Detailed Project Report (DPR) :Model template

for NHB Scheme No.1

for Bitter gourd (Crop)

Scheme.1	**Development of Commercial Horticulture through Production and Post-Harvest Management of Horticulture Crops:** 1. Open field condition **2. Protected Cover ✓** 3. Integrated Post Harvest Management

Crop			Tick mark
Scheme components	1. Protected Cover of NHB specified crops	Within overall cost ceiling	✓
		+Farm Mechanisation	✓
		+Good Agri.Practices (GAP)	✓
		+Plastic Mulching	✓

Submitted by

……Applicant with full correspondence Address

Detailed Project Report (DPR) will have to be signed by the applicant (s) / authorised person (in case of legal entity) on each page with date -along with Horticulture and Project Finance Expert wherever applicable.

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	2. Curing	
	3. Cleaning / Washing	
	4. Sorting and Grading	
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	2. Pack House	
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	4. Cold Room (Staging)	
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	6. Ripening Chamber	
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Checklist of documents to be submitted at Market Viability and Financial Viability stage and during JIT.

Project at a Glance

1.	Applicant (s) / Legal entity Name		
2.	Constitution / Applicant nature / beneficiary		
3.	NHB Scheme for which DPR is made		
4.	Project Activity		
5.	Nature of project- Green field/ pre-existing- expansion / component specific		
6.	Products, By-products and services		
7.	Land		
	1. Land ownership: Owned or on registered lease for minimum of 10 effective years from the date of IPA. In other words ideally one should have 11 Years of registered lease including a processing period of 1 Year from the time of application for Technical feasibility.		
	2. Project Area and Survey /khasra/ Gat/Dag No.		
	3. Project Site Address with Postal Code and Police Station Name		
8.	Technical feasibiltiy		
	1. Agro-climatic suitability		
	2. Research institution whose technology and package of practices are proposed to be followed		
	3. Crop husbandry / PHM is based on evidence based R&D		
9.	Existence of similar project activity in the said District		
10.	Whether the project is located in the crop cluster/ hub/ belt		Yes/No
11.	Project economic period/ economic life		
12.	Total Project Cost of the proposal		
13.	• Open field condition or Protected Cover		
	• Integrated Post Harvest Management		
	• Total		
14.	Project completion period (in months)		
	Expected Implementation timeline	Commencement	
		Completion	
15.	Total Eligible Project cost as assessed by the Applicant as per NHB guidelines		
16.	Bank/ Financial Institution identified for Term loan		
17.	Proposed Means of Finance	Promoters contribution (in Lakh Rs.) & %	
		Bank Term loan (in Lakh Rs.) & %	
		Un secured loan (in Lakh Rs.) & %	
		Total	
18.	Gestation period		
19.	Projected Key Financial Parameters	Current Ratio other than export units	
20.		CR-Export units	
		IRR /BCR	
		DSCR*	
		Average DSCR	
		Debt to Equity Ratio i.e DER	
		TOL/TNW	
		Promoters Contribution	
		Break Even Point	

		Security Coverage Ratio	
		Repayment period	
21.	Productivity expected (in MT/Qtl/Kg/numbers)		
22.	Likely Gap in productivity compared to National /Global average		
23.	Potential Market (s)for the commodity and distance from the project site		
24.	Employment generation	Direct- regular per annum	
		In-direct – Man days per annum	

1.About the Applicant / Promoter and his/her entrepreneurship

A. About Applicant / Promoter

1.1.In case of Individuals or Group of farmers (if applicable)		
Individual		
1. Name of Farmer / Entrepreneur/Individual/ Proprietor		
2. Parents or spouse name of Individual		
Group of Farmer growers / SHG- Promoters		
1. Name of Group		
2. Names of all members of group with their father, mother/husband/ wife name		
1.2.In case of Legal entity (if applicable)		
Name / Title		
1. Incorporation / Registration number/ CIN & date of registration		
2. Act under which Registered		
3. Registering authority		
4. Name of Promoter / CEO/CMD/MD/		
5. If it is FPO/ FPC/ Producers Co-op society / Growers Co-operative Marketing federation- Please specify		
6. If it is Reg. Society/ Company/ Corporation / Partnership firm / Proprietary firm- Please specify		
7. Name of Promoter (s)/ Board of Directors/ Partners etc.		
8. Status of the promoter / applicant in the legal entity-please specify		
9. Whether the promoter / applicant is authorised by the Legal entity- Yes/No		
10. In case of Company/partnership firms / legal person a. Certified copy of Company/Partnership incorporation/ registration certificate issued by Competent Authority, as applicable b. Certified copy of MoA/Bye Laws c. Certified copy of Board of Directors Resolution duly passed and authorizing signatory of application to apply for IPA d. Certified copy of latest Audit Report, if applicable i. (are to be made available in case the project and the application is considered for processing.- State Yes/No		
11. NGO- Specify- give details of registration		
1.3.Government Institutions / Organisations-- Please specify (if applicable)		
(i) Marketing Board / Agricultural Produce Marketing Committee APMC		
(ii) Municipal Corporation		
(iii) PSU/ Agro-Industries Corporation		
(iv) ICAR/CAU/SAU/ Government R&D Institution		

1.4.Statutary registration	(As per applicability)	
a. PAN No		
b. Aadhaar No.	Yes/No	
c. Udyog Adhaar No.		
d. GST		
1.5.Correspondence Address	Postal Address with PIN code	
	Telephone	
	Mobile	
	Email id	
	Fax if any:	
1.6.Project / Site Address		
1.7.Social Category (In case of legal entity the CEO and Board of Directors social category is to be mentioned)	General / SC/ST	
	OBC	
	Minority (Muslim/Christians/Sikhs/Buddhists/Parsis/Jains)	
	In case of SC/ST applicants a Certified copy of Caste Certificate issued by Competent Authority is to be enclosed. In case of others a self-declaration is to be enclosed.	
1.8.Location: TSP / NE Region / Hilly States	In case of TSP a self-attested copy of notification is to be enclosed.	
1.9.Gender	Male / Female/Transgender	

B. Applicant/ Promoters' Entrepreneurship:

1.10.CV / Biodata of Applicant (s) / Promoter (s) (Authorised by legal entity) in brief: (If applicants are more than one, all are to provide their CV / Biodata)

a. Name of Applicant/ Promoter:
b. Fathers' & Mothers' name:
c. Spouse name:
d. Date of Birth
e. Place of Birth (village/town/city, District and State)
f. Permanent Address:
g. Educational qualification (Higher Secondary, Under graduation Degree and above)

Education Metric/ U	Name of education / specialisation	Board / College / University/ Institute	Year of Pass	Remarks

h. Horticulture and project proposal specific Trainings if any undergone

Training	Duration and Period	Institute with address	Purpose for undergoing training

i. Current profession with details of Turn over, Accomplishments if any.

j. Previous profession during the last 5 Years with details of Turn over, Accomplishments if any

k. Experience- General and Horticulture

   a. General (Other than Horticulture) specify the activity, establishment/ Office, location etc.

   b. Horticulture-General: State specific activity- crop production, PHM etc. including project site, area, number of years, accomplishments etc.

   c. Horticulture-Experience in proposed activity: provide the name of establishment/office, location, number of years, specialisation etc.

l. Any information that establishes the applicants' entrepreneurship (Should be able to enclose evidence during Market & Financial Viability stage and during JIT):

1.11. Registrations with any Government Agency if any

Government Agency	Provide registration No. details with date and location of registration
a. SFAC	
b. NDDB	
c. MSME	
d. MSME/SSI	
e. Any other	

1.12.Commitment by the applicant: In case the project is approved for pre-IPA, the promoter / CEO/CMD should undergo a 2 Weeks (min.10 working days) project specific training programme in one of the ICAR/CAU/SAU/SHU/ Research Station/ Centres of Excellence/ related Central or State Government institution/ others as found appropriate / approved by NHB.

In case of a Partnership firm/ Company / Legal person

a. Whether the proposed activity is covered under the objectives as per Memorandum of Association (MoA) / Rules explicitly: If so please provide the Article and Rule in verbatim.

b. Professional history of Legal entities Farmers Producer Organisations (FPOs), Self Help Groups, Partnership/ Proprietary Firms, NGOs, Companies (as a Board of Director), Corporations, Cooperatives, Co-operative Marketing federations/ Government Institutions.

c. Management structure if it is a company/ firm etc depicting the position of the applicant.

2.Details of benefits availed / proposed to be availed by the applicant- either individually or as a member of Association of growers, Group of Farmer Growers/consumers, Farmers Producer Organisations (FPOs), Self Help Groups, Partnership/ Proprietary Firms, NGOs, Companies (as a Board of Director), Corporations, Cooperatives, Co-operative Marketing federations from (i) NHB and (ii) other Ministries/ organisations of Central Government and (iii) State Governments including NHM for Horticulture related projects.

Note: The beneficiary should be truthful. In case any information is received later on at any stage about his/her availing of benefit which is not disclosed hereunder will entitle NHB to reject the current proposal and recover the funds if already released.

2.1.In this / proposed project and location:

1. Whether the proposed project proposal has been submitted for consideration under any State Government or Central Government Scheme for financial grant? If yes give details.

2. Whether any subsidy has been availed from the Board, other Central Govt. organisation or State Government for the same activity on the same piece of land, khasra/ Gat/Dag/ etc either in his / her own name individually or in the name of his/her family members or through any legal entity in which he/she is the beneficiary either in the same location, project. - Yes/ No. If Yes, Please provide details

Constitution – Individually or in any form	Ministry/ Organisation	Scheme Name	Project code & Activity	Project Location	Land Survey No	Eligible Project cost (Rs.in lakhs)	Total subsidy/ grant (Rs.in lakhs)	Current status of project- Operational / underutilised / closed

2.2.In earlier / any other Project (s) : Either in his / her own name individually or in the name of his / her family members or through any legal entity or in any form or constitution, in which he / she is the beneficiary either in the current proposed project location or any other location.

2.2.1.From NHB : Whether any assistance in the form of soft loan and subsidy has been availed earlier from the National Horticulture Board? If yes, give details thereof

Year	Scheme Name	Project code & Activity	Project Location	Land Survey No	Eligible Project cost	Total subsidy /grant availed	Current status of project- Operational / underutilised / closed

2.2.2.From Central Government- Ministries / Organisations:

Year	Scheme Name	Project code & Activity	Project Location	Land Survey No	Eligible Project cost	Total subsidy / grant availed	Current status of project- Operational / underutilised / closed

2.2.3.From State Governments:

Year	Scheme Name	Project code & Activity	Project Location	Land Survey No	Eligible Project cost	Total subsidy /grant availed	Current status of project- Operational / underutilised / closed

2.3. Operational status of earlier projects under NHB scheme and other Central Ministries and State Government.

Year	Organisation / Ministry which released assistance	Activity for which assistance is availed & code	Dates			As on date Project Operational status (Running or Closed)	Annual Turnover (of previous Year)	Exports if any	Profitable or loss making	Remarks / Reasons
			Subsidy received	Project completed	Commenced production					

* in case of completed projects and where proposals envisioning expansion/ modernisation are proposed, Annual Reports and Audited Statement of Accounts of the last 3 years are to be made available along with Bank appraisal during Market and Financial Viability stage both online and offline.

2.4.Please provide map of earlier / other subjects and this project- Key map of project land showing project details and land boundary details

2.5.Provide the following details:

a. Have you ever been refused / denied subsidy claim from NHB, NHM, APEDA, NCDC, MoFPI? If Yes please provide details of (i) Project code, (ii) Name of Applicant, (iii) Address (iv) Project activity etc. and the reason for such refusal / denial:

b. If you were a recipient of Government subsidy, have you / your Bank/FI ever been asked to refund the subsidy / call back ? If Yes please provide details of (i) Project code, (ii) Name of Applicant, (iii) Address (iv) Project activity etc. and the reason for such refusal / denial:

Attention:

1. In case the project application is considered for Pre-IPA, the applicant shall have to enclose No Objection Certificate from State Government / State Horticulture Mission that there is no duplication of funding for the project and the applicant shall also submit self-declaration that he/she is not availing government subsidy / grant / assistance from any other ministry.

4. About the Project, Rationale, Management and Description

3.1.About the Project

1. Name of the Project	
2. Correspondence Address:	
3. Address of Project Site :	
4. Project Activity and Scheme components (Should be as per NHB scheme latest scheme guidelines- please verify):	

No.	Name of the scheme and component	Unit	Tick mark relevant component
5	Development of Commercial Horticulture through Production and Post-Harvest Management of Horticulture Crops		
	1. Open field condition		
	2. Protected cover for specified crops		✓
	3. Integrated PHM		
	a. 3.1.Pack House		
	b. 3.2.Integrated Pack house		
	c. 3.3.Pre-cooling unit		
	d. 3.4. Cold Room (Staging)		
	e. 3.5. Mobile Pre-cooling unit		
	f. 3.6.Ripening Chamber		
	g. 3.7 Primary Processing		
	h. 3.8 Refer Van		
	i. 3.9.Retail outlet (environmentally controlled)		

6. Details of Crop in case of Open field condition / Protected cover

Name of the Crops	Variety / Hybrid/ Cultivar	Area (acres)	No. of plants	Source of Planting Material

7. Products, product Mix, by products and Services of the Project
8. Objectives of the Project
9. Expected Outcomes of the Project
10. Socio-economic benefit to the region /District / State

3.2.Rationale / Justification for the project

3.2.1. Rationale

3.2.2.Details of similar projects / crop in the neighbourhood and the District -Area, Production, Productivity briefly. Provide more details in Market viability chapter.

3.2.3.Raw Materials: How quantity and quality of inputs/ raw materials is assured.

3.3.Project Site/ Land details:

3.3.1.Proposed Project Area:

	Activity	Area proposed
1	Cultivation –	
	Open Cultivation (Ha) / Protected Cultivation (Sq.Mt)	
2	PHM	
3	Plant and Machinery	
4	Any other activity	

3.3.2.Land details- RoR/ Ownership / Registration of lease/ map etc.

A	Name of Owner of land proposed for the project as per Land Revenue Records				
	Whether title of the land is clear in the name of applicant and is free from any litigation				
	How Title is derived	Ancestral			
		Purchased (with details of date)			
	Encumbrances if any				
B	Name of the Owner in case of joint ownership		Survey/ Gat /khasra No etc.	Area in Sq.mt / Ha	Share
	Whether land boundaries are demarcated for the applicant clearly.		Yes/No		
	Whether land is in possession of the Applicant				
C	In case of Partnership				
	1. Whether land is owned by Partnership firm or jointly by its partners		Yes/No		
	2. NOC: If land is owned by one of the partner, an undertaking by land owner is required stating that he/she will not withdraw, sale or transfer his/her land during currency period of the project				
	Whether land is in possession of the Applicant				
D	In case of Lease				
	1. In case the land is that of leased, Registration details of the said leased land in the office of Sub-Registrar				
	2. No.of Years of lease				
	3. Whether lease is entered in RoR		Yes/No		
	Whether land is in possession of the Applicant				
E	Whether land is mortgaged? If yes provide details of mortgagor and mortgagee				

3.4.Location of the Project- Identification (Longitude, Latitude, Altitude, Village, GP, Block, District, State), Area, Number of growers.

