

Maharashtra Agribusiness Network (MAGNET) Project

Toolkit for preparation of DPR Strawberry

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1. KEY NOTES

1. These project plans are designed to assist as a ready sample for reference/ adoption by the applicants wishing to submit their DPRs for consideration of grant assistance under Output II of the MAGNET Project (GoM).
2. While these sample project plans are designed keeping a specific MAGNET crop as the target crop, users must understand that in majority cases most facilities are relevant for processing of other MAGNET crops as well. For instance:
 - A Washing-Sorting-Grading Facility can be used for processing of all MAGNET crops (as per availability in the user's catchment zone). Facilities having round grader can ensure most of the round MAGNET fruits can be graded in the same facility.
 - Similarly, a Pulping Unit or a Freeze-Drying Unit can be used for processing pulps of Banana, Custard Apple, Sapota, Guava, Strawberry, and Mango (as per availability in user's catchment zone).
 - Similarly, an IQF Unit can be used for processing products of Okra, Chillies, Pomegranate Arils, cut/diced products of guava, strawberry, mango, etc.

Case to case basis, applicants may have to make certain variations or add specific machinery to enable processing of some crops. It is important that users understand that handling multiple MAGNET crops (based on availability in the catchment zone) is desirable to ensure year-round operations as well as technical and financial viability of the plants.

Users also need to ensure that at least 70% of the plant capacities must be utilized for MAGNET crops and the spare capacity can be utilized for non-MAGNET crops. [Only exception will be allowed in case of strawberries, wherein (in locations like Mahabaleshwar) applicants may not have abundant availability of other MAGNET crops].

3. **Users must understand that MAGNET does a profile screening and evaluates if the applicant's profile (in terms of recent year turnovers; experience in manufacturing and/or trading of same/ similar value-added products; technical and technology knowhow; backward and forward linkages, etc.) demonstrates applicant's abilities to handle proposed activities and final products marketing.**
4. Users may kindly note that **MAGNET's key focus is on Primary Processing and Preservation and some Secondary Processing in integration** is also acceptable. MAGNET does not prefer/ promote high value adding tertiary processing, except on a case to case (merit) basis. In this context, a "PREFERRED PROJECT PROMOTER PROFILE" has been shared with each model.
5. The plans comprise major required technical civil works, key plant & machinery and utility equipment required for sound implementation and operation thereafter. Also, while designing the sample project plans, best efforts have been taken to include critical components; This does not restrict the user to add/reduce/modify the project components. While care has been taken to ensure ideal and optimum provision of all required civil areas/capacities and quantities of equipments, **users must conduct their own research and, after thorough discussions with their prospective suppliers/ project consultants, design (i.e., capacities, quantities, etc.) their own projects accordingly.**
6. The project cost calculations are based on cost norms (of MIDH/MOFPI, wherever applicable). While preparing DPR, **users must necessarily seek quotations from key suppliers to arrive at their own project cost** accordingly. However, users must also note that grant, if the project is selected, shall be accorded as per prevailing cost norms.
7. This project plans herein are designed to handle strawberry (primarily) and other compatible MAGNET crops could also be handled in the same facility. While proposing multi-fruit handling (i.e., Strawberry, and other MAGNET crops), users must take necessary care to incorporate changes in project components, if any.
8. "As per guidelines of Output II (Matching Grant Component, MAGNET Project, GoM), the promoter's contribution (equity) should be at least 20% of the total project cost. Thus, in the Means of Finance presented in each plan of this report, the Promoter Contribution is conservatively restricted to 20% of the Total Project Cost. While designing their own projects, project promoters may require infusing

greater percentage of equity, based on term loan being sought from FI and grant being sought from MAGNET.






Exception: In case of CMRC applicants only, the equity contribution should be at least 5% of the total project cost. Thus, CMRC (applicant) users, may require restructuring their means of finance, also based on term loan being sought from FI and grant being sought from MAGNET. "

9. As per guidelines of Output II (Matching Grant Component, MAGNET Project, GoM), the limit of eligible Preliminary & Pre-operative expenses (for grant consideration) is maximum 5% of the eligible project cost or Rs. 20 Lakh, whichever is lower. Thus, P&P expenses in each of the plans presented in the project cost are conservatively restricted to same extent only. While designing their own projects, users may require provisioning for greater/ lesser amount of P&P, based on requirement of the project.
10. In the Project Cost of each of the plans presented herein this report, provision for components such as Working Capital Margin, Misc. Fixed Assets and Contingencies has not been made. As per guidelines of Output II (Matching Grant Component, MAGNET Project, GoM), these components are not eligible for grant. However, while designing their own projects, users may require provisioning for these components, based on requirement of the project.
11. The cost of utilities and material handling equipment will be considered under eligible project cost subject to restriction of eligible cost of same being maximum 25% of the total project cost.
12. Users may refer this report as reference/ guidance for developing their own project plans, however necessarily in conjunction with the EOI Guidelines.

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2. CROP PROFILE: STRAWBERRY

Strawberry at Glance

-  China and USA are the largest producers of strawberries across the world
-  Maharashtra and Meghalaya are the top 2 strawberries producing States in India.
-  Mahabaleshwar is key region in Maharashtra for production of strawberries
-  The average productivity of Strawberry in India 2.92 MT/Ha while Maharashtra has productivity of 1.99 MT/Ha
-  8% Indian households consume Strawberries

