Feed for 178 days (225 kg per animal per module). 50% assistance considered under project.

c - Calf Growth meal @ Rs 25/kg feed including transportation cost (2 Rs./kg). Feed for 574 Days (2.5 kg per animal per day). 50% assistance considered under project.

d - @ Rs 30 / kg transition feed. 4 kg per day for 90 days. 50% assistance considered under project.

e - Calf Rearing kit (ear tags, ear tag applicator, measuring tape, weighing balance 5 & 25 kg, 1 bag) @ Rs. 2500 with 20% extra

f - Register (100 pages) 300 number, per village

g - Mineral Mixture will be given 100 gm per day for 300 days per animal. Cost of Mineral mixture is considered Rs. 80 per kg on which 50% assistance would be provided.

h - Transition feed and early lactation feed will be given 4 kg per day for 21 days before and 90 days after calving per animal. For non CRP POIs only i.e. for 15 POIs. Cost of feed is considered Rs. 30 per kg on which 50% assistance would be provided.

i - Working kit (ear tag applicator, 1 bag) @ Rs. 1000 with 20% extra

j - Register (100 pages) 100 number, per village

k - Cost of legumes (Berseem) is considered Rs. 350 per Kg on which assistance of Rs. 30 has been considered for TL seed under the project

l - Cost of legumes (Berseem) is considered Rs. 350 per Kg on which assistance of Rs. 40 has been considered for certified seed under the project

m - Mower set with cutting width up to 300 cm, hp 75 to 150, for carrying out harvesting, lining, chopping, loading, threshing, baling and wrapping of cereal & fodder crops ensuring zero wastage of fodder. Complete in all respects with prime mover and box type trailer set.

n - Mower set with cutting width up to 100 cm, hp below 5, for carrying out harvesting and lining of cereal & fodder crops at ground level ensuring zero wastage of fodder.

o - Mower set with cutting width up to 150 cm, 5-15 HP, option of ride on; for carrying out harvesting and lining of cereal & fodder crops at ground level ensuring zero wastage of fodder. With add on facility for chopping, threshing or shredding.

p - Mower set with cutting width up to 220 cm, hp below 75, for carrying out harvesting, lining, chopping, loading, threshing, baling and wrapping of cereal & fodder crops ensuring zero wastage of fodder. Complete in all respects with prime mover and box type trailer set.

q - Silage of 250 MT at DCS level

r - Awareness campaigns on calf rearing @ Rs 30,000 per campaign (1 campaign per supervisor); Calf rally, Award to winners, High tea, stage, sound system, etc.

s - Poster, Pamphlet or reading material for farmers per village

t - 20 tests per module (spread over 2 years)

u - 20 tests per module (spread over 2 years)

v - Rs. 60,000 per month per ANO per district for FD, CRP and Feed &Feed Supplement activities

w - Rs. 25,000 per month (Rs. 20000 salary & Rs.5000 propulsion charges) per Animal Nutrition Supervisor (2 supervisor per district) for FD and Feed Supplement activities

x - Rs. 15,000 per month (Rs.12000 salary and Rs.3000 propulsion charges) per CRP Supervisor for CRP activities

y - 1 Laptop per ANO of Rs. 70000

z - Rs. 17,000 per Animal Nutrition and CRP supervisor with 20% contingency

aa - 1 Camera per ANO of Rs. 30000

ab - Propulsion charges of Rs. 30,000 per month per ANO

ac - Mobile and internet charges of Rs. 500 per month per ANO & Rs. 300 per CRP Supervisor

ad - Office expense Rs. 5000 per month per ANO

Component F – Training and Capacity Building

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
Component A - Strengthening Milk Procurement Infrastructure															
A.1	**Programmes**														
	Farmers' induction program	Nos.							0.025						
	Farmers orientation program	Nos.							0.03						
	Awareness program on clean milk production	Nos.							0.001						
	Management Committee Members (MCM) Orientation programme for New DCS	Nos.							0.02						
	Board of Directors (BOD) orientation program	Nos.							0.1						
	Business Appreciation Program for Existing Proc. Staff	Nos.							0.1						
A.2	**Training**														
	Basic Training for new DCS Secretaries	Nos.							0.1						
	Refresher Training of DCS secretaries	Nos.							0.02						
	Operation & Maintenance of BMC/AMCU/DPMCU Operators	Nos.							0.1						
	Strategic Dairy Business Management for MD & Section Heads	Nos.							0.5						
	Sub Total (Component A)														
Component B - Strengthening Milk Processing Infrastructure															
B1	Dairy Plant Management	Nos.							0.3						