1.	Location Address	
2.	a. Survey/Khasra/ Dag/ Other No	
3.	b. Habitation/ Village	
4.	c. Gram Panchayat / Urban body	
5.	d. Block / Urban body	
6.	e. Sub-Division	
7.	f. District	
8.	g. State /UT	
9.	Location Longitude, Latitude & Altitude	
10.	Total Area of land owned (ha)	
11.	Total Area proposed for project (ha)	

Google map with coordinates:

3.5.Current usage of land of proposed Project Area

Proposed Project			**Current usage**		
Survey / Dag etc.No	Nature of land Dry/ Irrigated/ Waste land	Area (ha)	Activity / Crop	Area (ha)	Mortgage Yes/No If Yes with whom

3.6.Current infrastructure and assets possessed by the Applicant:

Category	Asset Name	Year of Purchase	Make	Capacity	Cost
Fixed Assets	Tube well				
	Dug Well				
	Drip irrigation				
	Electric Motors				
	Tractor				
	Tiller				
	Transport vans				
	Vermi compost shed				
	Stores				
	Pack house				
	Labour room				
	Water harvesting pond				
	Installation/digging				
	Pipeline				
	Others				
Operating Assets	Planting Material				
	Support system				
	Tools and implements				

3.7.Lay out plan of the project/ Map of Farm / production/ Operations unit / project land showing project details and land boundary details

3.8.Conversion of Land Use (CLU) if applicable

Whether Land in possession of the applicant is with/ without approval for industrial use/Whether CLU permission for the project has been received from competent authority: If Yes- Please provide details of the authority approved with full designation, address contact numbers and email id, approval No. and date

3.9.Whether project site is part of production belt / cluster / hub ? If yes, provide details of working relations with other farmers

3.10.Rationale for the choosing the said Location for implementation of the project / Location advantages and disadvantages

Connectivity:

Road connectivity- Distance from	National High way	
	State Highway	
	Fright Corridor	
	Golden Quadrilateral	
Rail connectivity		
Air connectivity		
Water ways		
Market connectivity		

Supply side suitability: Raw material Catchment area

Whether project site is part of production belt / cluster / hub ? If yes, provide details of working relations with other farmers

Road connectivity- Distance from (Range)	National High way	
	State Highway	
	Fright Corridor	
	Golden Quadrilateral	
Rail connectivity		
Air connectivity		
Water ways		
Market connectivity		

Map of Catchment Area:

Demand side suitability:

Proximity and connectivity of project site to major consumption centres /Mandies

Demand centres	Names	Distance from the proposed site
Agriculture Primary Market Committees - APMCs / Mandies		
Tier-1, 2 and 3 cities		

Map of consumption Centres

Other Merits/ Advantages:

3.11.Compliance of project site for food safety

The information on soil condition and site on water logging, industrial waste and effluents.

Run off and contaminated water is not allowed to enter fields.

3.12.Components / Activities of the Project with justification (Please refer NHB scheme guidelines)

No.	Name of the scheme and component	Justification
1	Development of Commercial Horticulture through Production and Post-Harvest Management of Horticulture Crops	
	1. Open field for specified crops	
	2. Protected cultivation for specified crops	
	3. Integrated PHM	
	3.1.Integrated Pack house	
	3.2.Pack House	
	3.3.Pre-cooling unit	
	3.4. Cold Room (Staging)	
	3.5. Mobile Pre-cooling unit	
	3.6.Ripening Chamber	
	3.7 Primary Processing	
	3.8. Refer Van	
	3.8.Retail outlet (environmentally controlled)	

Component wise cost of the Project and NHB Norms

Scheme Component	Items	Sub- items	Capacity/ Area/ spacing/ size Etc.	Units/ Numbers	Likely / unit cost	NHB Norm
Open field Cultivation	Cultivation Expenses	Planting material				
		Input cost (Labour, Manure & Fertilisers, pesticides etc.)				
		Others				
	Irrigation	Tube well/ bore well/ Open well (Nos.)				
		Cost of Pipeline from source of irrigation to production unit (Length, Size & Material)				
		Water harvesting structure / Water tank min. 300 microns				
		Non lined ponds/tanks				
		Others				
	Drip / Sprinkler					
	Civil Infrastructure	Functional pack house				
		Store & Pump house (Area in sq.ft with size)				
		Labour room & go down (Area in Sq.ft with size)				
		Others				
	Farm Mechanisation (AC)	Tractor upto 20 BHP				
		Power Tiller	HP			
		Equipment's-driven by Tractor/ Power Tiller				
		Mulch laying machine				
		Self-propelled hort. Machinery				

		Other tools and equipment's as per Sub Mission on Agriculture Mechanisation (SMAM)				
		Others				
	Land Development	Soil levelling / Digging/Fencing etc.				
		Others if any				
	Land if newly purchased but not before one year from date of sanction of Term loan (indicate year)					
	Support system for Grapes					
	Vermi Compost Unit					
	• 1. Permanent Structure					
	• 2, HDPE Vermibed (12ft X 4ft X2 ft)					
	Certification of Good Agricultural Practices (GAP) including infrastructure (AC)					
	Plastic Mulching					
	Others					
	Grand Total					
Scheme			Capacity/ Area/ Spacing/ size etc.	Units/ Number	Likely /Unit cost	NHB Norm
Protected Cultivation	Protected Structure with Micro Irrigation • Green house o Fan & Pad/ o Naturally ventilated- Tubular/wooden/Bamboo • Shade net- Tubular/ wooden/ Bamboo • Plastic tunnel/ • Walk in Tunnel/ • Anti-bird/Anti-hail net etc.)					
	Bed preparation in case of orchids and Rose subject to conditions					
	Planting Material & Cultivation cost					
	Irrigation	Tube well/ bore well/ Open well (Nos.)				
		Cost of Pipeline from source of irrigation to				

		production unit (Length, Size & Material)				
		Water harvesting pond/ Water tank				
		Others				
	Infrastructure	Store & Pump house (Area in sq.ft with size)				
		Labour room & go down (Area in Sq.ft with size)				
		Others				
	Farm Mechanisation (AC)	Tools and equipment's as per SMAM				
	Land Development- Soil levelling / Digging/Fencing etc.					
	Land if newly purchased but not before one year from date of sanction of Term loan (indicate year)					
	Vermi Compost Unit					
	• 1. Permanent Structure					
	• 2, HDPE Vermibed (12ft X 4ft X2 ft)					
	Certification of Good Agricultural Practices (GAP) including infrastructure (AC)					
	Plastic Mulching (AC)					
	Others					
	Grand Total					
Scheme			Capacity/ Area/ Spacing etc.	Units/ Number	Likely /Unit cost	NHB Norm
Integrated PHM	1. Integrated PHM					
	3.1.Pack House					
	3.2.Integrated Pack house					
	3.3.Pre-cooling unit					
	3.4.Cold Room (Staging)					
	3.5.Mobile Pre-cooling unit					
	3.6.Ripening Chamber					
	3.7 Primary Processing					
	3.8.Retail outlet (environmentally controlled)					
		Others				

Note: NHB Norm: means Over all ceiling in project mode with add on component as per NHB Scheme guidelines. (Appendix 1-A)

AC: Add on component: Over and above the cost ceiling.

3.13.Operations Planning

1.	Name of Farm / Project Manager (working directly under the applicant / CEO) if any.-optional	
2.	Name of agency providing technical know-how and turn key for cultivation- and contact person Name and contact numbers	
3.	Operations:	
	1. Land preparation	Own / custom hiring
	2. Procuring planting material/ seeds	Own / outsourcing
	3. Orchard planning, layout	Own / outsourcing
	4. Water and nutrient management	Own / outsourcing
	5. Pruning & Training	Own / outsourcing
	6. Pollinators & Pollinsers	Own / outsourcing
	7. Plant growth regulators	Own / outsourcing
	8. Integrated Pest & Disease management	Own / outsourcing
	9. Physiological disorders	Own / outsourcing
	10. Farm Mechanisation	Own / outsourcing
	11. Harvesting/ Fruit/Flower care management	Own / outsourcing
	12. Post-Harvest Management	Own / outsourcing
	a. Pre-cooling	Own / outsourcing
	b. Curing	Own / outsourcing
	c. Cleaning / Washing	Own / outsourcing
	d. Sorting and Grading	Own / outsourcing
	e. Packing and labelling	Own / outsourcing
	f. Ripening	Own / outsourcing
	g. Transport	Own / outsourcing
	h. Storage- Low cost / Cold Room/ CA	Own / outsourcing
	i. Refer van	Own / outsourcing
	j. Retail outlet	Own / outsourcing
	k. Cold chain	Own / outsourcing
	13. Marketing	Own / outsourcing
	14. Processing	Own / outsourcing

3.14. Profile of Agency executing erection of Protected Structure/ Post Harvest Infrastructure (based on project / applicability etc.

1.	Name of agency providing technical know-how and turn key basis with full address of its Hq	
2.	Agency local Address	
3.	CIN / Company Incorporation No.	
4.	GST No.	
5.	CEO of the Agency	
6.	Contact person Name and contact numbers	
7.	Technical Manpower available	(Desirable)
8.	Number of years of experience	(Desirable)
9.	No of plants set up till date during the last 5 years in the State	(Desirable)
10.	Turnover of the Agency	(Desirable)
11.	Whether firm has been blacklisted ever by any government or corporate firm	(Desirable)

3.15.Month wise operational chart / Implementation schedule: Commencement to completion:

Project Implementation period in case of approval: Months.

Proposed/ Tentative dates of	Bench mark / Activity	Approximate date
Project Commencement	Land development or Land/ Site Preparation	
First Commercial Crop / plantation / operations if any / Plant & Machinery etc.		
Project Completion		

Activity	Units	Months					
		JF	MA	MJ	JA	SO	ND
1. Land development							
2. Erection of Protected structure in case of Protected cultivation							
3. Land preparation							
4. Procuring planting material/ seeds							
5. Orchard planning and layout							
6. Water and nutrient management							
7. Pruning & Training							
8. Pollinators & Pollinisers							
9. Plant growth regulators							
10. Integrated Pest & Disease management							
11. Physiological disorders							
12. Harvesting/ Fruit care management							
13. Post-Harvest Management							
a) Cleaning / Washing							
b) Sorting and Grading							
c) Packing and labelling							
d) Transport							
14. Marketing							
15. Value/ addition Processing							

Note: The table can be extended as per need. JF: January/ February; MA: March/April and similarly other abbreviations.

3.16.Number of days of Operation / Crop etc:

3.17.Backward and Forward linkages

1. Backward linkages -with growers, input suppliers etc.

Operations	Agency / Agents / providers (specify the proposed location)	Distance	Remarks
Seed/ Planting Material			
Manure			
Fertilizers			
Bio fertilizers			
Bio pesticides			
Fertilizers			
Pesticides / Insecticide			
others			

2. Forward linkages- for Domestic and Export Market

Operations	Agency / Agents / Service providers (specify the proposed location)	Distance	Remarks
Storage Unit			
Processing Unit			
Local Market			
Terminal market			
Farm Market			

3. Briefly explain as to how the produce will be consolidated (backward linkages) and marketed/exported (forward linkages)

4. How transportation of raw material and produce is planned?

3.18.Manpower (Skilled Labour, Expertise etc.), Required, Already available, Gaps and the management in an Year.

3.18.1.Managerial and Technical

		Managerial				Technical				Gap	
		Requirement		Availability		Requirement		Availability		S	US
		Number	No.of Days	Number	No.of Days	N	D	N	D		
	a)										
	b)										
	c)										

3.18.2.Skilled and Unskilled Labour

		Skilled Labour				Unskilled labour				Gap	
		Requirement		Availability		Requirement		Availability		S	US
		Number	No.of Days	Number	No.of Days	N	D	N	D		
	Operations/ activity										
	d) Administration										
	e) Manager										
	f) Finance & Accounts										
	g) Typing / IT operations										
	h) Watch man										
	Crop husbandry										
	a)										
	b)										
	c)										
	d)										
	e)										
	f)										
	g)										
	h)										

3.19.Employment Generation per annum

No.of man days / Annum	
Permanent man power -Permanent (on rolls)	
Casual / Temporary	

3.20.Infrastructure and connectivity (Power, Fuel, Water, Plant and Machinery, Effluents treatment etc.)- Required, Already available, Gaps and the management.

Utility	Requirement	Remarks
Power	Likely requirement per month for the purposes of ……	
	Source of Power	
	Whether renewable alternate energy to power is under consideration	
	Access to Power is assured or not	
	Alternative Source of Power in case of breakdowns	
Water	Source – Ground Water /Surface Water	
	Existing or New source	
Plant & Machinery		
Fuel	Access to fuel to power- Generators- Yes/No	
	Nearest fuel depot	
Effluent treatment	Facility and method adopted for effluent treatment.	
Road connectivity- Distance from	National High way	
	State Highway	
	Fright Corridor	
	Golden Quadrilateral	
Rail connectivity		
Air connectivity		
Market connectivity		
Vermi compost	If available Numbers and Capacity. Types: 1. Permanent Structure and 2, HDPE Vermi bed (12ft X 4ft X2 ft)	
Animal Husbandry	Details of Animals Capacity / Income	
Environmental issues of the project if any		
Fencing		
Any other		

3.21.SWOT Analysis

1	Strengths	
2	Weaknesses	
3	Opportunities	
4	Threats	

Attention of the applicant:

1. Applicant has to intimate the Board before effecting change of project land, crop, area, bank etc in the proposal before claim of subsidy. (page 121 of guidelines point 10(vi). Thus Any change in crop or project site without prior approval of NHB shall make the component or project, as the case may be, ineligible for getting subsidy.
2. Even the change in FI / Banker should be done with prior approval of NHB.

(Signature of the Applicant)
with date and time.

4	**NHB Scheme under which the project is proposed with rationale / justification.**	

1. Scheme.1: Copy paste scheme guidelines

2. Cost Norms and pattern of assistance: Copy paste scheme guidelines

3. Rationale for justification for taking up the proposed project under the scheme No.1 and its components.

5.Project details

5.1	**Agro-climatic suitability**	

5.1.1.Origin, History, and Distribution

1. Origin of the crop and its introduction into India:
   Bitter gourd or bitter cucumber or balsam pear or La-Kwa, or Chinese bitter melon, (*Momordica charantia* L. *syn. Momordica muricata* Terra.) is an important tropical monoecious crop originated in China or India (Indo-Burma center of origin).The regions of eastern India and southern China are suggested possible centers of domestication. It is widely grown in India, Indonesia, Malaysia, China and tropical Africa.

2. Distribution of crop across the country

State	Growing Belts

Andhra Pradesh: Ananthapur, Guntur, Kadapa, Karimnagar, Krishna, Mahbubnagar, Medak, Nalgonda, Nizamabad, Prakasam, Rangareddy, Vizianagaram, Warangal, East Godavari.
Bihar: Patna, Nalanda, Bhojpur, Buxar, Gaya, East & West Champaran, Muzaffarpur, Vaishali, Bhagalpur, Darbhanga, Madhubani, Begusarai, Purnea, Araria, Katihar, Saharsa, Madhepura. Supaul
• **Chhattisgarh:** Raipur, Baloda Bazar, Dhamtari, Durg, Balod, Bemetara, Rajnandgaon, Kabirdham, Kanker, Bilaspur, Janjgir-Champa, Korba, Raigarh, Jashpur, Surguja, Surajpur, Balrampur, Koriya.
• **Haryana:** Kaithal, Karnal, Panipat, Sonipat, Rohtak, Jhajjar, Faridabad, Narnaul, Gurgaon, Bhiwani, Fatehabad, Sirsa, Jind, Mewat, Palwal, Ambala, Yamunanagar, Kurukshetra.
• **Jharkhand:** Ranchi (Chanho).
• **Kerala:** Kaduthuruthy (Njeezhoor), Erattupetta (Melukavu, Thidanad, Poonjar Thekkekkara, Thalappalam), Kanjirappally (Koottickal, Mundakkayam, Koruthde, Manimala, Erumely), Vazhoor (Vellavoor).
• **Karnataka:** Haveri, Koppal, Bijapur, Mandya, Tumkur, Hassan.
• **Madhya Pradesh:** Shajapur, Jabalpur, Chhindwara, Satna, Vidisha, Ratlam, Indore, Khargone, Dhar, Jhabua, Ujjain, Sagar, Raisen, Bhopal.
• **Maharashtra:** Nanded, Pune, Nasik, Beed, Parbhani, Kolhapur, Gondia.
• **Mizoram:** Aizawl, Khawzawl, Lunglei, Tuidam.
• **Odisha:** Khordha (Pitapalli, Bolagarh), Jajpur (Rasulpur), Cuttack (Niali), Koraput (Koraput, Dasbantpur, Laxmipur).
• **Tamil Nadu:** Dindigul, Trippur, Coimbatore, Salem, Kancheepuram, Kanyakumari.
• **Uttar Pradesh:** Faizabad, Ambedkar Nagar, Kushi Nagar, Saharanpur, Agra, Ghaziabad, Moradabad, Gonda, Bahraich, Mainpuri.