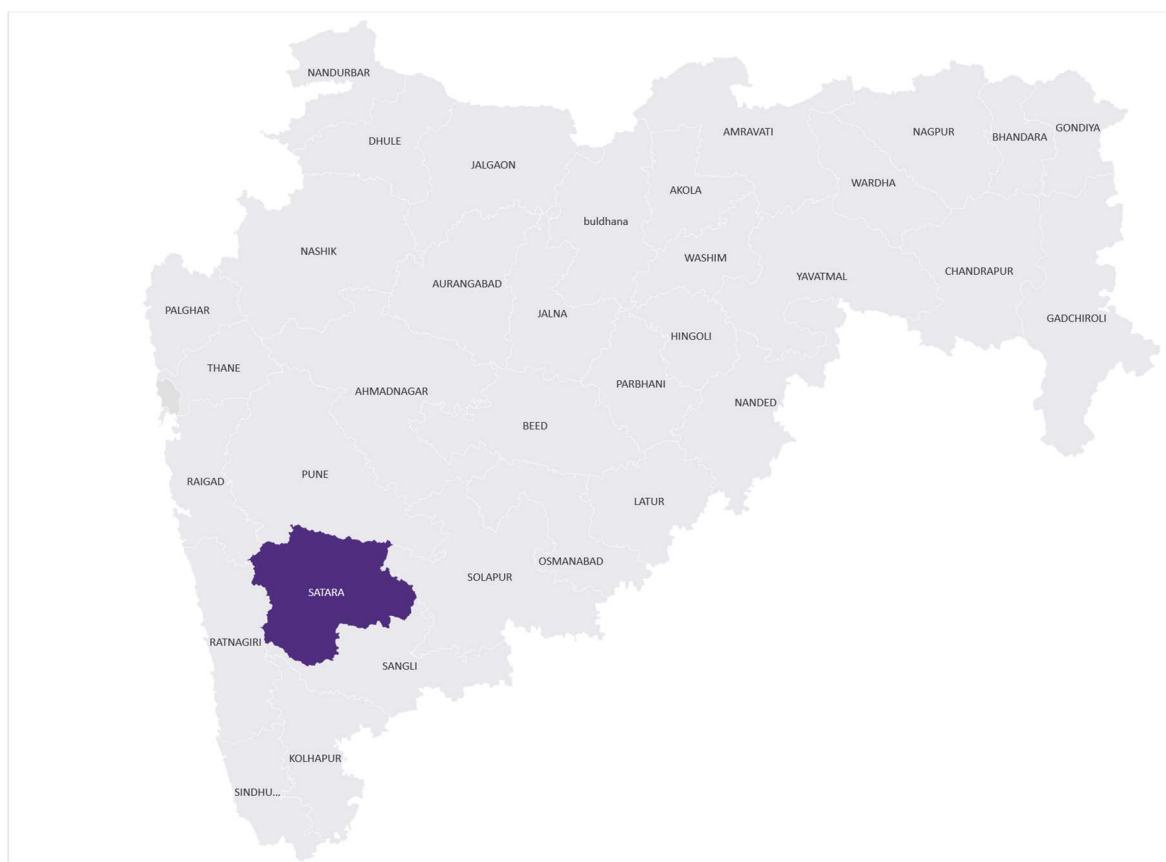
Strawberry (*Fragaria vesca*) is the most economically important soft fruit worldwide. It is a very high value per hectare crop currently being cultivated in a significant quantity in more than 75 countries. important fruit crop of India and its commercial production is possible in temperate and sub-tropical areas of the country. The strawberry plant is very amenable to many production schemes and can be grown under many climatic zones. Over the last few years, strawberries have experience one of the highest rates of consumption growth, where it is the highest consumed fresh fruits, rich in proteins, minerals Ca, P and K, fair source of Vitamin -A, B1, B2, niacin and Vitamin – C and it is regarded as one of the best natural sources of antioxidant. Besides, strawberry can be processed for making wine, jam, jelly, ice cream and soft drinks etc.

3. STRAWBERRY SNAPSHOT

India	Total Production in India	6209 MT
	Total Area under cultivation in India	212.2 Ha
	Top Strawberry producing States	Maharashtra, Meghalaya
	Agri Export zones of Strawberry	No Agri Export Zone

Maharashtra	Total Production in Maharashtra	3281 MT
	Average yield in Maharashtra	1.99 MT/ha (2021-22)
	Top Strawberry producing Districts in MH	Satara
	Seasonality of Strawberry in Maharashtra	April – May and October – November

4. STRAWBERRY CLUSTERS IDENTIFIED UNDER MAGNET



District	Area in '000 ha	Quantity in '000 MT	Productivity (MT/ha)
Satara	1.640	3.280	2.00

Source: Area and Production Statistics, Ministry of Agriculture and Farmers Welfare: 2021-22

5. SOME USEFUL LINKS – MARKET INTELLIGENCE AND TECHNOLOGY

Market Intelligence		
Sr. No	Description	Web - Links
1	Strawberry - Overview	STRAWBERRY (nhb.gov.in)
2	Strawberry – Farming and Harvesting	Strawberry Farming; Planting; Growing; Care; Harvesting Agri Farming

Project Components & Technology			
Sr. No	Components	Links	Document Page no
1	Sorting, Grading, Washing	http://www.nccd.gov.in/PDF/Cold-chain%20Awareness%20Booklet.pdf	8
2	Pre-cooling unit		8
3	Cold room (staging)		9
4	Cold storage units		9
5	Ripening Chamber		19
6	Refer van		9
8	Pulping Line	(148) How Mango pulp made in Factory Mango Pulp Processing Plant alphonso mango Inside Factory Video - YouTube	
9	Freeze Drying Line	<ul style="list-style-type: none"> https://youtu.be/Wz5NIYZsNy0 https://youtu.be/eE993Vs7j8s https://youtu.be/vLIURjyoY40 	
10	Blast Freeze	https://www.youtube.com/watch?v=WulyeVKN-lw	
11	Frozen Storage	<ul style="list-style-type: none"> Freezing of fruits and vegetables (fao.org) DE-11: Lesson 24. STORAGE OF FROZEN FOODS (iasri.res.in) 	

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6. PREFERRED PROJECT PROMOTER PROFILE

A. High Capital Investment & 'Tough to Compete' Businesses – which may be pursued by highly seasoned and experienced applicants