No.	Particulars	Physical Targets							Unit Cost (Rs. in lakh)	Financial Outlays (Rs. in lakh)					
		Unit	2021-22	2022-23	2023-24	2024-25	2025-26	Total		2021-22	2022-23	2023-24	2024-25	2025-26	Total
B2	Dairy Plant Hygiene and Sanitation ensuring compliances of FSSAI regulations	Nos.							0.2						
B3	Modern Dairy Management practices including TQM, Kaizen, 5S, ISOs	Nos.							0.2						
	Sub Total (Component B)														
Component C - Strengthening Marketing Infrastructure															
C1	Retailers Awareness Programme	Nos.							0.001						
C2	Marketing Management Training for officers	Nos.							1						
C3	Marketing Approaches in Milk & Milk Products for marketing team	Nos.							0.2						
	Sub Total (Component C)														
Component D - Infrastructure & Communication Technology															
D1	Software Training at POI Level	Nos.							0.38						
D2	Training at DCS Level	Nos.							0.07						
	Sub Total (Component D)														
	Total Outlay (A+B+C+D)														
	Price Contingency @ 6%														
	Total Outlay with Price Contingency														
	Pattern of Assistance														
A	**JICA ODA Loan**														
B	**Grant**														
C	**PI's Contribution**														
	Total Outlay														

Annex XVI: Sustainability of New DCS

No.	Particulars	Unit (in Rs.)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
A	**DCS details**											
	Number of producers to be enrolled (incr.)											
	Number of producers to be enrolled (cum.)											
	Average milk collected per member (KgPD)											
	Estimated Milk procurement (KgPD) (incr.)											
	Estimated Milk procurement (KgPD) (cum.)											
	Milk Cans (incr.)											
	Milk Cans (Cum)											
B	**Investment**											
	Milk collection accessories											
	DPMCU											
	Milk Cans											
	Total investment											
C	**Operating statement**											
C1	**Income**											
	Stipend to DCS Secretary (Sub project funding)											
	DCS Commission											
	Margin to DCS from Local Sale (@ Rs. 25/- per Litre of milk) (1 % of total milk procured)											
	Sample milk sale (30 ml per sample)											

No.	Particulars	Unit (in Rs.)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
	Income from Weight-Volume difference (Rs. 20.5/- per Kg of milk)											
	Total income											
C2	**Expenses**											
	House Rent @ Rs. 300/- per month											
	Electricity @ Rs. 200/- per month											
	Water @ Rs. 50/- per month											
	Other expenses (stationary - 50, travelling @ Rs. 250/- per month)											
	Testing expenses @ Rs. 0.10/- per sample											
	Testing equipment maintenance expenses											
	Audit fee											
	Other expenses (Board meeting, guest entertainment, etc.)											
	Honararium to Secretary @ Rs. 3000/- per month (including stipend received from the project)											
	Depreciation											
	Total expenses											
C3	**Profit**											
C4	**Depreciation**											
C5	**Cash Profit**											
C6	**Net profit**											

Figures are indicative.

Annex XVII: Sustainability of BMC

No.	Details	Unit cost (Rs. Lakh)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
A	**BMC DCS details**											
	Pourer members in BMC DCS											
	Pourer members in satellite villages/DCS											
	Total pourer members											
	Milk from Main BMC Villages (KgPD)											
	Milk from satellite villages/DCS (KgPD)											
	Total milk procured											
	Proposed BMC capacity (KL)											
	BMC Utilisation (%)											
B	**Investment**											
	Milk collection accessories	0.16										
	2 Kl BMC	8.00										
	AMCU	1.58										
	BMC accessories	0.31										
	Cans	0.03										
	Total investment											
C	**Operating statement**											
C1	**Income**	0.9										
	DCS Commission	0.0000012										
	Margin to DCS from Local Sale (@ Rs. 10/- per Litre of milk)	0.0001										
	(10% of total milk procured)											

No.	Details	Unit cost (Rs. Lakh)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
	Income from Weight-Volume difference (Rs. 34.63/- per Kg of milk)	0.000346										
	Sample milk sale(@30ml per pourer member)	0.000346										
	Total Income											
C2	**Expenses at BMC**											
	BMC DCS office Rent	0.12										
	Expenses towards testing equipments maintenance	0.02										
	Repair and Maintenance of BMC *(AMC of Rs. 18000 per year + 12.36% service tax + Rs. 24000 for parts not covered in AMC like gas refilling, filter, oil etc.)*	0.44										
	Repair and Maintenance of AMCU (AMC of Rs. 5650 per year + 12.36% service tax + Rs. 1000 for parts not covered in AMC)	0.07										
	Battery Expenses@ Rs 7000/- to be replaced once in 3 yrs	0.02										
	Water @ Rs. 100/- per month	0.01										
	Testing expenses @ 0.10 per sample	0.000001										
	Audit fees	0.12%										
	Stationery Expenses	0.05										

No.	Details	Unit cost (Rs. Lakh)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
	Other expenses (Board meeting, guest entertainment, etc.)	0.02										
	BMC DCS secretary salary @ Rs. 3000/- per month	0.3										
	BMC DCS tester salary @ Rs. 2000/- per month	0.24										
	BMC DCS Helper salary @ Rs. 1500/- per month	0.18										
	Depreciation											
	Actual Depreciation											
	Less Grant recognised											
	Total Expenses											
C3	**Profit**											
C4	**Depreciation**											
C5	**Cash Profit**											

Figures are indicative.