5.1.2.Agro-climatic / Horticultural zones including Rainfall, temperatures at critical stages and suitability of the project *(Not applicable to standalone PHM projects)*

1.	**Parameter**	**Recommended@**	**Project**	**Remarks /**

			location parameters#	**deviations**
2.	Climate	It can be successfully grown in the temperature range of 25-35°C with maximum limit of 42° C and minimum 20° C. It requires more heat than the other gourds to produce maximum yield, but is also more resistant to low temperatures.		
3.	Altitude	-		
4.	Climacteric / Non-Climacteric	Non-Climacteric		
5.	Thermosensitive ness of crop	Yes		
6.	Photosensitive	Day neutral		
7.	Temperature range			
8.	1. Mean monthly / Average temperature	24-27 ^{0}C		
	2. Av.Max.temperature	**38** ^{0}C		
	3. Av.night temperature	**18** ^{0}C		
	4. During Crop duration	28-35 ^{0}C		
	5. Flowering	**25-30** ^{0}C		
	6. Fruiting	**25-35** ^{0}C		
	7. Maturity	**25-35** ^{0}C		
	8. Fruit quality	25-35 ^{0}C		
	9. Season	**18-38** ^{0}C		
9.	Water			
10	1. Land preparation			
	2. Flowering	-Through E_{pan} calculation. -Water requirement (WR)= E_{pan} x Kc mm/day. -Volume of water required for a given section (litre/day) = WR x area of section		
	3. Fruiting	**-do-**		
	4. Maturity	**-do-**		
	5. Season	**-do-**		
11	Humidity			
	1. Flowering	**60-70%**		
	2. Fruiting	**70-75%**		
	3. Maturity	**70-75%**		
	4. Season	**60-75%**		

12	Winds during crop season	**NA**		
13	1. Wind velocity			
14	Shade loving?	**No**		

@ Note: Organisation / Institution (ICAR/CAU/SAU/SHU/ other) making recommendation and its source should be specified.

#: Provide source (could be IMD/Agric.Univ/State Govt.) and weblink if possible.

Risk management/ Deviation Management if any:

Conclusion: Whether project crop is recommended for the project location	**Yes/No**

5.1.3.Soil Type and health -requirements and that of project suitability

(Not applicable to standalone PHM projects)

	As recommended by ICAR /CAU/SAU/SHU	Project location data as per latest Soil health test	Deviation if any and Management	Date on which soil health is tested and the name of the Institute
Soil type	Light to medium, well drained			
Texture	Sandy loam			
pH	6.0-6.7			
Organic carbon	>2.0%			
Electrical conductivity	< 2dSm			
Chlorine	-			
Sodium	-			
Potassium	50 kg N			
Nitrogen	25-30 kg P_2O_5			
Phosphorus	20-30 kg K_2O			

@ Note: Organisation / Institution (ICAR/CAU/SAU/SHU/ other) making recommendation and its source should be specified.

Source: Bhardwaj DR *et al*. (2018.). Karela ki vaigyanik kheti. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.

#: Provide details of Soil Test Laboratory (should be that of Agriculture Dept/ Agric.Univ/ Central or State Government) where Soil is tested with contact details of Head of Laboratory/ Analyst with telephone and mobile details and weblink if possible. A self-attested copy of the laboratory results should be submitted in case project is qualified for processing for subsidy claim.

Whether project location is a problematic soil- Alkalinity/Salinity/Others: if Yes.

1. Causes
2. Reclamation / Management/ Amendments proposed:

Conclusion: Whether project location soil is suitable for the crop / activity.	

5.1.4.Water/ Irrigation water Quality -requirements and that of project suitability
(Not applicable to standalone PHM projects)

	As recommended by ICAR /CAU/SAU/SHU	Project location data as per latest Water Analysis test#
pH	6.5-7.5	
EC	<0.75 dSm	
Total salt concentration,	1500-3000 micro mhos/cm	
Sodium Absorption Ratio (SAR)	<3.0 ppm	
Bi-Carbonate	<40 ppm	
Boron concentration	Not more than 1.0 ppm	
Heavy metals (ppm)*	Al, Fe & Pb (<5), As & Cr (<0.1), Cd & Mo (<0.01), F(<1)	
Pesticide residue	Below detectable limit (BDL) (<0.001-0.05 µg/l)	

@ Note: Organisation / Institution (ICAR/CAU/SAU/SHU/ other) making recommendation and its source should be specified.

* ftp://ftp.ecn.purdue.edu/vmerwade/class/GDT/WTC.../IWQ_standards_for_India.doc

#: Provide details of Laboratory (should be that of Agriculture Dept/ Agric.Univ/ Central or State Government) where water is tested with contact details of Head of Laboratory/ Analyst with telephone and mobile details. A self-attested copy of the laboratory results should be submitted in case project is qualified for processing for subsidy claim.

Conclusion: Whether project location water source is suitable for the crop / activity.	Yes / No

5.2.Project- Market viability of the Project

(To be facilitated and certified by Horticulture Expert)

5.2.1.Commercial (and nutritive -where ever applicable) importance / significance, composition and uses.

Bitter gourd has rich nutritional and medicinal value. The immature fruit is valued for its bitter flavor. It is a rich source of phosphorous and iron. It also contains minerals like calcium, phosphorous, iron, copper and potassium. Young shoots and leaves are an excellent source of Vitamin A, and a fair source of protein, thiamin, calcium and phosphorus (Vinning, 1995). It has twice the amount of beta-carotene than in broccoli and twice the calcium content of spinach. Bitter gourds have been in use in indigenous medical systems in various countries in Asia and Africa. The bitter gourd has excellent medicinal virtues as many native herbolarios practice. It helps in purifying blood, enhances digestion, and stimulates the liver, activates spleen and liver. It is a purgative, appetizer, digestive, anti-inflammatory and has healing capacity. It has antido¬tal, antipyretic tonic, appetizing, stomachic, antibilious and laxative properties.

Table 1**.** Nutrition Value (per 100 g edible portion of fruit).

Water 83-92 g, Protein 1.5-2 g, Fat 0.2-1 g, Carbohydrate 4-10.5 g, Fiber 0.8-1.7 g, Ca 20-23 mg, P 38-70 mg, Fe 1.8-2 mg, Vitamin C 88-96 mg, Energy value 105-250 kJ/100 g, Antioxidant of fruit (by ABTSM) water 19 μm/g (Very Low), Antioxidant of shoot (by ABTSM) water 73 μm/g (Medium).

5.2.2.Targetted market (s) : Domestic or International. In case of International market, the applicant have to refer APEDA export requirements and should specify compliance appropriately with in the document. In case of domestic market specify the intended market briefly while more details be provided in Marketing chapter.

1. Quality grades/ specifications/ kinds of products and their targeted Domestic/ International market.
2. Existing / Proposed Market linkages:
3. MOUs/ Contract documents / undertakings/ LoA if any
4. Target consumption centres/ key domestic markets
5. Export targets/ Plans if any
6. In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.

5.2.3.Statistics: India and State.

India: Area, Production and Productivity in the area, State and India for the last 5-10 years.

The bitter gourd is a common vegetable cultivated extensively all over India. Area and production wise, the important bitter gourd states of India are Tamil Nadu, Uttar Pradesh, Maharashtra, Kerala, Andhra Pradesh and Orissa.

1.National picture

Year	Area in ha	Production MT	Productivity T/ha	Global Productivity data T/Ha (2014)		
2014-15	76	770	10.13	Highest	Average	
2015-16	93	1046	11.25			
2016-17	95	1030	10.84			
2017-18	93	1063	11.43			

http://agricoop.nic.in/statistics/publication-reports

2.State wise picture- Top 10 producing states (2015-16)

State	Area in ha	Production MT	Productivity T/ha	
Chattisgarh		127.31		12.17
Telangana		118.62		11.34
Andhra Pradesh		109.28		10.45
Odisha		106.81		10.21
Madhya Pradesh		91.54		8.75
Uttar Pradesh		76.58		7.32
Bihar		67.30		6.44
Tamil Nadu		53.48		5.11
Haryana		53.39		5.11
Assam		49.14		4.70

Source: http://agricoop.nic.in/statistics/publication-reports

3.Project State Picture (Mandatory)

Year	Area in ha	Production MT	States' contribution to Nation	Productivity T/ha	Gap in Productivity (T/Ha)		
					State Av.	National Av	Global Highest

Multiple sources: http://agricoop.nic.in/statistics/publication-reports / State Horticulture Dept./ District Horticulture Officer.

4.Project State- district wise performance in the said crop producing districts in Last Year (Mandatory)

Area	Production	Productivity

District	Area (ha)	% of State Area	District	Production (MT)	% of State Production	District	Productivity (T/ha)	Ranking

Multiple sources: http://agricoop.nic.in/statistics/publication-reports / State Horticulture Dept./ District Horticulture Officer.

5.Project crop in the state: Time trend of Area, Production and Productivity (Mandatory)

District	Item	Current Year	CY-2	CY-3	CY-4
District.1	Area				
	Production				
	Productivity				
District.2					

Multiple sources: http://agricoop.nic.in/statistics/publication-reports / State Horticulture Dept./ District Horticulture Officer.

6.Share of project Crop- in terms of Area and Production in overall fruits/vegetables.

Crop	Area		Production		
	Ha	%	MT	%	
Total		100		100	

Multiple sources: http://agricoop.nic.in/statistics/publication-reports / State Horticulture Dept./ District Horticulture Officer.

7.Availability of Storage facilities in the project area / District / State Source: (Desirable Data)

Year	Commodity	Low cost storage structures			Cold storage			CA Storage		
		No.	Capacity	Capacity utilisation	No.	Capacity	Capacity utilisation	No.	Capacity	Capacity utilisation

Source: Multiple sources: https://nccd.gov.in/# and District Horticulture Office.

Gap Analysis in Project Area:

	Commodity / produce	Storage required in the area	Storage available in the area	Gap	Remarks

6.2.4. Clusters/ Zones

5.2.4.1.Crop clusters in the State (Mandatory)

Name of Crop	District	No.of villages	No.of farmers	Total Area
1				
2				
3				
4				

Source: State / District Horticulture Office/ APEDA / MoFPI

5.2.4.2.Crop Agricultural Economic Zones in the State / UT, if any (Desirable)

Crop AEZ	District	No.of villages	No.of farmers	Total Area
1				
2				
3				
4				

5.2.5. Demand for the commodity: (based on the available data- minimum for the project area, district and the state)

Demand -Supply gap for the commodity

Unit	Demand	No. of growers		Supply / production	Gap	Remarks
		Nos.	Area			
Project area*						
District where project is located						
State						
Country						
Globally						

Source: Multiple sources.

http://agricoop.nic.in/

APMC/ Agriculture Marketing Board/ District Horticulture Officer

*: Project area could be a block / District based on the crop / commodity/ activity and its spread area and numbers.

Note: Applicant may take the help of District Horticulture Officer.

5.2.5.A.Projections of production, productivity, targets for domestic and export market (Desirable)

Year	Production	Productivity	Local Market	Value in Rs.	Terminal market	Value in Rs.	Export Market	Value in Rs.

5.2.6.Global producers- Country, Area, Production, Productivity and global market share for the last 5-10 years

Major producing country	Area	Production	Productivity	% share in global market

Source:

http://agricoop.nic.in/statistics/publication-reports
http://agriexchange.apeda.gov.in/;

5.2.7. International trade market and potential:

(collect from APEDA Agri-exchange website at http://agriexchange.apeda.gov.in/; including product profile, statistics and market intelligence sites esp. International trade and Global Analytical report in brief to the extent of relevance; may also refer DGCIS site http://www.dgciskol.gov.in/ for more information)

International trade and Global market pertaining to bitter gourd supply (fresh and processed) is increasing very fast in China, UAE, UAS, Germany, UUSR and other countries. Frsh bitter gourds are exported to countries like UAE, Qatar, Singapore, Hong Kong, Baharain and Canada. Pickled bitter melon is imported from India, Malaysia and the Philippines. As these are low cost producers, it is unlikely that Australia will be able to compete on this market.

5.2.8.Seasonality matrix of the fruit /vegetables/ flowers (Desirable Data):

Seasonality matrix of the crop with reference to other fruits / vegetables/flowers

Fruits/ vegetable/ flower	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bitter gourd												

Lean Season

Peak Season

Demand and Supply issues specific to project area:

5.2.9 Price variation of Commodities at State / UT Capital or at a Major Fruit & Vegetables/ Flower Market

A.At local Market

	Local Market: 1 Unit=Rs. Per Qtl/MT/Kg											
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Source: Concerned APMC / Marketing Board website or http://agmarknet.gov.in/
If no reliable source is available, the above data may be collected from District Marketing / Horticulture Officer

B.At nearest / Major Terminal Market

	Major Terminal Market: 2 Unit=Rs. Per Qtl/MT/Kg											
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Source: Concerned APMC / Marketing Board website or http://agmarknet.gov.in/
If no reliable source is available, the above data may be collected from District Marketing / Horticulture Officer

C.Projected prices of project produce (if Possible)

	Market: …… Unit=Rs. Per Qtl/MT/Kg											
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Source: Could be applicants' own assumption / horticulture expert etc.by giving justification

5.2.10.Balance sheet of commodity in the State / District (Desirable Data/ Voluntary)

	Year:								Qty: 000Tons			
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Stored/ Carry in												
Fresh Production/ Arrivals												
Imports												
Availability												
In LT Storage												
Consumption												
Exports												
Post Production losses												
Total Usage												
Carry out												

Source:

Note:

5.2.11.Whether transportation infrastructure is available.

1. Mode of transportation / arrangement:
2. Whether cold chain facility available locally if so details of service providers and contact person name.

5.2.12.Value Addition scope/ potential

5.2.13.Central and State Government policies to promote the commodity:
(towards its promotion, area expansion and organised marketing, processing and export).