- VCO/FPO**, who is eligible as per eligibility *criteria* under Matching Grant (Output II) Guidelines of the MAGNET Project, **as well as** has been involved in manufacturing and/or trading of same/ similar value-added products of MAGNET/Non-MAGNET crops in recent years and has developed significant credentials in domestic and/or export markets. This should be supported by relevant documentation such as past **trade history, Contracts/ MoU/ Lol** with existing and potential buyers of project products.
- The promoter's experience and detailed project report exhibit considerable understanding of - technical and technology knowhow, market potential and market dynamics for the proposed products, risks and opportunities involved.
- Turnover & Net Worth**
 - **For VCO** – The audited turnover figures of recent 3 years and latest certified Net Worth (with supporting documents) of the company/firm demonstrate promoter's capabilities to invest in and operate the proposed project.
 - **For FPO** - The audited turnover figures of recent 3 years and the current Paid-up Capital (and reserves) of the company/co-operative demonstrate promoter's capabilities to invest in and operate the proposed project.

B. Moderate Capital Investment & Competitive Businesses – may be pursued by applicants having some relevant experience

- VCO/ FPO**, who is eligible as per eligibility criteria under Matching Grant (Output II) Guidelines of the MAGNET Project, **as well as** has been involved in manufacturing and/or trading of agri/food products of MAGNET/Non-MAGNET crops in recent years and has developed significant credentials in domestic and/or export markets.
- The promoter's experience and detailed project report exhibit considerable understanding of - technical and technology knowhow, market potential and market dynamics for the proposed products, risks and opportunities involved.
- Turnover & Net Worth**
 - **For VCO** – The audited turnover figures of recent 3 years and latest certified Net Worth (with supporting documents) of the company/firm demonstrate promoter's capabilities to invest in and operate the proposed project.
 - **For FPO** - The audited turnover figures of recent 3 years and the current Paid-up Capital (and reserves) of the company/co-operative demonstrate promoter's capabilities to invest in and operate the proposed project.

C. Low Capital Investment & Competitive Businesses – may be pursued by applicants having some relevant experience

- Any applicant (VCO/ FPO/ CMRC/ Other)** who eligible as per eligibility criteria under Matching Grant (Output II) Guidelines of the MAGNET Project.

7. MODEL I – PACKHOUSE OPERATIONS

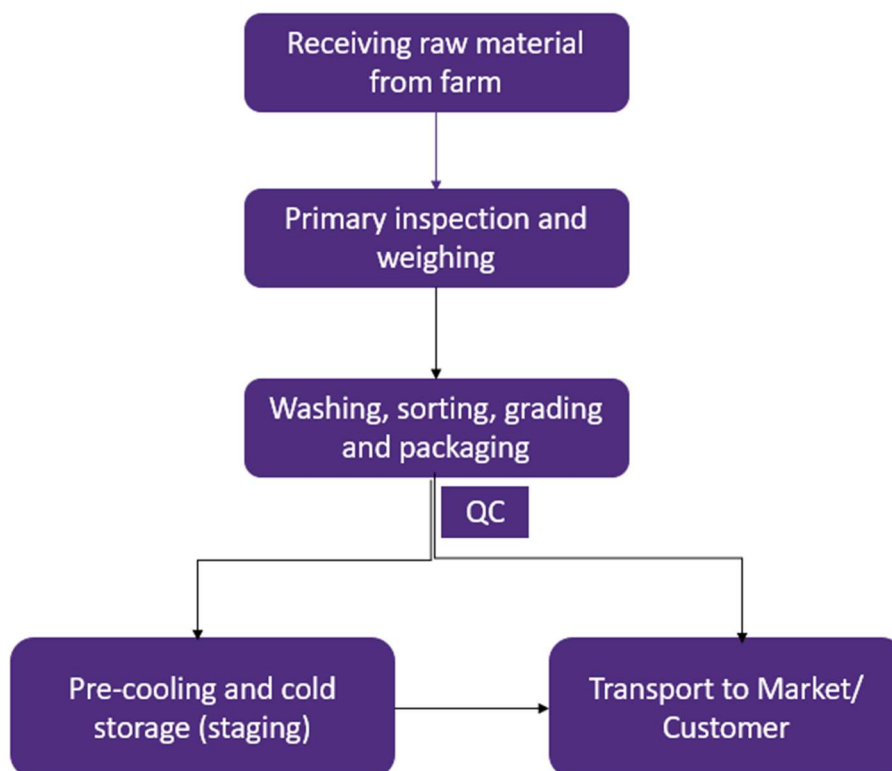
MODEL – I: PACKHOUSE OPERATIONS

Target MAGNET Crop	Primary Crop: Strawberry Secondary Crops: Any other MAGNET crops suitable for the project
Project Category	(Recommended as) Small Sized
Description	The proposed project primarily involves primary pack-house operations (semi-automatic washing-sorting-grading-packing) for strawberry and other compatible MAGNET crops. For efficient operations of the facility, suitable pre-cooling, staging cold rooms, as well as utilities that are required to support the main operations are incorporated.
Preferred Applicant Profile	Low Capital Investment & Competitive Businesses – may be pursued by applicants having some relevant experience

i) Key Facilities:

S. No.	Type of facilities proposed to be created	Capacity	No. of Units
1	Packhouse (Washing, Sorting, Grading Line)	0.5 TPH	1
2	Pre-cooling Chamber	6 MT	1
3	Staging Cold Room	30MT	1
4	Utilities	Transformer, DG Set, APFC, Stabilizer, Crates and Pallets	1 Set

ii) Process Flow



iii) Project Cost:

S. No.	Components	Proposed Cost	*Eligible Cost	Grant on Eligible Cost (%)	Matching Grant (Rs. Lakhs)
1	Technical Civil Works		17.11	60%	10.27
2	Non-Technical Civil Works		-	0%	-
3a	Main P&M		86.73	60%	52.04
3b	Utilities		35.51	60%	21.30
4	Reefer Van		-	60%	-
5	Misc. Fixed Assets		-	0%	-
6	Contingencies		-	0%	-
7	Working Capital Margin		-	0%	-
	Subtotal		139.35		83.61
8	Preliminary & Pre-operative Expenses		6.97	60%	4.18
	Total		146.31		87.79

iii) Means of Finance

Means of Finance	Proposed Amount (Rs. Lakhs)	Eligible Cost (Rs. Lakhs)	% of Total Cost
Promoter Equity		29.26	20%
Bank Term Loan		29.26	20%
Matching Grant		87.79	60%
Total		146.31	100%

*The project cost calculations are based on cost norms (of MIDH/MOFPI, wherever applicable). While preparing DPR, users must necessarily seek quotations from key suppliers to arrive at their own project cost accordingly. However, users must also note that grant, if the project is selected, shall be accorded as per prevailing cost norms.

Civil Works (Puff Panels/ Brick Wall)							
							Rupees in Lakh
Sr. No.	Description	Area (Sq. Meter)	Cost Norm Per Sq.m	Total Cost (As per Cost Norm)	Taxes	Total Eligible Cost	Remark
A	Technical Civil Work						
1	Pre-cooling Chamber	15	-	-	-	-	Consolidated cost norms considered in P&M
2	Staging Cold Room	50	-	-	-	-	
3	Washing-Sorting-Grading-Packing Line Area	70	0.10	7.00	1.26	8.26	As per cost norms
4	Lab room	15	0.10	1.50	0.27	1.77	
5	Water tank - UGT	LS		2.00	0.36	2.36	Actual requirement of water will vary as per applicant's end use
6	Water tank - OHT	LS		2.00	0.36	2.36	
7	Toilets (Separate for Male & Female)	20	0.10	2.00	0.36	2.36	As per cost norms
	Sub Total (A)	170.00		14.50	2.61	17.11	
B	Non-Technical Civil Works						
1	Administrative Office	-	-	-	-	-	Ineligible
2	Canteen, Internal Roads	-	-	-	-	-	
3	Boundary Wall	-	-	-	-	-	
	Sub Total (B)	-		-	-	-	
	Grand Total (A+B)	170.00		14.50	2.61	17.11	

Plant & Machinery									
Rupees in Lakh									
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
A	Main Plant & Machinery								
1	Pre-cooling Chamber	6 MT	1	Critical	25.00	25.00	4.50	29.50	As per cost norms
2	Staging Cold Room	30 MT	1	Critical	15.00	15.00	2.70	17.70	As per cost norms
3	Washing-Sorting-Packing Line	0.5 TPH	1 set						
a	Fruit Washer	For 500 kg Line	1	Critical	7.50	7.50	1.35	8.85	As per Cost Norms
b	Surface Dryer Fan Conveyor		1	Critical					
c	Conveyor Belt		1	Critical					
d	Sorting Tables		2	Critical					
e	Weighing Machines	1 unit x 5 KG, 1 unit X 50 Kg	1	Critical					
f	SS Packing Tables		2	Critical					
g	Strapping Machine		1	Optional					
h	Grading Machinery (Size and Colour)		1	Optional	20.00	20.00	3.60	23.60	Eligible cost as per market rate analysis
i	Cooling system for process hall (HVAC) with microbial filters		1	Critical	5.00	5.00	0.90	5.90	Eligible cost as per market rate analysis
4	Lab equipment's		1	Optional		1.00	0.18	1.18	
	Subtotal (A)					73.50	13.23	86.73	
B	Utilities								
1	Transformer	80 KVA	1	Critical	1.15	1.15	0.21	1.36	As per cost norms

Plant & Machinery									
									Rupees in Lakh
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
2	Electrification including, power & controls cabling, PCC & MCC panel, Earthing, Internal Lighting, etc	Misc.	1 Set	Critical	4.00	4.00	0.72	4.72	
3	DG Set	60 KVA	1	Critical	6.00	6.00	1.08	7.08	As per cost norms
4	Automatic Power Factor Controller	80 KVA	1	Critical	0.72	0.72	0.13	0.85	
5	Servo Voltage Stabilizer	80 KVA	1	Critical	0.77	0.77	0.14	0.91	
6	RO Plant	2 KLPH	1	Optional	3.50	3.50	0.63	4.13	
7	Effluents Treatment Plant (ETP)	10 KLD	1 Set	Optional	2.00	2.00	0.36	2.36	
8	Sewage Treatment Plant (STP)	5 KLD	1 Set	Critical	3.75	3.75	0.68	4.43	
9	Fire Safety Equipment's	Misc.	1 Set	Critical		1.70	0.31	2.01	1% of technical civil area
10	Plastic Crates	20 KG	800	Critical	0.00	2.20	0.40	2.60	As per cost norms
11	Plastic Pallets	1 MT	160	Critical	0.03	4.00	0.72	4.72	
12	Hand pallet truck	2.5 MT	1	Optional	0.30	0.30	0.05	0.35	Eligible cost as per market rate analysis
	Subtotal (B)					30.09	5.42	35.51	
	Grand Total (A+B)					103.59	18.65	122.24	