Annex XVIII: Projected Operating Statement of the Union

A. Projected Material Balancing Statement

Particulars	Unit	Fat %	SNF %	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Procurement														
Cow milk (Own Procurement)	TKgPD													
Milk (from other Unions)	TKgPD													
Total	**TKgPD**													
Total Fat Procured in Milk	**MT**													
Total SNF Procured in Milk	**MT**													
Disposal of Milk in Sachets														
Toned milk	TLPD													
Double toned milk	TLPD													
Standard milk	TLPD													
Full cream milk	TLPD													
Fat Disposed-Milk	**MT**													
SNF Disposed-Milk	**MT**													
DISPOSAL (MILK PRODUCTS)														
Butter	MTPD													
Ghee	MTPD													
Curd	MTPD													
Lassi	TLPD													
Flavoured Milk	TLPD													
Other _____														

Particulars	Unit	Fat %	SNF %	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Other _____														
Other _____														
Fat Disposed-Products	**MT**													
SNF Disposed-Products	**MT**													
Processing Loss														
Fat Loss on Liquid Milk Procured	MT													
SNF Loss Liquid Milk Procured	MT													
Surplus/Deficit														
Fat Surplus	MT													
SNF Surplus	MT													
Conversion (Butter)	MT													
Conversion (SMP)	MT													
Production of Ghee	MT													
Local sale of Ghee	MT													
Ghee Sale (Depo)	MT													
Purchase of WB	MT													
Purchase of SMP	MT													
Opening Stock Ghee	MT													
Ghee Production	MT													
Ghee Sales	MT													
Closing Stock of Ghee	MT													

Particulars	Unit	Fat %	SNF %	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Opening Stock of SMP	MT													
SMP Purchased	MT													
SMP Production	MT													
Sale of SMP	MT													
Use of SMP	MT													
Closing Stock of SMP	MT													

B. Projected Operating Statement

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
1	**Sales Revenue**												
i	**Sale of Liquid Milk**												
	Toned milk												
	200 ml												
	500 ml												
	6000 ml												
	Double Toned milk												
	500 ml												
	Full Cream milk												
	500 ml												
	6000 ml												
	Bulk Milk Sales												
	Other Sale (if any)												
	Total Sales of Liquid Milk												
ii	**Sale of Milk Products**												
	Butter												

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
	100 gm												
	500 gm												
	Ghee												
	1 litre												
	5 litre												
	Curd												
	200 gm												
	500 gm												
	1 kg												
	Lassi												
	180 ml												
	500 ml												
	Flavoured milk												
	200 ml												
	Other 1												
	Variant _____												
	Other 2												
	Variant _____												
	Variant _____												
	Other 3												
	Variant _____												
	Variant _____												
	Sale of White Butter												
	Sale of SMP												
	Total Milk product sales												
	TOTAL INCOME (i+ii)												
2	**Raw-material Cost**												
i	**Milk & milk products**												

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
	Opening stock (Milk/Milk Products)												
	Purchase of Milk from DCS												
	Avg. Purchase of SMP												
	Avg. Purchase of Butter												
	Closing (Milk/Milk Products)												
ii	**Other materials used in milk products in New UHT plant**												
a	Sugar												
b	Fruit concentrate/ flavour												
C	Salt												
	Total Cost of Raw Material												
3	**Gross Margin (1-2)**												
4	**Variable Costs**												
i	Procurement Transport (DCS)												
ii	Processing & Manufacturing Expenses												
	Conversion Cost												
	- White Butter												
	- SMP												
iii	**Packing Cost**												
	Toned milk												
	200 ml												
	500 ml												
	6000 ml												
	Double Toned milk												
	500 ml												
	Full Cream milk												
	500 ml												

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
	6000 ml												
	Ghee												
	1 litre												
	5 litre												
	Curd												
	200 gm												
	500 gm												
	1 kg												
	Lassi												
	180 ml												
	500 ml												
	Flavoured milk												
	200 ml												
	Other 1												
	Variant _____												
	Other 2												
	Variant _____												
	Variant _____												
	Other 3												
	Variant _____												
	Variant _____												
iv	Distribution Expenses (milk & milk products)												
	Total of variable costs (i+ii+iii+iv)												
	% Variable Cost												
5	**Contribution (3-4)**												
6	**Fixed Costs**												

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
	Salaries & Benefits to Employees												
	Additional Salary for the new Plant												
	Administrative Expenses												
	Marketing Cost												
	Total Fixed Cost												
9	**Profit Before Depreciation, Interest & Taxes (PBDIT) (5-6+7)**												
10	**Financial Cost**												
	Interest on Long Term Loan												
	Interest on Working Capital												
	Other finance cost												
11	**Depreciation**												
	Existing assets												
	New Dairy Plant												
12	**Net Profit before tax (8-9-10)**												
13	Income Tax @ 34.9%												
14	**Net Profit after Tax (11-12)**												
	Accumulated Profit/loss (Op. balance)												
	Calculation of ROI												
	PAT +Interest												
	Net Block												
	New Assets Created												
	Cumulative Investment												
	ROI												

No.	Particulars	Unit Rate		Projected (Rs Lakh)									
		Unit	Rs.	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
	Profit After Tax (PAT) + Interest + Deprn												
	Total Repayment												
	DSCR												

Figures are indicative.