5.2.14.Value chain in the commodity

5.2.15.Proposed Business Strategy by the Applicant for Marketing and Market viability

5.3.Financial Viability of the Project
(To be prepared and certified by Project Finance Expert on each page)

5.3.1: Due Deligence Status

	Date of Due Deligience		Remarks
1	Examination of CIBIL report	Yes/No	
2	Credit rating / scoring is done	Yes/No	
3	Whether name of promoters/company appearing in the list of- a) RBI defaulter list b) RBI willfull defaulter list c) ECGC SA list	 Yes/No Yes/No Yes/No	
4	a)Verfication of CERSAI (Central Registry of Securitisation Asset Reconstruction and Security Interest)	Yes/No	
	b) In case of company whether financial data verfied with ROC .	Yes/No	

5.3.2.Project Cost (Rs in Lakhs) – (subitems are to be decided based on need)

Scheme Component	Items	Sub- items	Capacity/ Area/ spacing Etc.	Units/ Numbers	unit cost	Cost	Cost as per NHB norms
Open field Cultivation	Cultivation Expenses	Planting material					
		Input cost (Labour, Manure & Fertilisers, pesticides etc.)					
		Others					
	Irrigation	Tube well/ bore well/ Open well (Nos.)					
		Cost of Pipeline (Length, Size & Material)					
		Water harvesting structure / Water tank min. 300 microns					
		Non lined ponds/tanks					
		Others					
	Drip / Sprinkler						
	Civil Infrastructure	Functional pack house					
		Store & Pump house (Area in sq.ft with size)					
		Labour room & go					

		down (Area in Sq.ft with size)					
		Others					
	Farm Mechanisation (AC)	Tractor upto 20 BHP					
		Power Tiller	HP				
		Equipments- driven by Tractor/ Power Tiller					
		Mulch laying machine					
		Self-propelled hort. Machinery					
		Other tools and equipment's as per Sub Mission on Agriculture Mechanisation (SMAM)					
		Others					
	Land Development	Soil levelling / Digging/Fencing etc.					
		Others if any					
	Land if newly purchased but not before one year from date of sanction of loan (indicate year)						
	Support system for Grapes						
	Vermi Compost Unit						
	Certification of Good Agri Practices Good Agricultural Practices (GAP) including infrastructure (AC)						
	Plastic Mulching						
	Others						
	Grand Total						
Scheme			Capacity/ Area/ Spacing etc.	Units/ Number	Likely /Unit cost	NHB Norm	
Protected Cultivation	Protected Structure with Micro Irrigation • Green house o Fan & Pad/ o Naturally ventilated- Tubular/wooden/Bamboo • Shade net- Tubular/ wooden/ Bamboo • Plastic tunnel/ • Walk in Tunnel/						

	• Anti-bird/Anti-hail net etc.)						
	Bed preparation in case of orchids and Rose subject to conditions						
	Planting Material & Cultivation						
	Irrigation	Tube well/ bore well/ Open well (Nos.)					
		Cost of Pipeline (Length, Size & Material)					
		Water harvesting / Water tank					
		Others					
	Infrastructure	Store & Pump house (Area in sq.ft with size)					
		Labour room & go down (Area in Sq.ft with size)					
		Others					
	Farm Mechanisation (AC)	Tools and equipment's as per SMAM					
	Land Development- Soil levelling / Digging/Fencing etc.						
	Land if newly purchased but not before one year from date of sanction of loan (indicate year)						
	Vermi Compost Unit						
	Certification of Good Agri Practices Good Agricultural Practices (GAP) including infrastructure (AC)						
	Plastic Mulching (AC)						
	Others						
	Grand Total						
Scheme			Capacity/ Area/ Spacing etc.	Units/ Number	Likely /Unit cost	NHB Norm	
Integrated PHM	2. Integrated PHM						
	3.1.Pack House						
	3.2.Integrated Pack house						
	3.3.Pre-cooling unit						
	3.4.Cold Room (Staging)						
	3.5.Mobile Pre-cooling unit						
	3.6.Ripening Chamber						
	3.7 Primary Processing						
	3.8.Retail outlet (environmentally						

	controlled)					
	Others					

Summary of Project Cost

		Project Cost	Max.possible NHB support (self-appraisal)
2. Open field condition	With add on components		
	Without add on components		
3. Protected Cover of NHB specified crops	With add on components		
	Without add on components		
4. Integrated PHM			
3.1.Integrated Pack House			
3.2.Pack house			
3.3.Pre-cooling unit			
3.4. Cold Room (Staging)			
3.5. Mobile Pre-cooling unit			
3.6.Ripening Chamber			
3.7 Primary Processing			
3.8.Refer Van			
3.9 Retail outlet			
Grand Total			

5.3.3 Means of Finance (Rs.in Lakhs)

S.No	Item	Components			
1	Promoters share				
2	Bank/FI Term loan				
3	Un secured loan/VCA				
	Total				

5.3.3. A Information on subsidy available under different schemes:- (For information)

1.	Subsidy from NHB				
2.	Subsidy from State	*			
3.	Subsidy from Centre	*			
4.	Subsidy from other sources	*			
	Total				

5.3.4.Hypothecation Security if any:

5.3.5.About Bank/ FI: Name of the Bank/FI, branch and its code identified for Term loan and Rationale

Name of Bank/ FI	
Bank/FI Branch Address	
Bank/FI Branch contact Number	
IFSC code	

5.3.6.Investiment in Horticulture Sector

5.3.7 Projected / existing operational profitability of the Project : (Rs. In Lakhs)

	Estimated projections							
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Capital								
Reserves								
Intangibles								
Tangible Net Worth								
Net Working Capital								
Current Ratio								
Net Sales								
Op. Profit								
Net Profit Before Tax								
Net Profit After Tax								
TOL/ TNW								
Debt-equity ratio								
Depreciation								
Dividend								
Retained Profit								

Justification for the above (wherever figures are on higher side)

NOTE:- In case of existing business / project, the promoter has to provide the audited data for the last three years apart from estimated and projected data for covering the entire repayment period.

5.3.8 Project Financing:

1) Rate of Interest :

2) Percentage of Term loan against total project cost

3) Internal Rate of Return (IRR):

4) Cost of Production and Profitability (Annexure)

5) Yield and Sales Chart (Annexure)

6) Proposed Balance Sheet: (Annexure)

7) Proposed Cash flow Statement for repayment period (Annexure)

8) Proposed Profit & Loss Account: (Annexure)

9) Proposed Repayment of Term loan and Schedule (Annexure)

10) Break even Analysis (Annexure)

11) NPV (Net Present Value)

12) Economic Rate of Return

13) Depreciation

5.3.9 Sensitivity analysis of the project.

Base Case	2018-19 (First Full Year of Operation)				
Case I	Decrease in capacity utilization by 10%.				
Case II	Decrease in Sales by 10%.				
Case III	Increase in Raw Material Cost by 10%				
	Base Case	Case I	Case II	Case III	
PBIDT					
PBT					
PAT					
Min DSCR					
Max DSCR					
Overall DSCR					

5.3.10 Key Financial Parameters for the proposal:

Sl. No.	Ratio	Benchmark	As calculated by Project Finance Expert				
			1st yr	2nd yr	3rd yr	4th yr	5th Yr
1.	Current Ratio other than export units	1.25:1					
2.	CR-Export units	1.10:1					
3	IRR /BCR						
4	DSCR*	1.50:1					
5	Average DSCR						
6	Debt to Equity Ratio i.e DER	3:1					
7	TOL/TNW	4:1					
8	Promoters Contribution	25% minimum					
9	Break Even Point	Lower the % is better					
10	Security Coverage Ratio	More than 100% of Loan Amount					
11	Repayment period	Up to 7 Years excluding moratorium, but not to exceed an overall tenor of 10 years					

5.3.11 Statement of Assets & liability as on……...

1. Immovable Assets

(Rs. In lakh)

Sl.No	Description	Extent	Location	Face value	Market value
1	Land				
2	Building				
3	Plant & machinery				
4	Commercial plots				

2. Movable Assets

Sl.No	Description	Modle	Face value	Market value
1	Car/Scooter/Truck/Bus/Mobile phone			

3. Bank/FI balances and cash

Sl.No.	Name of the institutions	Date of opening	Face value	Market value/Present value

4. Shares & debentures

Sl No	Name of the Company/Institutions	Date of purchase	Face value	Market value

5. Investment in business & other associates concern

Sl No	Name of the Company/Institutions	Date of Investment	Face value	Market value

Total assets…….....

1. Liabilities

Sl.No.	Nature of the loan	Name of the institution	Date of loan	Face value	Market value/ Present value

Total liabilities…….....

Net of assets & liabilities…….....

Date: Signature of the Promoter/Guarantors/Directors /partner

5.3.12.Risk Analysis & Management

A. Promoters & Management Risks:
B. Project Completion and Operational Risk:
C. Other Risks:

	Risk	**Management**
	Excess production / Glut situation in Market	
	Crop failure	Crop insurance
	Price volatility-low prices	
	Pests and Diseases	
	Natural calamities- fire, cyclone, Floods etc.	

5.3.13.Farm record keeping/ Maintenance proposed

5.4: Land development and Crop husbandry

5.4.1.Land development: (in case of waste/ barren land)

5.4.2. Selection of Quality Planting Material

Recommended and popular Cultivars- varieties/hybrids, their specific characteristics, requirements and yields and list of reputed / accredited Nurseries

1. Recommended and popular cultivars/ varieties/ Hybrids State wise	Name of variety / Hybrids/ cultivar (with potential yield)
a. A.P.	Pusa Hybrid-2 (190-200 q/ha)
b. Bihar	Pusa Do Mousami, Pusa Vishesh, Pusa Hybrid-2, Swarna Yamini
c. Chhattisgarh	Pusa Hybrid-2
d. Delhi	Pusa Do Mousami, Pusa Vishesh, Pusa Hybrid-1 (200 q/ha), Pusa Hybrid-2
e. Gujarat	Pusa Hybrid-2
f. U.P.	Pusa Do Mousami, Pusa Vishesh, Pusa Hybrid-1, Pusa Hybrid-2
g. Uttarakhand	Pant Karela-1 (150 q/ha)
2. Classification of cultivars based on crop maturity	NA
a. Early	
b. Mid	
c. Late	
3. Classification of cultivars / Varieties/ Hybrids based on purpose	
a. Pickling and dehydration	Pusa Vishesh, Pusa Hybrid-1
b. Fresh consumption	Pusa Do Mousami, Pusa Hybrid-2

Cultivar/Hybrid/Variety / Planting material Selected:

Cultivar/Hybrid/Variety / Planting material	Parentage	Area	Medium/ High/ Ultra High density	Requirement Quantity

Method of Propagation / technology

Method recommended by ICAR / CAU/SAU/SHU	Seed propagation: Direct seeding or transplanting of seedlings, which are ready for transplanting within 22-25 days of sowing. Source: Bhardwaj DR *et al*. (2018.). Karela ki vaigyanik kheti. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.
Proposed method under the project	
Do's and Don't's proposed / taken in propagation	
Expert guiding the project	

List of Nurseries having Virus Indexing

List of NHB accredited Nurseries :availability of quality seeds / planting material.

List of reputed / authorised store / Nursery from where quality seeds / planting material is planned to source in the project:

Planting material-source, quality and suitability

1. Proposed cultivar / variety/Hybrid	
2. Criterion / Rationale for Selection	
3. Nursery / Shop from where seeds/ planting material is procured/ purchased	Name of Nursery/ Shop: Proprietor Name Contact Number:
4. Warranty provided if any	
5. Whether variety/ hybrid/ cultivar registered under Section 39 (2) of The Protection of Plant Variety and Farmers Right Act, 2001 (PPVFR Act)	
6. Authority which provides compensation to the farmers in case a registered variety does not perform as per the claim made by the breeders.	Registrar General, PPV & FRA is the designated officer for redressal of Public Grievances and can be addressed to: Registrar General Protection of Plant Varieties and Farmers' Right Authority S-2, A Block, NASC Complex, Opp. Todapur Village New Delhi -110012
7. Applicability of Seed Act and any State Act on nursery/ planting material	
8. Authority which provides compensation to the farmers in case a registered variety does not perform as per the claim made by the breeders under Seed Act / State Nursery Act if any	
9. Parentage if known	
10. Original manufacturer / Source of planting material	
11. Name of Tests with date and lab-conducted to assure pest and disease free ness of seeds/ propagation by the nursery	
12. Whether the planting material is imported. If Yes, whether plant quarantine and disease free certification was done	

5.4.3.	Orchard/ Site planning Lay out and management / Sowing	

5.4.3.1.Planning of orchards / Site establishment and layout systems / Types of orchards-

Or Sowing in case of seeds

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	Two seeds per hill are sown in both sides of the raised beds. The seedbed must be uniform because mostly bitter gourd seed crops are precision planted and uniform emergence and seedling development necessary for optimum performance. 1. **Raised beds/pits** (depth of trench 20-30cm, width of trench40-50cm, pits size-30x30x30 cm.) 2. **Shallow pit method or flat bed method** (pits size-60x60x45 cm, distance-120-150 cm.) 3. **Dip pit method** (Circular pit-60-75 cm, depth100-150 cm, distance120-150 cm.) 4. **Mound method** (Raised mounds-15-20 cm.)
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

Source: Bhardwaj DR *et al*. (2018.). *Karela ki vaigyanik kheti*. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.

5.4.3.2.Land preparation including bed preparation

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	Soils should have a high water holding capacity to encourage uniform vegetative growth. Field preparation starts 3-4 weeks before seed sowing. Well decomposed 10-12 t/ha Farm Yard Manure or compost must be added in the field. In plains, bitter gourd is generally grown on raised beds or pits. According to nature of varieties, trenches are prepared at the distance of 1.5-2.5 m. Generally, depth of trench is kept 20-30 cm with the width of 40-50 cm. On these beds (near to trench) pits of 30 x 30 x 30 cm size are dug and field with well decomposed FYM @ 4-5 kg per pit.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

Source: Bhardwaj DR *et al*. (2018.). *Karela ki vaigyanik kheti*. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.

5.4.3.3. Planting Season / time and density

	Recommended @	Proposed	Remarks in case of deviation
Planting Season / Time	Nursery sowing (15 Feb to 15 March; 15 June to 15 July); Transplanting (after 22-25 days of sowing) or Direct seeding		
Spacing	Row to row: 2.5 m Plant to plant: 1 m		
Seed/ seedling rate/ Density	4000/ ha		
Seed / Planting Material treatment	-Seed treatment with GA_3 @ 25-50 ppm and boron @ 25 ppm overnight prior to sowing for improved germination. -Sow the seeds treated with *Trichoderma viride* 4 g or *Pseudomonas fluorescens* 10 g or Carbendazim 10 g/kg of seeds.		
Depth of sowing	Seeds are sown at depth of 2.5-3.0 cm in pro-trays in mixture of cocopeat:vermiculite:perlite :: 3:1:1 or directly in soil.		
Seedling/ Transplanting age	22-25 days old seedlings.		

@: Specify the organisation / institution recommending. (Mention source of publication with date/Year or weblink with date)

Source: Bhardwaj DR *et al*. (2018*.). Karela ki vaigyanik kheti*. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.

5.4.3.4.Water and Nutrient Management

1.Water requirements, Source and irrigation methods &

a. Critical stages for Irrigation and Water required under Drip Irrigation

Critical Stages	Recommendation	Proposed practice	Remarks
Development of sapling	- Irrigate the basins before dibbling the seeds and thereafter once a week. - Install drip system with main and sub-main pipes and place the inline lateral tubes at an interval of 1.5m. Place the drippers in lateral tubes at an interval of 60 cm and 50 cm spacing with 4LPH and 3.5 LPH capacities respectively.		
Plant development	Water requirement to be calculated based on pan evaporation.		
Flowering	-do-		
Fruit Development, first fruit, green color	-do-		
Fruit maturation, more than 50% red	-do-		
Fruit maturation to harvest	-do-		

b. Method of Irrigation:

Methods	Recommendation	Proposed practice	Remarks
-Through E_{pan} calculation. -Water requirement (WR)= E_{pan} x Kc mm/day. -Volume of water required for a given section (litre/day) = WR x area of section			

c. Water source, demand and availability

Water Source	Water Quality	Water Availability	Last Year consumption	Current Year demand
Wells/ Tube	As per			

well/ Canals/ Tanks	laboratory tests.			

d. Water harvesting measures: Rain water/ roof water harvesting in dug ponds/ underground tanks or catchment areas.

2.Nutrient management—Manure, Bio-/ Chemical fertilizers including micro nutrients:/ Fertigation. Dosage and method and time of application for efficacy, food safety and environment sustainability.