8. MODEL II – PACKHOUSE OPERATIONS AND PULPING LINE

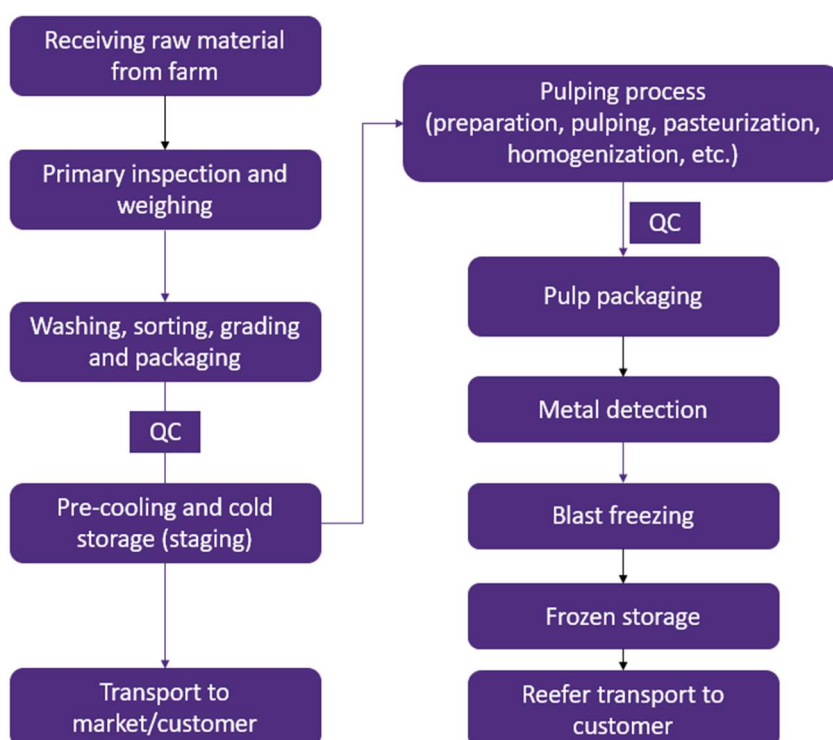
MODEL – II: PACKHOUSE OPERATIONS AND PULPING LINE

Target MAGNET Crop	Primary Crop: Strawberry Secondary Crops: Any other MAGNET crops suitable for the project
Project Category	(Recommended as) Large Sized
Description	The proposed project primarily involves primary pack-house operations (semi-automatic washing-sorting-grading-packing) for strawberry and other compatible MAGNET crops. For efficient operations of the facility, suitable pre-cooling, staging cold rooms, as well as utilities that are required to support the main operations are incorporated.
Preferred Applicant Profile	High Capital Investment & 'Tough to Compete' Businesses – which may be pursued by highly seasoned and experienced applicants

i) Key Facilities:

S. No.	Type of facilities proposed to be created	Capacity	No. of Units
1	Packhouse (Washing, Sorting, Grading Line)	1 TPH	1
2	Pre-cooling Chamber	6 MT	1
3	Staging Cold Room	30MT	1
4	Pulping Line	0.5 TPH	1
5	Blast Freezer	1 MT per batch	1
6	Frozen Cold Storage	100 MT	1
7	Utilities	Transformer, DG Set, APFC, Stabilizer, Crates and Pallets	1 Set

ii) Process flow:



ii) Project Cost:

S. No.	Components	Proposed Cost	Eligible Cost*	Grant on Eligible Cost (%)	Matching Grant (Rs. Lakhs)
1	Technical Civil Works		50.45	60%	30.27
2	Non-Technical Civil Works		-	0%	-
3a	Main P&M		232.46	60%	139.48
3b	Utilities		105.68	60%	63.41
4	Reefer Van		20.45	60%	12.27
5	Misc. Fixed Assets		-	0%	-
6	Contingencies		-	0%	-
7	Working Capital Margin		-	0%	-
	Subtotal		409.04		
8	Preliminary & Pre-operative Expenses		20.00	60%	12.00
	Total		429.04		257.42

iii) Means of Finance

Means of Finance	Proposed Amount (Rs. Lakhs)	Eligible Cost (Rs. Lakhs)	% of Total Cost
Promoter Equity		85.81	20%
Bank Term Loan		85.81	20%
Matching Grant		257.42	60%
Total		429.04	100%

*The project cost calculations are based on cost norms (of MIDH/MOFPI, wherever applicable). While preparing DPR, users must necessarily seek quotations from key suppliers to arrive at their own project cost accordingly. However, users must also note that grant, if the project is selected, shall be accorded as per prevailing cost norms.

Civil Works (Puff Panels/ Brick Wall)							
							Rupees in Lakh
Sr. No.	Description	Area (Sq. Meter)	Cost Norm Per Sq.m	Total Cost (As per Cost Norm)	Taxes	Total Eligible Cost	Remark
A	Technical Civil Work						
1	Pre-cooling Chamber	30	-	-	-	-	Consolidated cost norms applied in P&M
2	Staging Cold Room	50	-	-	-	-	
3	Frozen storage	95	-	-	-	-	
4	Washing-Sorting-Grading-Packing Line	100	0.10	10.00	1.80	11.80	As per cost norms
5	Processing (Pulping) and Packaging Area	80	0.10	8.00	1.44	9.44	
6	Blast Freezer Area	10	0.10	1.00	0.18	1.18	
7	Steam Boiler Civil Works	50	0.10	5.00	0.90	5.90	
8	Lab room	15	0.10	1.50	0.27	1.77	
9	Machine area	20	0.10	2.00	0.36	2.36	
10	Toilets (Separate for Male & Female)	35	0.10	3.50	0.63	4.13	
11	Weighbridge Civil Works	LS		1.75	0.32	2.07	Eligible cost as per market rate analysis
12	Water Tank- UGT	LS		6.00	1.08	7.08	Actual requirement of water will vary as per applicant's end use
13	Water Tank- OHT	LS		4.00	0.72	4.72	
	Sub Total (A)	485.00		41.75	7.52	49.27	
B	Non-Technical Civil Works						
1	Administrative Office	-	-	-	-	-	Ineligible
2	Canteen	-	-	-	-	-	
3	Internal Roads/ Compound Wall	-	-	-	-	-	
	Sub Total (B)	-		-	-	-	
	Grand Total (A+B)	470.00		42.75	7.70	50.45	