Soil Health Analysis:

Dated		Institute	
Soil Health Parameters	Values	Recommended range	Remarks
Organic carbon		>0.75 %	
Available phosphorus		> 25 kg P/ha	
Available potassium		> 280 kg K/ha	
Zinc		> 0.6	
Iron		> 4.5	
Copper		> 0.2	
Manganese		> 2.0	

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	-Generally well decomposed FYM (15-20 t/ha) is mixed with the soil during ploughing. -The recommended dose of fertilizer to be applied per hectare is 50kg N, 25-30 kg P_2O_5 and 20-30 kg K_2O. - 1/3 N and full dose of P_2O_5 and K_2O to be given at the time of land preparation, while half of remaining N to be given as top dress at the time of sowing while rest at 30-45 days after sowing. - However before applying recommended dose, soil testing should be done and accordingly doses of nutrients may be modified.
	Source: Bhardwaj DR *et al*. (2018.*). Karela ki vaigyanik kheti*. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

Availability of Water and Nutrient management plan: Yes/ No

5.4.3.5.Intercultural operations including Weed management

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	Under intercultural operation 2-3 weeding and one time earthing is essential for proper growth and development of crop.
	Source: Bhardwaj DR *et al*. (2018.*). Karela ki vaigyanik kheti*. Extension Bulletin No. 36/2018. Published by Director, ICAR-IIVR, Varanasi.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.3.6. Plant canopy architecture management/ training and pruning

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	- Bitter gourd being a weak climber needs support for its growth. The plant trailed on the support (bower) continues to give yield for 6-7 months as against 3-4 months when trailed on the ground without support. - In bower system, planting is done at a spacing of 2.5 x 1m. Furrows are opened up at 2.5 m and irrigation channels are laid out at 5-6 m distance. Wooden poles (3 m in height) are pitched on both the ends of alternate furrows at a distance of 5 m. these poles are connected with wires. The wires along the furrows are further connected with cross wires fastened at 45cm distance so as to form a network of wires. Seeds are dibbled at distance of 1 m along the furrow and covered lightly with soil. The vines take about 1.5-2 months to reach the bower height; hence the vines during the initial stages of growth are trailed on ropes till they reach the bower. Once the vines reach the bower height, the new tendrils are then trailed on the bower.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.3.7.**Use of Pollinators & Pollinizers**

Impact of pollinators in enhancing pollination and increasing yield and to provide supplementary income to farmers.

Bitter gourd is highly cross pollinated and pollination take place through honey bees. Therefore, provision of bee boxes is desirable. Alternatively, pollination can be manually done with hand by picking up male flowers and transferring pollens to female flowers (face-to-face touching to centre part of flowers).

Item	Recommended	Proposed	Remarks
No.of Hives			
Name of Pollinisers			
No.of Pollinisers			

5.4.3.8.Use of Plant growth regulators (including waiting period)

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	Application of several plant growth regulators like MH (50-150 ppm), CCC (50-100 ppm), Ethrel (150 ppm), silver nitrate (3-4 ppm), boron (3-4 mg/ha) at 2-leaf stage and 4 leaf stage increases the male flowers in bitter gourd. Soaking of seeds with Ethrel or boron (3-4 mg/kg) also increases yield in bitter gourd. Spraying with 50 mg/L Dikegulac at the 6-8 leaf stage increases female flower numbers and may double the number of fruits. Spraying with Gibberellic acid at 25-100 mg/L at the 2-4 leaf stage increases female flower number and can last for up to 80 days.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.3.9. Flowering & Fruiting

Including Problem of unfruitfulness / Growth, fruiting habits and methods for inducing fruitfulness

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	Generally flowering start flowering after 42 days of seed sowing but it depends on varietal behaviour. In bitter gourd flowering and fruiting continue for longer period. Bearing habit is solitary.
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.3.10.Integrated Pest and Diseases Management including Biological control and Food Safety

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	1. Fungal diseases and Management **Downy mildew** In bitter gourd downy mildew is caused by *Pseudoperenospora cubensis*. The symptom appears on the upper surface of the leaves as angular yellow spots. As the spots enlarge, a general yellowing of leaf occurs followed by the death of tissues. In moist weather, a purplish spots appears on undersurface of the leaf, however the growth is not very pronounced in dry weather. With the sever attack leaves wither and die. **Control measures** • Removal and destruction of diseased material from the field • Seed treatment with Apron (2 g/kg seed) followed by Dithane M-45 (0.3%) or Dithane Z-78 (0.3%). • Two protective sprays of mancozeb (0.25%) at 7 days interval • In severe infestation, one spray of metalaxyl + mancozeb (0.25%). **Powdery mildew** Powdery mildew is caused by *Erysiphe cichoracerum* and sphareotheca fuliginea which affects all parts of the plant. The polyhouse environment contributed to disease spread by being hotter than the outside environment and reducing light levels causing the plants to produce large leaves and, hence, a dense canopy. Severely infected leaves become yellow and eventually shriveled. Sometime plant show chlorotic and stunted growth due attack of the pathogen on stem. Old infected vines are considered as over wintering source for pathogen. Pathogen remains active and spread during hot and dry weather conditions. **Management** • Removal and destruction of diseased material from the field • Spray benlate (0.1%) or karathane (0.05%) or thiovit (5.0 kg/ha). **Anthracnose** In bitter gourd, anthracnose is caused by *Colletotrichum lagenarianum* and pathogen attacks all above ground parts of the plant. Moderate temperatures (22-28 ^{0}C) and intermittent rain and high relative humidity are congenial for the development of the disease. Initially round brown spots appeared on older leaves. The center of these spots fall out giving a 'shot hole' structure. Light brown to black, elongated streaks develop on stem and petioles .Round sunken water soaked spots are produced on fruits. **Management** • Removal and destruction of infected plant materials. • Seed treatment with thiram, bavistin and diathane M-45 (2g/kg

	seed) • Spray blitox (0.25%) or bavistin (0.2%).
	• Bacterial diseases and Management **Leaf spot** Leaf spot is caused by *Xanthomonas compestris* pv. *Cucurbitae* and produced water soaked lesions on the lower surface of leaf with corresponding yellowing on upper surface. Sometimes linear lesions appear on tender stems and petioles. **Management** • Clean cultivation and burning of plant debris • Crop rotation for at least 3-4 years • Adopt bower system and provide proper drainage • Apply Borax wash (2.5%) at 45^0C for 30 seconds.
	2. Viral diseases and Management **Leaf distortion mosaic virus or bitter gourd mosaic (Begomo virus)** Leaf distortion mosaic virus or bitter gourd mosaic symptom can be observed on the leaves. Scattered, small, irregular yellowish patches are seen on the leaves. Due to severe attack some leaves show vein clearing in one or two lobes of the leaf, sometimes young developing leaves are completely distorted, filiform and malformed with considerable reduction in their size. Some of the leaves show marked reduction in the development of the lamina, resulting in a shoe string effect. The virus is transmitted through mechanical means, grafting and by the aphid vectors (*Aphis* gossypii, *Aphis malvae, Aphis craccivora*) and *Myzus persicae*. **Management** • Spray the crop just after germination with nuvacron or dimecron (0.05%) at 10 days intervals to prevent aphid vectors. • Mineral oil like krishi oil @1.5% can be sprayed to minimize virus spread.
	3. Phytoplasma diseases and Management **Bitter gourd witches broom** The disease shows the symptom of malformation and proliferation of axillary buds. The diseased plants bear many flowers and blossom earlier than healthy plants. Internode buds sprout and give many buds like chlorotic leaves. Flowers on infected plants show characteristic green, phyllody symptoms. It is observed that when the plants get infection in the early stages, they do not bear any fruit. **Management** 4. Application of furadan @ 1.5 kg a.i./ha at the time of sowing seeds followed by 5-6 foliar spray of either dimecron or nuvacron or metasystox (0.05%) at 10 days intervals to keep the vector population under check. 5. Spraying of oxytetracycline hydrochloride solution at 500 ppm at weekly intervals to suppress the symptoms.
	6. Pests and Management **Fruit fly (*Strumetia cucurbitae*)** Fruit fly is a serious insect pest of bitter gourd. Maggots of this fly causes severe damage to young developing fruits. The fly attack is severe when plant comes in bearing, especially after summer rains,

	when the humidity is high. **Management** • It is very difficult to control the maggots because they are inside the developing fruits. • Using light traps in the night and poison baits can control the adult flies. Infestation can be controlled by baits containing sex attractants like protein hydolysate 0.5kg + 1.25 kg of 50% malathion WP+200 g of molasses. • Spray of 4% NSKE. **Heliothis caterpillars** Caterpillars were observed to attack foliage, younger instars producing a 'window pane' effect and older caterpillars completely skeletonising leaves. Large caterpillars also bore into fruits, ruining the marketability of the individual fruit. The onset of ripening around the wound entrance rapidly increased maturity rate of the whole fruit and influenced that of the surrounding fruit. **Management** • Rogar can @ 1.25 ml/litre of water can be used to control the insect. **Whitefly** The whitefly incidence was not deemed important; though it was recognized it had the potential for greater crop damage if the environmental conditions favored its population growth or it were the vector for viral transmission **Management** • Rogar can @ 1.25 ml/litre of water can be used to control the insect.
	7. Nematodes and management Sometimes bitter gourd is attacked by root not nematode (*Meloidogyne incognita*) and plant express symptom of stunting growth, varying degree of chlorosis, wilting of the foliage and death of plants. Further, more root damaged by this nematode are easy to prey too many types of fungi and bacteria, which invade the roots and accelerate root decay. **Management** Application of nemagon and long duration crop rotation can control the nematode.
	8. Pesticide residue management (including waiting period)
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

Residue Analysis: Address and contact details of NABL approved laboratory proposed for testing pesticide residue:

5.4.3.11.Physiological disorders- causes, preventive and management measures.

As recommended by ICAR Institute/ CAU/SAU/SHU/ Others	
	(Mention source of publication with date/Year)
	Provide reliable good web links or mention any publication for additional reading or for more information.
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.3.12.Special problems if any

Special Problem	Recommendation by ICAR/ CAU/SAU/SHU	Proposal / action taken by applicant	Points of deviation and justification

5.4.5.Farm Structures and Farm Mechanisation

5.4.5.1.Farm Structures- Protected Cover- Structure, Design and Layout *(Not applicable in case of Open field condition project)*

Objective of Protected cover / structure:

Type of Protected structure:

1. Green House Structure
    a. Naturally ventilated System
        i. Tubular Structure: Rest of India
        ii. Wooden Structure: for NEH region
        iii. Bamboo Structure: –do-

NHB Technical Standards based on the type of protected structure*	Proposal / action taken by applicant	Points of deviation and justification

* Technical standards of NHB to be followed (http://nhb.gov.in/pdf/Technical_Standard.pdf).

5.4.5.2.Farm Mechanisation

Available Machinery and equipment's / implements

	Operations	Available Machinery and equipment's / implements	Proposed use	justification

Plant & Machinery proposed to be used or procured on outsourcing and on his own

	Operations	Plant & Machinery proposed to be used	Out sourcing / own purchase	Cost	justification

Technical Standards

NHB Technical Standards based on the type of protected structure	Proposal / action taken by applicant	Points of deviation and justification

5.4.6.Harvesting and Fruit / Flower care management

5.4.6.1.Harvesting season- Across India

State/UT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
U.P.												
Bihar												
T.N.												
Karnataka												

5.4.6.2.Harvesting season- Across the project state /UT

District/ Production area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

5.4.6.3.Harvesting stage based on purpose and market (local/distant market):

5.4.6.4.Harvesting technology and Fruit care management

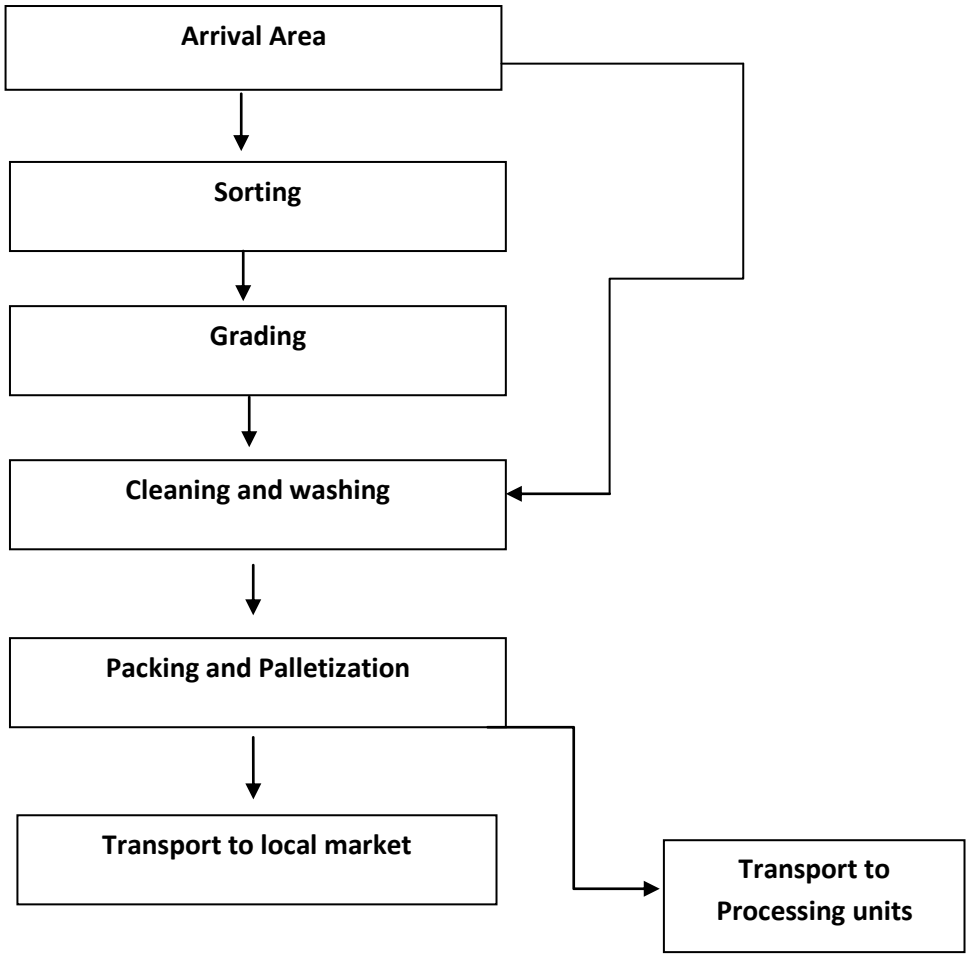
Global best practices	(Mention source of publication with date/Year)
As recommended by ICAR Institute/ CAU/SAU/SHU	Pre-harvest Management Maturity Index / determination Technique Devices Skills and training Time/ Period Handling Containers Others (Mention source of publication with date/Year)
Relevant Photographs if any	
Action taken / proposed by the applicant	
Points of Deviation if any and justification	

5.4.6.5.Expected Yield / Acre and for the project area in a Year:

5.5.	**Post-Harvest Management**	

5.5.1.Post-Harvest infrastructure scenario in horticulture sector in the State and specially for the proposed crop / component

5.5.2.Product / Process Flow chart- Illustrative (It should be crop and project specific) (Unidirectional)



5.5.3.Lay out/ Floor Plan of Post-harvest operations

1. Arrival Area
2. Sorting
3. Grading
4. Cleaning / Washing
5. Packing & Palletization
6. Transport to local market

OR

1. Arrival Area
2. Cleaning / Washing
3. Packing & Palletization
4. Transport to processing unit

5.5.4.Post-harvest operations

1. Arrival Area

Activity	Recommended	Proposed practice	Remarks

2.Pre-Cooling (Also specify protocols to be followed)

Activity	Recommended	Proposed practice	Remarks

3.Curing / De-sapping/ De-latexing/ Any other intervention and protocols.

Activity	Recommended	Proposed practice	Remarks

4.Cleaning / Washing – manual/mechanised; model/make, size, capacity and protocols.

Activity	Recommended	Proposed practice	Remarks

5.Sorting and grading including manual/mechanised; model/make, capacity and protocols.