Plant & Machinery									
									Rupees in Lakh
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
A	Main Plant & Machinery								
1	Pre-cooling Chamber	6 MT	1	Critical	25.00	25.00	4.50	29.50	As per cost norms
2	Staging Cold Room	30 MT	1	Critical	15.00	15.00	2.70	17.70	As per cost norms
3	Washing-Sorting-Grading-Packing Line	1 TPH Line	1 set						
a	Fruit Washer	For 1 TPH Line	1	Critical	25.00	25.00	4.50	29.50	As per cost norms
b	Surface Dryer Fan Conveyor		1	Critical					
c	Conveyor Belt		1	Critical					
d	Sorting Tables		2	Critical					
e	Weighing Machines	1 unit x 50 KG, 1 Unit X 100 Kg	2	Critical					
f	SS Packing Tables		2	Critical					
g	Strapping Machine		1	Critical					
h	Grading Machinery (Size and Colour)		1	Optional	20.00	20.00	3.60	23.60	Eligible cost as per market rate analysis
i	Cooling system for process hall (HVAC) with microbial filters		1	Critical	5.00	5.00	0.90	5.90	
4	Pulping Section	500 Kg/hr							
a	Preparatory line (conveyor, sorting & grading, washing, weighing)	For 500 Kg/hr	1 Set	Critical	30.00	30.00	5.40	35.40	Eligible cost as per market rate analysis

Plant & Machinery									
Rupees in Lakh									
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
b	Pulping Line (fruit mill, pulper, pasteurizer, homogenizer etc.)			Critical					
5	Metal Detector (Conveyor Belt)		1	Critical	5.00	5.00	0.90	5.90	Eligible cost as per market rate analysis
6	Blast Freezer (Including refrigeration and PEB structure)	1 MT/ Batch	1	Critical	35.00	35.00	6.30	41.30	As per cost norms
7	Frozen Storage	100 MT	1	Critical	0.15	15.00	2.70	17.70	As per cost norms
8	Lab equipment's	Misc. (As required for plant operations)	1 Set	Critical	2.00	2.00	0.36	2.36	Eligible cost as per market rate analysis
9	Steam Boiler with Accessories	500 Kg	1	Critical	15.00	15.00	2.70	17.70	As per cost norms
	Subtotal (A)					177.00	31.86	208.86	
B	Utilities								
1	Transformer	120 KVA	1	Critical	1.73	1.73	0.31	2.04	As per cost norms
2	3 Phase Electrification including, power & controls cabling, PCC & MCC panel, Earthing, Internal Lighting, etc	Misc.	1 Set	Critical	6.00	6.00	1.08	7.08	Eligible cost as per market rate analysis
3	DG Set	80 KVA	1	Critical	5.68	5.68	1.02	6.70	As per cost norms

Plant & Machinery									
Rupees in Lakh									
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
4	Automatic Power Factor Controller	120 KVA	1	Critical	1.08	1.08	0.20	1.28	
5	Servo Voltage Stabilizer	120 KVA	1	Critical	1.15	1.15	0.21	1.36	
6	Air Compressor with Air Drier	54 CFM	1 Set	Critical	2.50	2.50	0.45	2.95	
7	RO Plan	2 KLPH	1	Critical	3.50	3.50	0.63	4.13	
8	ETP	20 KLD	1 Set	Critical	4.00	4.00	0.72	4.72	
9	STP	10 KLD	1 Set	Critical	13.33	13.33	2.40	15.73	
10	Fire Safety equipment's	Misc.	1 Set	Critical		4.70	0.85	5.55	10% of technical civil area
11	Plastic Crates	20 KG	800	Critical	0.00	2.20	0.40	2.60	
12	Plastic Pallets	1 MT	130	Critical	0.03	3.25	0.59	3.84	As per cost norms
13	Hand pallet truck	2 MT	2	Critical	0.30	0.60	0.11	0.71	
14	Battery Operated Forklift	1MT	1	Critical	10.00	10.00	1.80	11.80	Eligible cost as per market rate
15	Dock Doors		1	Optional					
16	Dock Levellers		1	Optional	7.00	7.00	1.26	8.26	
17	Dock Shelter		1	Optional					
18	Weighbridge (Excluding Civil Works)	60 MT	1	Optional	7.00	7.00	1.26	8.26	As per cost norms
19	PLC System		1	Optional	5.00	5.00	0.90	5.90	
20	Cooling Tower with Accessories	150 TR	1	Critical	1.50	1.50	0.27	1.77	
21	Water Chiller	50 TR	1	Critical	9.33	9.33	1.68	11.01	
	Subtotal (B)					139.71	25.15	164.86	
C	Reefer Vans	6 MT	1	Optional	17.33	17.33	3.12	20.45	As per cost norms Negative temperature van
	Subtotal (C)					17.33	3.12	20.45	
	Grand Total (A+B+C)					334.04	60.13	394.17	

9. MODEL III – PACKHOUSE OPERATIONS AND FREEZE-DRYING LINE

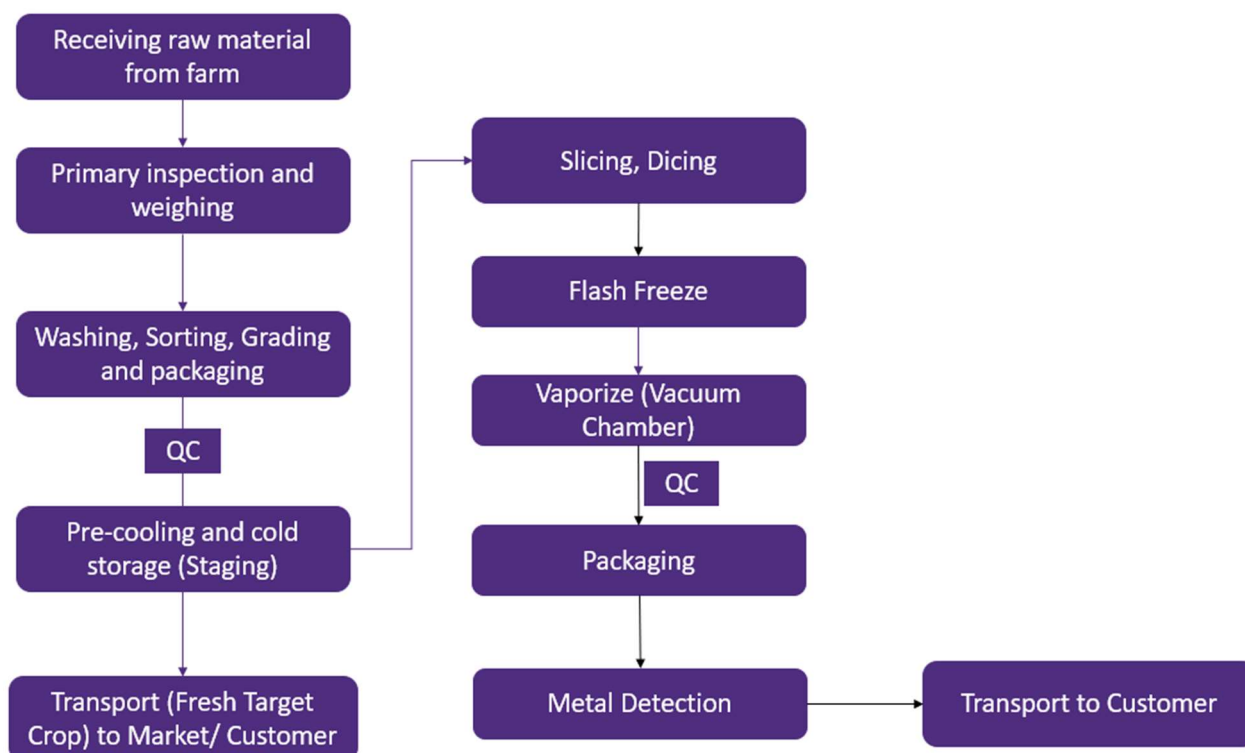
MODEL – III: PACKHOUSE OPERATIONS AND FREEZE-DRYING LINE

Target MAGNET Crop	Primary Crop: Strawberry Secondary Crops: Any other MAGNET crops suitable for the project
Project Category	(Recommended as) Large Sized
Description	The proposed project primarily involves primary pack-house operations (semi-automatic washing-sorting-grading-packing) for Strawberry and other compatible MAGNET crops. Further, it involves freeze drying line for production of freeze-dried products. For efficient operations of the facility, suitable pre-cooling, staging cold rooms, as well as utilities that are required to support the main operations are incorporated.
Preferred Applicant Profile	High Capital Investment & ‘Tough to Compete’ Businesses – which may be pursued by highly seasoned and experienced applicants

i) Key Facilities:

S. No.	Type of facilities proposed to be created	Capacity	No. of Units
1	Packhouse (Washing, Sorting, Grading Line)	1 TPH	1
2	Pre-cooling Chamber	6 MT	1
3	Staging Cold Room	30MT	1
4	Freeze Drying Line	0.5 TPH	1
5	Utilities	Transformer, DG Set, APFC, Stabilizer, Crates and Pallets	1 Set

ii) Process flow:



iii) Project Cost:

S. No.	Components	Proposed Cost	Eligible Cost*	Grant on Eligible Cost (%)	Matching Grant (Rs. Lakhs)
1	Technical Civil Works		72.87	60%	43.72
2	Non-Technical Civil Works		-	0%	-
3a	Main P&M		412.41	60%	247.45
3b	Utilities		158.40	60%	95.04
4	Reefer Van		-	60%	-
5	Misc. Fixed Assets		-	0%	-
6	Contingencies		-	0%	-
7	Working Capital Margin		-	0%	-
	Subtotal		643.67		
8	Preliminary & Pre-operative Expenses		20.00	60%	12.00
	Total		663.67		398.20

iii) Means of Finance

Means of Finance	Proposed Amount (Rs. Lakhs)	Eligible Cost (Rs. Lakhs)	% of Total Cost
Promoter Equity		132.73	20%
Bank Term Loan		132.73	20%
Matching Grant		398.20	60%
Total		663.67	

*The project cost calculations are based on cost norms (of MIDH/MOFPI, wherever applicable). While preparing DPR, users must necessarily seek quotations from key suppliers to arrive at their own project cost accordingly. However, users must also note that grant, if the project is selected, shall be accorded as per prevailing cost norms.

Civil Works (Puff Panels/ Brick Wall)							
Rupees in Lakh							
Sr. No.	Description	Area (Sq. Meter)	Cost Norm Per Sq.m	Total Cost (As per Cost Norm)	Taxes	Total Eligible Cost	Remark
A	Technical Civil Work						
1	Pre-cooling Chamber	30	-	-	-	-	Consolidated cost norms applied in P&M
2	Staging Cold Room	50	-	-	-	-	
3	Washing-Sorting-Grading-Packing Line Area	100	0.10	10.00	1.80	11.80	As per cost norms
4	Processing Area (Freeze Drying)	350	0.10	35.00	6.30	41.30	
5	Testing Lab	15	0.10	1.50	0.27	1.77	
6	Toilets (Separate for Male & Female)	35	0.10	3.50	0.63	4.13	
7	Weighbridge Civil Works	LS		1.75	0.32	2.07	Eligible cost as per market rate analysis
8	Water Tank- UGT	LS		6.00	1.08	7.08	Actual requirement of water will vary as per applicant's end use
9	Water Tank- OHT	LS		4.00	0.72	4.72	
	Sub Total (A)	580.00		61.75	11.12	72.87	
B	Non-Technical Civil Works						
1	Administrative Office	-	-	-	-	-	Ineligible
2	Canteen	-	-	-	-	-	
3	Internal Roads/ Compound Wall	-	-	-	-	-	
	Sub Total (B)	-		-	-	-	
	Grand Total (A+B)	565.00		61.75	11.12	72.87	