Activity	Recommended	Proposed practice	Remarks

6.Pre-treatments (HW, waxing, chemical treatment, etc.) and protocols.

Activity	Recommended	Proposed practice	Remarks

7.Packaging and Labelling
(including steps/ processes, norms, protocols, manual/mechanised; model/make, capacity, turn over / hour; palletisation; wooden/plastic / any other.In case of exports are you aware of compliance requirements as provided by APEDA-
http://apeda.gov.in/apedawebsite/six_head_product/FFV.htm)

Activity	Recommended	Proposed practice	Remarks

8.Ripening / De-greening and protocols.

Activity	Recommended	Proposed practice	Remarks

9.Mode of Transport including the requirement of Refer vans

	Recommended	Present status	Gap / Remarks
Transport method-			
Local Market			
District Market			
Distant Market			
Exports			

10.Storage Cold room and Cold Chain

Activity	Recommended	Proposed practice	Remarks

5.5.5.Post-harvest Infrastructure – Integrated Post=harvest Management

1. Type of project	New Project/ Expansion/Modernisation	
2. Location of the Project		
3. Man power employed 4. (On rolls and on contract)		
5. Business model -	Rental, Captive, Part of Supply chain service, mixed	
6. Components of project submitted		
	Infrastructure under the scheme	Tick mark
	1. Integrated PHM	
	2. Integrated Pack house	
	3. Pack House	
	4. Pre-cooling unit	
	5. Cold Room (Staging)	
	6. Mobile Pre-cooling unit	
	7. Ripening Chamber	
	8. Primary Processing	
	9. Refer van	
	10. Retail outlet	
7. Types of products to be handled	Frozen, chill, Mild chill Temperature zones	

Note: In case the project includes any of the post-harvest infrastructure units. Only the relevant details and data sheet should be part of the DPR.

Certificates to enclosed during Market and Financial viability stage and JIT:

1. For Civil Works: Chartered Engineer (Civil) Certificate- component wise cost break up for Civil Works.
2. For Plant & Machinery: Chartered Engineer (Mechanical) Certificate on component wise cost break up for Plant & Machinery showing basic cost and Taxes separately.

5.5.5.1.**Integrated Pack house:**

1. Rationale for the proposal
2. Stages / process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Pack house/ Sorting and Grading unit:
    e. Existing number of units, available capacity and utilisation in the project block, district and the State.
    f. Products and services and projections.
    g. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    h. Various products – Quality, specifications etc.
    i. Annual output for the last 3 years in the project block, district and state.
    j. Projections for 7 years.
    k. Packing and labelling
8. Market :
    a) Quality grades/ specifications/ kinds of products
    b) Demand and Supply data for the products and services.
    c) Existing / Proposed Market linkage
    d) MOUs/ Contract documents / undertakings/ LoA
    e) Target consumption centres/ key domestic markets
    f) Export targets/ Plans if any
    g) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
9. Business model for the unit.
10. Source of Technology
11. Pack house unit: Type and Lay out (show the drawing)
12. Technical standards-Civil infrastructure and Plant and Machinery, accessories: Refer NHB guidelines on Technical Standards

(Proposed Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost	Total cost

13. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost	Dealers location	Quotation is in possession of the applicant

14. Protocols

Activity	Recommended	Proposed practice	Remarks

15. Compliance to relevant BIS code and standards- Electrical, Mechanical- Yes/No.

16.Requirement and Availability of

a. Managerial manpower
b. Technical manpower
c. Skilled manpower
d. Un skilled manpower

Reference Data Sheet

#	Component: Integrated Pack house	Description
1	Pack house Handling capacity	Specify total incoming volume of raw produce in MT/day.
2	Products to be handled	Describe the details of the products planned for value addition.
3	Area of the pack house	Specify the total Plinth area of the construction in m^2.
4	Receiving Area (L x W x H)m	Provide the dimensions of the receiving, weighing and preliminary handling area.
5	Dimension of the building (L x W x H) m	Provide the total covered area of the building.
6	Handling Area (L x W x H)m	External dimensions of the designated sorting, grading, cleaning and packing area.
7	Roof Details	Provide the construction material and specifications of roof.
8	Outer walls and Flooring Details	Description of the outer walls and flooring of enclosed area (food grade materials).
9	Lighting - Internal and External	Type of lighting used (CFL/LED/Normal – total numbers and wattage).
10	Door/ Window Details	Number and Dimensions of openings - doors and windows.
11	Pest control details	Number and details of pest control used (air curtains, other equipment, etc.).
12	Fumigation Details	Specify the details of fumigation if used.
13	De-sapping tables	Specify use of de-sapping tables if used.
14	Mechanised Conveyor system & capacity	Dimensions of conveyor system – belt or roller based, and throughput handling capacity in tons/hour.
15	Washing and Drying machinery (if used)	Specify the details of throughput capacity/motors/pumps/ belts used.
16	Power generating unit	Details of electric generator installed (kVA). If using alternate energy or hybrid systems, provide specifications.
17	Inclusion of Pre-cooling chamber in pack-house	Yes/No
18	Inclusion of staging cold-room in pack-house	Yes/No
19	Layout Drawing	Provide layout drawings of the complete pack house including pre-cooler and staging cold room.

5.5.5.2.**Pack house:**

1. Rationale for the proposal
2. Stages / process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Pack house/ Sorting and Grading unit:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
7. Market :
    a) Quality grades/ specifications/ kinds of products
    b) Demand and Supply data for the products and services.
    c) Existing / Proposed Market linkage
    d) MOUs/ Contract documents / undertakings/ LoA
    e) Target consumption centres/ key domestic markets
    f) Export targets/ Plans if any
    g) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
8. Business model for the unit.
9. Source of Technology
10. Pack house unit: Type and Lay out (show the drawing)
11. Technical standards-Civil infrastructure and Plant and Machinery, accessories: Refer NHB guidelines on Technical Standards (Proposed Design, layout and Photographic evidence certified by charter engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost	Total cost

13. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost	Dealers location	Quotation is in possession of the applicant

14. Protocols

Activity	Recommended	Proposed practice	Remarks

15. Compliance to relevant BIS code and standards- Electrical, Mechanical- Yes/No.

16.Requirement and Availability of

e. Managerial manpower
f. Technical manpower
g. Skilled manpower
h. Un skilled manpower

17.Data sheet if any.

5.5.5.3.**Pre-cooling unit**

1. Rationale for the proposal
2. Stages / process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Pre-cooling unit:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
7. Market :
    a) Quality grades/ specifications/ kinds of products
    b) Demand and Supply data for the products and services.
    c) Existing / Proposed Market linkage
    d) MOUs/ Contract documents / undertakings/ LoA
    e) Target consumption centres/ key domestic markets
    f) Export targets/ Plans if any
    g) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
8. Business model for the unit.
9. Technology / Source/ Company/Make
10. Pre-cooling unit: Type and Lay out (show the drawing)
11. Technical standards-Civil infrastructure and Plant and Machinery, accessories: Refer NHB guidelines on Technical Standards (Proposed Design, layout and Photographic evidence certified by charter engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost	Total cost

12. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost	Dealers location	Quotation is in possession of the applicant

13.Requirement and Availability of

i. Managerial manpower
j. Technical manpower
k. Skilled manpower
l. Un skilled manpower

Reference Data Sheet

#	Component: Pre-cooling unit	Description
1	Produce to be pre-cooled	Name the produce types to be handled.
2	Unit Package load	Specify packaging used- Pallet, Boxes, others.
3	Pre-cooler volumetric capacity	Provide pre-cooler physical volume in cubic meters. Specify the (L x B x H) of pre-cooling unit in metres
4	Cooling System used	Describe type of precooling - forced-air cooling, hydro-cooling / icing / vacuum cooling / room cooling.
5	Temperature and RH levels.	Temperature in degree Celsius and relative humidity in % designed for.
6	Pull down time (batch time)	Time duration per batch to bring the initial product temperature to the storage temperature.
7	No of batches planned in a day	List the number of batches planned per day.
8	Refrigeration Load	Estimated refrigeration load in kW.
9	Insulating material used	Type of insulating material, thickness and 'U Value'.
10	Evaporator/Chiller make	Maker name and model of the evaporator/chiller unit.
11	Air flow & static pressure.	Pre-cooler air flow in cubic meter per hour and static pressure in kPa.
12	No of fans	Specify the quantity of evaporator fans and connected motor power.
13	Water pump capacity	Specify the water flow in m^3
14	Motor rating	Specify the pump motor capacity in kW.
15	Make of condensing unit	Maker name and model of condensing unit.
16	Refrigeration of condensing	Specify the capacity of condensing unit in kW.

#	Component: Pre-cooling unit	Description
	Unit	
17	Condensing unit type	Specify the whether it is air cooled or water cooled.
18	Door details	Dimensions, insulation material and thickness of the door.
19	Controls Used	Specify the electronic controller for room temperature and relative humidity monitoring & control.
20	Refrigerant used	Technical name of refrigerant.
21	Total connected Power	Specify the total connected power in kW.
22	Power generating unit	Details of electric generator used (kVA). Capacity must be sufficient for operating pre-cooler and staging cold room.
23	Layout Drawing	Provide layout drawings of the pre-cooling unit including pack-house and staging cold room.

5.5.5.4.Cold room

1. Rationale for the proposal
2. Stages / process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Cold room unit:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
7. Market :
    h) Quality grades/ specifications/ kinds of products
    i) Demand and Supply data for the products and services.
    j) Existing / Proposed Market linkage
    k) MOUs/ Contract documents / undertakings/ LoA
    l) Target consumption centres/ key domestic markets
    m) Export targets/ Plans if any
    n) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
8. Business model for the unit.
9. Technology / Source/ Company/Make
10. Pre-cooling unit: Type and Lay out (show the drawing)
11. Technical standards-Civil infrastructure and Plant and Machinery, accessories: Refer NHB guidelines on Technical Standards (Proposed Design, layout and Photographic evidence certified by charter engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost	Total cost

Reference Data Sheet

#	Component: Staging Cold Room	Description
1	Products to be stored	Name the produce types to be precooled and stored.
2	Temperature and RH levels.	Temperature in degree Celsius and relative humidity in % designed for.
3	Staging cold room dimension	Dimensions of the insulated cold room (L x B x H) in mtrs.
4	Insulation used	Type of insulating material and thickness along with 'U Value'.
5	Refrigeration Load	Total refrigeration load in kW.
6	Evaporator/Air-cooler make	Maker name and model of the evaporator/air-cooler unit.
7	Evaporator construction	Details for heat exchange coil, fans.
8	Air flow	Air cooler air flow in cubic meter per hour.
9	No of fans	Quantity of evaporator fans and connected motor power.
10	Make of condensing unit	Maker name and model of condenser unit.
11	Refrigeration of condensing Unit	Refrigeration Capacity of condensing unit in kW.
12	Door details	Provide the dimensions, insulation material and thickness of the door.
13	Controls Used	List the electronic controller for room temperature and relative humidity monitoring & control.
14	Refrigerant used	Technical name of refrigerant.
15	Total connected Power	Total electric Load in kW.
16	Layout Drawing	Provide layout drawings of the staging cold room unit including pre-cooler and pack-house.

All mandatory rules & regulations (BIS, ISO, IS etc.) relevant to the item must be complied with.

12. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost	Dealers location	Quotation is in possession of the applicant

13.Requirement and Availability of

a. Managerial manpower
b. Technical manpower
c. Skilled manpower
d. Un skilled manpower

5.5.5.5.Mobile Pre-cooling unit

1. Rationale for the proposal
2. Stages / process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Mobile Pre-cooling unit:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
8. Market :
    a) Quality grades/ specifications/ kinds of products
    b) Demand and Supply data for the products and services.
    c) Existing / Proposed Market linkage
    d) MOUs/ Contract documents / undertakings/ LoA
    e) Target consumption centres/ key domestic markets
    f) Export targets/ Plans if any
    g) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
9. Business model for the unit.
10. Technology / Source/ Company/Make
11. Mobile Pre-cooling unit: Type and Lay out (show the drawing)
12. Technical standards-Civil infrastructure and Plant and Machinery, accessories: Refer NHB guidelines on Technical Standards (Proposed Design, layout and Photographic evidence certified by charter engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost	Total cost

13.List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost	Dealers location	Quotation is in possession of the applicant

14.Requirement and Availability of

e. Managerial manpower
f. Technical manpower
g. Skilled manpower
h. Un skilled manpower

5.5.5.6.**Ripening Chamber**

1. Rationale for the proposal
2. Stages in Post -harvest and Ripening and process flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Industry:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
8. Market :
    h) Quality grades/ specifications/ kinds of products
    i) Demand and Supply data for the products and services.
    j) Existing / Proposed Market linkage
    k) MOUs/ Contract documents / undertakings/ LoA
    l) Target consumption centres/ key domestic markets
    m) Export targets/ Plans if any
    n) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
9. Business model for the unit.
10. Source of Technology
11. Ripening unit: Type and Lay out (show the drawing)
12. Technical standards-Civil and Plant and Machinery Refer NHB guidelines on Technical Standards

(Proposed Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing)

Plant & Machinery	Recommended technical standards	Proposed	Make	No.of units	Unit cost Rs.in lakhs	Total cost

13. Basic Design and Data sheet

Activity	Recommended	Proposed practice	Remarks

14. Staking and typical construction

Activity	Recommended	Proposed practice	Remarks

15. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost excluding Taxes	Dealers location	Quotation is in possession of the applicant

16. Protocols

Activity	Recommended	Proposed practice	Remarks

17. Compliance to relevant BIS code and standards- Electrical, Mechanical,
18. Requirement and Availability of
    i. Managerial manpower
    j. Technical manpower
    k. Skilled manpower
    l. Un skilled manpower

RIPENING CHAMBERS

#	Component: Ripening Chamber	Description *(refer sample datasheets)*
A	**Capacity Details**	
1	Holding Capacity (MT)	
2	Room Volume (m^3)	
3	Room Size (L x B x H) in meters	
4	Number of ripening rooms	
5	Peak ambient temperature	
B	**Pallets**	
6	Size (L x B x H) in mm	
7	Size of crate/box (mm)	
8	Crates/boxes per pallet	
9	Pallets in each chamber	
10	No. of tiers	
11	Pallet Lifting System	
C	**Ripening Parameters**	
12	Ripening room temp (^oC)	
13	Relative Humidity (%)	
14	CO_2 concentration (PPM)	
15	Ethylene concentration (PPM)	
16	Product incoming temp (^oC)	
17	Pull down period (hours)	
18	Air flow (CMH)	
D	**Insulation details**	
19	Walls, ceiling and partition (material, U-value & thickness)	
20	Floor-Type (material, U-value and thickness of insulation)	
21	Exterior wall construction (material and type)	
E	**Doors**	
22	Size of door (L x W) mm	

19.