Plant & Machinery									
									Rupees in Lakh
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
A	Main Plant & Machinery								
1	Pre-cooling Chamber	6 MT	1	Critical	25.00	25.00	4.50	29.50	As per cost norms
2	Staging Cold Room	30 MT	1	Critical	15.00	15.00	2.70	17.70	As per cost norms
3	Washing-Sorting-Grading-Packing Line	1 TPH Line	1 set						
a	Fruit Washer	For 1 TPH Line	1	Critical	25.00	25.00	4.50	29.50	As per cost norms
b	Surface Dryer Fan Conveyor		1	Critical					
c	Conveyor Belt		1	Critical					
d	Sorting Tables		2	Critical					
e	Weighing Machines	1 unit x 5 KG, 1 Unit X 100 Kg	2	Critical					
f	SS Packing Tables		2	Critical					
g	Strapping Machine		1	Optional					
h	Grading Machinery (Size and Colour)		1	Optional	20.00	20.00	3.60	23.60	Eligible cost as per market rate analysis
i	Cooling system for process hall (HVAC) with microbial filters		1	Critical	5.00	5.00	0.90	5.90	
4	Processing line (Freeze Drying)	0.5 TPH Line (input basis)	1 Set						
a	Preparatory line (Washer, inspection conveyor, sorting and grading, preparation table)	For 0.5 TPH Line	1 Set	Critical	252.50	252.50	45.45	297.95	As per cost norm
b	Peeler, slicer, dicer		1 Set	Critical					
c	Freeze dryer		1 Set	Critical					

Plant & Machinery									
Rupees in Lakh									
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
d	Refrigeration Plant for freeze dryer			Critical					
e	Packaging machine		1	Critical					
f	Dehumidifier		1	Critical					
5	Metal Detector		1	Critical	5.00	5.00	0.90	5.90	Eligible cost as per market rate analysis
6	Lab equipment's	Misc. (As required for plant operations)	1 Set	Critical	2.00	2.00	0.36	2.36	Eligible cost as per market rate analysis
	Subtotal (A)					349.50	62.91	412.41	
B	Utilities								
1	Transformer	220 KVA	1	Critical	3.52	3.52	0.63	4.15	As per cost norms
2	3 Phase Electrification including, power & controls cabling, PCC & MCC panel, Earthing, Internal Lighting, etc	Misc.	1 Set	Critical	11.00	11.00	1.98	12.98	Eligible cost as per market rate analysis
3	DG Set	150 KVA	1	Critical	10.65	10.65	1.92	12.57	As per cost norms
4	PLC System		1	Optional	5.00	5.00	0.90	5.90	
5	Automatic Power Factor Controller	220 KVA	1	Critical	1.98	1.98	0.36	2.34	
6	Servo Voltage Stabilizer	220 KVA	1	Critical	2.04	2.04	0.37	2.40	
7	Air Compressor with Air Drier	20 CFM	1 Set	Critical	2.50	2.50	0.45	2.95	
8	RO/ Water Softening Plant	2 KLPH	1	Critical	3.50	3.50	0.63	4.13	
9	ETP	30 KLD	1 Set	Optional	6.00	6.00	1.08	7.08	
10	STP	15 KLD	1 Set	Critical	20.00	20.00	3.60	23.60	

Plant & Machinery									
Rupees in Lakh									
Sr. No	Plant and Machinery	Capacity	Quantity	Critical/Optional	Cost Norm per unit	Total Cost (All Units)	Taxes	Total Eligible Cost	Remark
11	Fire Safety equipment's	Misc.	1 Set	Critical		5.65	1.02	6.67	10% of technical civil area
12	Dock Doors		1	Optional					As per cost norms
13	Dock Levellers		1	Optional	7.00	7.00	1.26	8.26	
14	Dock Shelter		1	Optional					
15	Weighbridge (Excluding Civil Works)	60 MT	1	Optional	7.00	7.00	1.26	8.26	
16	Plastic Crates	20 KG	800	Critical	0.00	2.20	0.40	2.60	
17	Plastic Pallets	1 MT	30	Critical	0.03	0.75	0.14	0.89	Eligible cost as per market rate analysis
18	Hand Pallet truck	2 MT	1	Critical	0.30	0.30	0.05	0.35	
19	Forklift	1 MT	1	Optional	10.00	10.00	1.80	11.80	
	Subtotal (B)					134.24	24.16	158.40	
	Grand Total (A+B)					483.74	87.07	570.81	

Annexure I: District wise Area and Production of Strawberry for Maharashtra: 2021- 22

S.No.	District	Banana	
		Area ('000 Ha)	Production ('000 MT)
1	Ahmednagar	-	-
2	Akola	-	-
3	Amravati	0.001	0.001
4	Aurangabad	-	-
5	Beed	-	-
6	Bhandara	-	-
7	Buldhana	-	-
8	Chandrapur	-	-
9	Dhule	-	-
10	Gadchiroli	-	-
11	Gondia	-	-
12	Hingoli	-	-
13	Jalgaon	-	-
14	Jalna	-	-
15	Kolhapur	-	-
16	Latur	-	-
17	Nagpur	-	-
18	Nanded	-	-
19	Nandurbar	-	-
20	Nashik	-	-
21	Osmanabad	-	-
22	Palghar	-	-
23	Parbhani	-	-
24	Pune	-	-
25	Raigad	-	-
26	Ratnagiri	-	-
27	Sangli	-	-
28	Satara	1.640	3.280
29	Sindhudurg	-	-
30	Solapur	-	-
31	Thane	-	-
32	Wardha	-	-
33	Washim	-	-
34	Yavatmal	-	-

Source: Area and Production Statistics, Ministry of Agriculture and Farmers Welfare: 2021-22

Web-link: <http://www.aps.dac.gov.in/Public/Report.aspx>

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