#	Component: Ripening Chamber	Description *(refer sample datasheets)*
23	Type of door used	
24	Number of doors	
25	Emergency measures (alarm, exit system)	
26	Gasket	
F	**Refrigeration load**	
27	Estimated refrigeration load per chamber	
28	Total refrigeration load (k W)	
G	**Refrigeration system**	
29	Refrigerant used	
30	Refrigeration system	
31	Refrigeration capacity (kW)	
32	COP of refrigeration system	
33	Evaporator and condenser details	
34	Air flow(CFM)	
35	Static pressure(Pa) & fan rating (kW)	
36	Manufacturer name	
J	**Ripening system**	
37	Ethylene applicator (Maker name)	
38	Number of cylinders and capacity per cylinder	
39	Portable or Centralized	
40	Type of controller and Ethylene ppm range	
41	CO_2 exhaust system	
42	Humidifier system details	
K	**Others**	
43	Lighting load (kW)	
44	Refrigeration load (kW)	
45	Total facility power consumption (kW)	

Project declares compliance with all mandatory codes and regulations are complied with

DOCUMENTS FOR REFERENCE

Various codes and Standards of measures are listed for reference here

Electrical: Bureau of Indian Standards (BIS)

#	Title	Reference
1.	PVC Insulated cables (light duty) for working voltage up to 1100 volts	IS 694-1977 Part I & II
2.	PVC Insulated cables (heavy duty) for working voltage up to 1100 volts	IS 1554-1976 Part-I
3.	PVC Insulated cables for voltage 3.3 KV to 11 KV	IS 1554-1976 Part-II
4.	Specification of Polyurethane insulated PVC sheeted heavy duty electrical cables, voltage not exceeding 1100 V	IS 5959-1970 Part-I
5.	Specification of Polyurethane insulated PVC sheeted heavy duty electrical cables, voltage 3.3 KV to 11 KV	IS 5959-1970 Part-II
6.	Guide for making of insulated conductors	IS 5578-1970
7.	Code of practice for installation and maintenance of paper insulated power cables	IS 1255-1967
8.	Code of practice for earthling	IS 3043-1966
9.	Guide of practice for installation and maintenance of induction motors	IS 5216-1969
10.	Code of practice for installation and maintenance of AC induction motor starters	IS 5214-1969
11.	Code of practice for installation and maintenance of AC induction motors	IS 900-1965
12.	Code of practice for installation and maintenance of switchgears	IS 372-1975
13.	Code of practice for installation and maintenance of transformers	IS 1886-1967
14.	Code of practice for electrical wiring installation, voltage not exceeding 650V	IS 732-1963
15.	Code of practice for electrical wiring installation (system voltage exceeding 650V)	IS 2274-1963
16.	Guide for testing three-phase induction Motor	IS 4029-1967
17.	Three Phase induction Motors	IS 325
18.	Electrical measuring instruments and there accessories	IS 248
19.	Current transformers	IS 2705
20	Dimensions of slide rails of electric motors	IS 2968
21.	Flexible Steel conduits for electric wiring	IS 3480
22.	Air-Break Switches	IS 4064
23.	Motor Starters for voltage not exceeding 1000 Volts	IS 8544
24.	Conduits for electrical installation	IS 9537
25.	Selection, installation & maintenance of Transformers	IS 10028
26.	Selection, installation & maintenance of switch gear & control gear	IS 10118
27.	National Electrical Codes	SP: 30

Mechanical: Bureau of Indian Standards (BIS)

#	Title	Reference
1.	Safety codes for Mechanical Refrigeration	IS 660
2.	Code of practice for thermal insulation of cold storages	IS 661
3.	Code of practice for application of polyurethane insulation by in-situ pouring method	IS 13205
4.	Rigid phenolic foams for thermal insulation	IS 13204
5.	Application for spray applied insulation code of practice – Polyurethane / Poly-isocyanurate	IS 12432 Part-III
6.	Specifications for preformed rigid polyurethane (PUR) and poly isocyanurate (PIR) foams for thermal insulation	IS 12436
7.	Expanded polystyrene for thermal insulation	IS 4671
8.	Code for practice for fire safety of industrial buildings: General Storage and warehousing including cold storage	IS 3594
9.	Anhydrous ammonia	IS 662
10.	Industrial Bitumen	IS 702
11.	Gunmetal gate, globe and check valve for general purpose	IS 778
12.	Ball Valves including floats for water supply purposes	IS 1703
13.	Mild Steel Tubes, tubular and other wrought steel pipes fittings	IS 1239
14.	Steel Plates for pressure vessels used at moderate and low temperature	IS 2041
15.	Color code for identification of pipe lines	IS 2379
16.	V-belts for industrial purposes	IS 2494
17.	Hot dip galvanizing of iron and steel	IS 2629
18.	Code for unfired pressure vessels	IS 2825
19.	Glossary of terms for safety and relief valves	IS 3233
20	Steel for pressure vessels and welded structures	IS 3503
21.	Steel tubes for mechanical and general engineering purposes	IS 3601
22.	Steel for general structural purposes	IS 2062
23.	Steel tubes for structural purposes	IS 1161
24.	Specifications for steel doors, windows and ventilators	IS 1038
25.	Code of practice for design loads (other than earthquake) for building and structures	IS 875 Part I to V
26.	Criteria for earthquake resistant design of Structures	IS 1893
27.	Specifications for cold formed light gauge structural steel sections	IS 811
28.	Code of practice for use of Steel Tubes in general building construction	IS 806
29.	Code of practice for use of cold form light gauge steel structural members in general building construction	IS 801
30.	Code of practice for general construction in steel	IS 800
31.	Glossary of terms used in refrigeration and air-conditioning	IS 3615
32.	Pressure and vacuum gauges	IS 3624
33.	Safety Codes for scaffolds and ladders	IS 3696
34.	Formed ends for tanks and pressure vessels	IS 4049
35.	Shell an tube type heat exchangers	IS 4503
36.	Code of safety for ammonia	IS 4544
37.	Expanded polystyrene for thermal insulation purposes	IS 4671
38.	Hot-dip Zinc coating on steel tubes	IS 4736
39.	Units and symbol for refrigeration	IS 4831
40.	HDPE pipes for potable water supplies, sewage and industrial effluents	IS 4984

#	Title	Reference
42.	Specification for sprayed aluminum and zinc coating on iron and steel surfaces	IS 5905
43.	Steel Pipe flanges	IS 6392
44.	Injection molded HDPE fittings for portable water supplies	IS 8008
45.	Vertical steel ladders	IS 8172
46.	Treatment of water for industrial cooling systems	IS 8188
47.	Nominal sizes of valves	IS 9520
48.	Selection, use and maintenance of respiratory protective devices	IS 9623
49.	Polythene floats for ball valves	IS 9762
50.	General purpose ball valves	IS 9890
51.	SI units	IS 10005
52.	Recommendations for general pipeline welding	IS 10234
53.	Ammonia valves	IS 11132
54.	Finned type heat exchanger for room air conditioner	IS 11329
55.	Refrigeration oil separators	IS 11330
56.	MS tubes for vertical condenser	BS 3059
57.	Specification for metal air duct	IS 655
58.	Specification for galvanized steel sheet	IS 227
59.	Specifications for Performed Rigid Polyurethane	IS 12436 -1988
60.	Glossary of Terms used in Refrigeration& Air conditioning	IS 3615: 2007
61.	Code of Practice for Fire Safety of Ware housing including cold storages	As per Relevant IS specification
62.	Food Hygiene – General Principle – Code of Practice	IS 2491-1998
63.	Self-blasted lamps for general lighting service	IS 15111 Part 1 and 2

Publication by International Societies and Associations in relation to Building works

#	Title	Reference
1.	Building Code	IBC 2006
2.	Design Code	AISC 2005
3.	Tolerance Code	MBMA 2002
4.	Purlin Code	AISI 2001
5.	Welding Code	ANS 2006
6.	Wind Load & Seismic Load	IS 875 & IS A893-2002&Relevant Codes

5.5.5.7.**Primary Processing unit**

1. Rationale for the proposal
2. Stages in Primary Processing and flow chart.
3. Proposed project location:
4. Number of days proposed to be operational:
5. Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
6. Industry:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Products, Bi products and services
    a. Various products – Quality, specifications etc.
    b. Annual output for the last 3 years in the project block, district and state.
    c. Projections for 7 years.
    d. Packing and labelling
7. Market :
    h) Quality grades/ specifications/ kinds of products
    i) Demand and Supply data for the products and services.
    j) Existing / Proposed Market linkage
    k) MOUs/ Contract documents / undertakings/ LoA
    l) Target consumption centres/ key domestic markets
    m) Export targets/ Plans if any
    n) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
8. Business model for the unit.
9. Source of Technology

10. Civil infrastructure. Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing.

Facility / utility	Recommended	Proposed.	Remarks

11. Plant & Machinery: Rationale, Design, Capacity, After service, Warranty(Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing).

Plant & Machinery	Recommended technical standards	Proposed machinery standards	Make	No.of units	Unit cost	Total cost

20. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost excluding Taxes	Dealers location	Quotation is in possession of the applicant

21. Requirement and Availability of
    m. Managerial manpower
    n. Technical manpower
    o. Skilled manpower
    p. Un skilled manpower

5.5.5.8.**Refer Van**

1.Introduction

REEFER CONTAINER

Component Definition

A reefer container describes a multi-modal insulated container box with integrated refrigeration equipment. Unlike fixed body trucks, reefer containers can be released from the trailer chassis and handled as a unit load or be stationed on site for localised use as a temporary temperature controlled store pending subsequent operations. This allows the prime motive and/or trailer to be utilised for other carriage.

Component Description

A cost norm of Rs 6 lakh per 9 MT (20 foot container) as defined in code ISO/ TC 104, ISO 668:2013, ISO Code 22R1, 45R1 is applied as part of add-on components.

The component name "Reefer Container" is a temperature controlled unit whose insulating body is made of prefabricated insulating panels. The container is designed to be liftable for mounting on or unloading off a carrier-bed and has both forklift and top lift tolerant design. It has one fixed door at the end opposite to the reefer unit. The air transit pattern is bottom-up from floor to ceiling and the floor section is designed to allow air to circulate under the cargo. A fresh air intake system is in-built making it most suitable for horticulture produce.

Reefer container shall be designed for the full range of standard temperatures ranging from -25 degree Celsius to +25 degree Celsius. There shall be provision for temperature recording, capable to program set-point for either supply air or return air. As this equipment is a removable unit on a transport chassis, the corner posts must have locking facility to secure the container on its carrier.

Such container designs are of the same standard use for export and import of horticultural produce by sea and the design is considered optimal for long haul of perishables. All applicable safety norms shall apply to reefer containers.

Remarks/ Recommendations

The subsidy is intended to incentivise use of reefer containers in domestic cold-chain and beneficiary should be advised not to view this as an option to procure containers for international haulage.

There are multiple advantages to utilising such reefer containers, some of which are enumerated-

1. Dimensions are optimised for standardised pallet carriage; thereby allowing for standardisation in handling of perishable cargo in cold stores and in transit.
2. Available on demand as prefabricated units (in use globally) and hence is delinked with fabrication (delivery delays) as in case of fixed body reefer trucks.
3. Design incorporates fresh air venting which is necessary for perishable crops under long haul movement, for e.g. Himachal to Bangalore, a road trip of more than 9 days (equivalent to a trans-Atlantic crossing by ship). Venting also helps minimise ethylene build up (fruits and vegetables).

4. Design allows for multi-modal utility – by road / rail / ship. This will help develop and optimise goods movement by rail or coastal shipping without undue handling of goods.
5. Designed for plug-in electricity source and can be used as mini storage at various locations, pending further activity.
6. Refrigerated body can be dismounted / delinked from primary vehicle, freeing the prime motive or vehicle for other gainful work or other carriage options.
7. There are other design aspects that allow for innovative application of this component.

The reefer containers have computerised cooling system controls, enabling precise temperature control which is important in case of long haulage of horticulture goods. The air ventilation port allows for high respiring perishable goods to continue to have life sustaining oxygen, especially when in-transit in enclosed space for longer than 3 days. These ventilation ports are adjustable to suit the varied demand pattern of fresh fruits and vegetables. It must be noted, that lack of oxygen and build-up of respired CO_2 cause demise of horticulture goods when enclosed over long periods.



Photographs sourced from NCCD members



2. Rationale for the proposal
3. Product / Process flow chart.
4. Proposed project location:
5. Number of days proposed to be operational:
6. Produce / Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability. (Obtain past data from Local District Horticulture Officer. In the absence of scientific data, the authority can give estimated/projected data with stated assumptions)
    c. Catchment area:

S.No	Location of Catchment (Cluster- Primary / Secondary)	Name of Village, Block, District	Commodities to be sourced	Qty to be sourced

    d. Quality control/ assurance /testing
7. Enterprise:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Market :
    o) Quality grades/ specifications/ kinds of products
    p) Demand and Supply data for the products and services.
    q) Existing / Proposed Market linkage
    r) MOUs/ Contract documents / undertakings/ LoA
    s) Target consumption centres/ key domestic markets
    t) Export targets/ Plans if any
    u) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.
8. Business model for the unit.
9. Source of Technology
10. Civil infrastructure, Plant and Machinery. Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing.

Facility / utility	Recommended	Proposed.	Remarks

11. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost excluding Taxes	Dealers location	Quotation is in possession of the applicant

12.Skilled Manpower availability:

13. Data sheet:

Reference Data Sheet

#	Component: Reefer Container	Description
1	Container dimensions	20 standard: 8' x 8.5' x 20', 27 to 28 cum
2	Insulation details	Thermal Conductivity value / mm
3	Tare weight	kgs
4	Gross weight	kgs
5	Temperature recording	type
6	GPS System	Must be fitted
7	Refrigeration capacity	kW
8	Refrigerant used	Technical name of refrigerant
9	Fresh air exchange	Describe system fitted
10	Diesel/electric auto-switching	Describe dual power unit
11	Air flow cum/hr (CFM)	Evaporator air flow in CFM
12	Temperature control precision +/- °C	Precision in controls in °C
13	Name of Manufacturer	
14	Year of manufacture	
15	Any design enhancement	Describe design changes is any

Codes and References		
1	ISO/ TC 104	Freight containers
2	ISO 668:2013	Classification, dimensions and ratings
3	ISO/NP 1161:1990	Corner fittings
4	ISO 1496/2 : 1996	Specification and testing
5	ISO Code 22R1, 45R1	Size of container
6	ISO 6346: 1995	Coding, Identification and Marking
7	ISO-14001:2004	Environmental Management
8	ISO 1496/2	Performance test of thermal appliances

All mandatory rules & regulations (BIS, ISO, IS etc.) relevant to the item must be complied with.

Retail outlet

1.Introduction:

RETAIL SHELF

Component Definition

The Retail Shelf equipment's are temperature and/or humidity controlled cabinets or shelves that help in merchandising of fresh horticulture produce by maintaining the on-shelf quality of fruits and vegetables.

Component Description

A maximum admissible cost norm of Rs 10 lac per establishment is applicable for a Retail shelf as part of add on components for credit linked subsidy. This does not limit the establishment from utilising more retail shelves as per requirement or from sourcing equipment with higher costs or options.

The Component name "Retail Shelf" can consist of individual items such as:

1. Multi-decks
2. Small Multi-decks
3. Roll In decks
4. Vertical Decks
5. Specialised cool shelving
6. Associated refrigeration and humidification equipment.

All applicable safety and performance norms shall apply to Retail Shelf component.

2. Rationale for the proposal
3. Product / Process flow chart.
4. Proposed project location:
5. Number of days proposed to be operational:
6. Produce / Raw Material:
    a. Types/ Quality of raw material- Grades/ Specifications
    b. Raw material availability and procurement: Details of own production if any and local production annually with 5 years data with future projections. Markets and farm areas of procurement and reliability.
    c. Produce/ Raw material quality and assurance testing
7. Enterprise:
    a. Existing number of units, available capacity and utilisation in the project block, district and the State.
    b. Products and services and projections.
    c. Statutory requirements / licensing details if any.
7. Market :
    v) Quality grades/ specifications/ kinds of products
    w) Demand and Supply data for the products and services.
    x) Existing / Proposed Market linkage
    y) MOUs/ Contract documents / undertakings/ LoA
    z) Target consumption centres/ key domestic markets

aa) Export targets/ Plans if any

bb) In case of export, details of volume to be exported / export destination / statutory norms of export destination should be provided in the DPR.

8. Business model for the unit.
9. Source of Technology
10. Civil infrastructure, Plant and Machinery. Design, layout and Photographic evidence certified by chartered engineer is required to be submitted in case the project is considered for processing.

Facility / utility	Recommended	Proposed.	Remarks

11. List of Manufacturers / Suppliers of Plant and Machinery (enclose quotations during Market viability and Financial viability stage)

Plant & Machinery	Manu-facturer	Offer product Technical Specifications	Compliance with the NHB standards	Quotation cost excluding Taxes	Dealers location	Quotation is in possession of the applicant

12.Requirement and Availability of

q. Managerial manpower
r. Technical manpower
s. Skilled manpower
t. Un skilled manpower

13. Data sheet:



Representative Photographs from www

Reference Data Sheet

#	Component: Retail Shelf	Description
1	Name of Manufacturer	Provide the name of manufacturer and model.
2	Type	Specify the kind of Retail Shelf i.e. Multi-decks, Small Multi-decks, Roll In's.
3	Produce to be handled	Name types of produce to be handled
4	Capacity	Storable volume of fresh products the shelf can store in m^3.
5	Dimension external	Specify the floor area occupied by the retail and height in mtr
6	Electronics	Specify energy saving electronics and the automatic cut-off/start are provided.
7	Temperature Range	Specify the operating Temperature Range of the Retail Shelf as specified by the Manufacturer.
8	RH control	Provide details of RH controls
9	Lighting system	Provide details and kW of lights used
10	Total Refrigeration capacity	Provide the capacity of refrigeration unit of the shelf in kW.
11	Refrigerant used	Provide the technical name of refrigerant.
12	Energy consumption	Total power consumption of the shelf in kW.
13	Years in business	Provide details of retail shop, years in business, annual sales volume, etc.

5.6	**Marketing**

5.6.1.Connectivity of project site and produce

1. Road connectivity	Distance
a. National Highway	
b. State Highway	
c. Fright corridor	
d. Quadri lateral	
2. Rail connectivity	
3. Air connectivity	

5.6.2.Nearest produce Assembling / Aggregation unit/ place if any

5.6.3.Existing Market Institutions – Agri.Produce Market Committees, …….

a) Near to Project site
b) Within the District / Neighbourhood districts
c) Within the State
d) In Adjacent State

5.6.4.Alternative Marketing strategies;

a. Pre-harvest contract
b. On Farm Marketing
c. Retail Marketing
d. Wholesale marketing
e. Online Marketing
f. Exports

5.6.5.Traceability Record/ system proposed if any for packs.

5.6.6.Proposed value chain / method of Marketing by the Applicant

5.7	Value Addition/ Processing

Potential for the processing of crop produce / commodity and facilities / infrastructure available

	Processing product (s)	Infrastructure / Processing units available	Capacity	% capacity utilisation	Remarks

6	Technology providers

6.1.Research Institute (s) [ICAR/CAU/SAU/SHU etc.] providing / from which technical details are ascertained

6.2. Experts-whose services are availed -**Crop expert / Subject Matter Specialist (SMS) and other experts consulted DPR preparation.**

Crop Expert	Name of Horticulturist/ Crop Expert	
(Mandatory)	Current profession:	
	Educational Qualification and University passed out	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
	Email id	
Hi Tech Expert	Name of Expert	
(Desirable)	Current profession:	
	Educational Qualification and University passed out	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
	Email id	
Post-Harvest Management Expert (Mandatory)	Name of PHM Expert	
	Current profession:	
	Educational Qualification and University passed out	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
	Email id	
Cold storage / Infra Expert / Charter Engineer (Mandatory in case of Cold chain component)	Name of Expert	
	Current profession:	
	Educational Qualification and University passed out	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
	Email id	
Market Expert	Name of Expert	
(Desirable)	Current profession:	
	Educational Qualification and Univ.	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
Project Finance	Name of Expert	
(Mandatory)	Current profession:	
	Educational Qualification and University passed out	
	Registration Number if any	
	Permanent Address:	
	Contact Number:	
	Email id	

6.3.Agri-Business Incubators / Extension / Advisory services

1. Contact person address for Advisory / Extension/ Incubator services available on the said crop specific ICAR institution: Provide the details.

ICAR Institute / NRC/ Directorate contact Person for Extension / Advisory/ Business Incubatory services (Mandatory)	Designation of Horticulturist/ Crop Expert	
	Name of the Contact person	
	Postal Address	
	Postal PIN code	
	Contact Tel:	
	Contact Mobile Number:	
	Email id	

2. List of Incubators / Extension / Advisory service nearest to the project.
3. If any assistance is taken from the incubators, details

7	**Food Safety – With / Without Good Agricultural Practices Certification**

7.1.	GAP	Optional
	Whether the applicant proposes to undertake Good Agricultural Practices?	Yes/No
	If Yes. What brand / kind GAP – Provide details of brand	
	Provide Certifying Agency details and contact person	
	NABL lab whose services are proposed to be availed to assure compliance with regard to pesticide / chemical residue.	

7.2.FOOD SAFETY MEASURES

7.2.1.Pre-Planting Measures

	Activity	Action taken /Proposed to be in the project
1.	Site selection Land or site for fruits and vegetable production should be selected on the basis of land history, previous manure applications and crop rotation.	
	a) The field should be away from animal housing, pastures or barnyards.	
	b) Farmers should make sure that livestock waste should not enter the produce fields via runoff or drift.	
2.	Manure handling and field application Livestock manure can be a valuable source of nutrients, but it also can be a source of human pathogens if not managed correctly.	
	a) Proper and thorough composting of manure, incorporating it into soil prior to planting, and avoiding top-dressing of plants are important steps toward reducing the risk of microbial contamination.	
3.	Manure storage and sourcing	
	a) Manure should be stored as far away as practical from areas where fresh produce is grown and handled.	
	b) Physical barriers or wind barriers should be erected to prevent runoff and wind drift of manure.	
	c) Manure should be actively compost so that high temperature achieved by well-managed, aerobic compost can kill most harmful pathogens.	
4.	Timely application of manure Manure should be applied at the end of the season to all planned vegetable ground or fruit acreage, preferably when soils are warm, non-saturated, and cover-cropped. If manure is being applied at the start of a season, then the manure should be spread two weeks before planting, preferably to grain or forage crops.	

5. Selection of appropriate crop Farmers should avoid growing root and leafy crops in the year that manure is applied to a Field. Manure should be applied to perennial crops in the planting year only. The long period between application and harvest will reduce the risks.	

7.2.2.Production Measures

1. Irrigation water quality Ideally, water used for irrigation or chemical spray should be free from pathogen. However, potable water or municipal water is not feasible for extensive use for crop production.	
a) Hence, surface water used for irrigation should be quarterly tested in laboratory for pathogen.	
b) Farmers can filter or use the settling ponds to improve water quality.	
c) Fruit and vegetable crops should not be side dressed with fresh or slurry manure. If side dressing is required, well composted or well-aged (greater than one year) manure should be used for the application.	
2. Irrigation methods	
a) Drip irrigation method should be used, whenever possible to reduce the risk of crop contamination because the edible parts of most crops are not wetted directly.	
b) Plant disease levels also may be reduced and water use efficiency is maximized with this method.	
3. Field sanitation and animal exclusion	
a) Farmers should stay out of wet fields to reduce the spread of plant or human pathogens.	
b) Tractors, plant, machinery and equipments that were used in manure handling should be cleaned prior to entering produce fields.	
c) Animals, including poultry or pets should not be allowed to roam in crop areas, especially close to harvest time.	
4. Worker facilities and hygiene	
a) Farmers should get proper training to make them understand the relationship between food safety and personal hygiene. These facilities should be monitored and enforced.	
b) Ideally, farm workers should be provided clean, well-maintained and hygienic toilet facilities around the	

farming areas separately for the male and female.	

7.2.3.Harvest

1. Clean harvest aids	
a) Bins and all crop containers have to washed and rinsed under high pressure. All crop containers should be sanitized before harvest.	
b) Bins should be properly covered, when not in used to avoid contamination by birds and animals.	
2. Worker hygiene and training	
a) Good personal hygiene is particularly important during the harvest of crops. Sick employees or those with contaminated hands can spread pathogens to produce.	
b) Employee awareness, meaningful training and accessible restroom facilities with hand wash stations encourage good hygiene.	

7.2.4.Post-Harvest Handling

1. Worker hygiene	
a) Hands can contaminate fresh fruits and vegetables with harmful microbes	
b) Packing area should be cleaned and sanitized.	
c) Supply liquid soap in dispensers, potable water, and single-use paper towels for hand washing.	
d) Packing area should be cleaned and sanitized. Supply liquid soap in dispensers, potable water, and single-use paper towels for hand washing.	
e) Workers should be properly educated about the importance of restroom use and proper hand washing.	
f) Encourage proper use of disposable gloves on packing lines.	
g) Sick employee should not be given food-contact jobs.	
2. Monitor wash water quality	
a. Potable water should be preferably used in all washing operations.	
b. Clean water should be maintained in dump tank by sanitizing and changing water regularly.	
c. Use chlorinated water and other labeled disinfectants to wash fresh produce.	
3. Sanitize packinghouse and packing operations	

a. Loading, staging, and all food contact surfaces should be cleaned and sanitized at the end of each day.	
b. Exclude all animals, especially rodents and birds from the packinghouse.	
c. Wash, rinse and sanitize the packing line belts, conveyors, and food contact surfaces at the end of each day to avoid buildup of harmful microorganisms.	
d. Packaging material should be stored in a clean area	
4. Pre-cooling and cold storage	
a. After harvesting, fruits and vegetables should be quickly cooled to minimize the growth of pathogens and maintain good quality.	
b. Water bath temperature for cooling should not be more than 10F cooler than the produce pulp temperature.	
c. Refrigeration room should not be overloaded beyond cooling capacity.	
5. Transportation of produce from farm to market	
a) Proper cleanliness of the transportation vehicles should be ensured before loading.	
b) Farmers have to make sure that fresh fruits and vegetables are not shipped in trucks which have carried live animals or harmful substances.	
c) If these trucks must be used, they should be washed, rinsed, and sanitized them before transporting fresh produce.	
d) For traceability norms, it must be ensured that each package leaving the farm can be traced to field of origin and date of packing	

Source: TNAU
http://agritech.tnau.ac.in/gap_gmp_glp/gap_fresh%20_%20fruits%20&%20veg.html

8.Innovation if any

9.Profitability of the project (Horti-business): Critical observations of Applicant

10	**Checklist**

Check list for Detail Project Report (DPR)

		Mandatory Information	Document / Evidence *	Tick Mark
	Project at a Glance	√		
1	**About the Applicant /Promoter**	√		
2	**Details of benefits availed by the Applicant / Promoter**	√		
3	**About Project -Name, rationale, Management and Description**			
	1. Name of Project, Activity, Objectives and expected Outcomes	√		
	2. Rationale / Justification for the project	√		
	3. Site/ Land details- RoR/ Ownership / Registration of lease/ map etc.	√	Certified Land revenue documents	
	4. Location of the Project- Identification	√		
	5. Current usage of land of proposed Project Area	√		
	6. Current infrastructure and assets possessed by the Applicant:	√		
	7. Lay out plan of the project	√	Lay out Plan	
	8. Conversion of Land Use (CLU)	√	Certificate from competent authority	
	9. Whether project site is part of production belt / cluster / hub	√		
	10. Rationale for the location of the project	√		
	11. Compliance of project site for food safety	√		
	12. Components / Activities of the Project with justification	√		
	13. Operations planning	√		
	14. Month wise operational chart / Implementation schedule	√		
	15. Backward and Forward linkages.	√		
	16. Manpower (Skilled & Unskilled labour etc.) availability	√		
	17. Infrastructure (Power, Fuel, Water, Plant and Machinery, connectivity, Effluents treatment etc.)- Required, Already available, Gaps and the management.	√		

	18. Employment generation	√		
	19. SWOT Analysis	√		
	20. Monitoring and evaluation	√	Certificate	
4	**NHB Scheme under which the project is proposed with rationale / justification.**			
5	**Project details**			
5.1	**Agro-climatic suitability / feasibility**			
	1. Origin and distribution of crop in the said location and India and in the world (briefly)			
	2. Agro-climatic / Horticultural zones and suitability of the crop (s)	√	IMD Data	
	3. Soil type and latest health-suitability for the crop	√	Latest Soil health card (not more than 1 month old)	
	4. Water (irrigation) source, availability, Quality and suitability	√	Latest Water Analysis report (not more than 1 month old)	
5.2	**Market viability**			
	1. Commercial and Nutritive importance / significance, composition and Uses			
	2. Target Market	√		
	3. Area, Production and Productivity in the District, State and India for the last 5 years			
	4. Clusters of the project crop in the state.	√		
	5. Demand and Supply Gap	√	State Horticulture Dept.	
	6. Global producers- Country, Area, Production, Productivity and global market share in the last available 5 years.			
	7. International trade and potential (for export oriented projects)	√ @		
	8. Seasonality of fruit and its comparison with other available fruits	√		
	9. Price variation of commodity in the State and nearby markets	√	State Govt.	
	10. Balance sheet of commodity in the State			
	11. Central and State Government policy			
	12. Value chain in the commodity	√		
	13. Proposed Strategy by the Applicant for Marketing and Market viability	√		
5.3	**Financial viability**			

	1. Due diligence status	√		
	2. Project Cost	√	Certified by CA	
	3. Means of Finance	√		
	4. Investment into Horticulture	√		
	5. Key financial Indicators	√		
	6. Project Financing	√		
	a. Rate of Interest	√		
	b. Returns from the Project (IRR):	√		
	c. Cost of Production and Profitability (Annexure)	√		
	d. Yield and Sales Chart (Annexure)	√		
	e. Proposed Balance Sheet: (Annexure)	√		
	f. Proposed Cash flow Statement for next 7 years (Annexure)	√		
	g. Proposed Profit & Loss Account: (Annexure)	√		
	h. Proposed Repayment of Term loan and Schedule (Annexure)	√		
	i. Break even Analysis (Annexure)	√		
	j. NPV (Net Present Value)	√		
	k. Economic Rate of Return	√		
	7. Farm record keeping/ Maintenance proposed	√	Records	
5.4	**Land development and Crop Husbandry**			
	5.4.1.Land development			
	5.4.2.Selection of Quality Planting Material			
	1. Recommended and popular Cultivars-varieties/hybrids, their specific characteristics, requirements and yields	√		
	2. Cultivar/Hybrid/Variety selected and Criterion adopted for selection	√		
	3. Propagation methods	√		
	4. Accredited / Good Nurseries in the area	√		
	5. Planting material-source, quality and suitability	√	Nursery / Shop Invoice with Seed quality	
	5.4.3.Orchard / Site planning, Lay out and management			
	1. Planning, establishment and layout systems	√		
	2. Land preparation	√		
	3. Planting Season / time and density and transplanting	√		

	4. Water and Nutrient management	√	Written plan	
	5. Intercultural operations including Weed management	√		
	6. Plant canopy architecture management/ training and pruning	√		
	7. Planting systems and transplanting of horticultural crops	√		
	8. Use of Pollinators & pollinisers	√		
	9. Use of Plant growth regulators	√		
	10. Flowering & fruiting	√		
	11. Integrated Pest and Disease Management and Food Safety measures	√		
	12. Physiological disorders- causes, preventive and management measures.	√		
	13. Special problems if any	√		
	5.4.5.Farm Structures and mechanisation	√		
	1. Protective cover structure	√	Technical standards	
			Undertaking of expertise / competency by Agency	
	2. Farm Mechanisation	√	Company Brochures	
	5.4.6.Harvesting and Fruit / flower care management			
5.5	**Post-Harvest Management**	√		
	1. Post-Harvest infrastructure scenario in horticulture sector in the State and specially for the proposed crop / component			
	2. Product/ Process Flow chart	√		
	3. Lay out / Floor Plan of post-harvest operations	√		
	4. Post-harvest operations (Based on applicability)	√	Protocols	
	5. Pre-cooling	√		
	6. Curing	√		
	7. Cleaning / Washing	√		
	8. Sorting and Grading	√		
	9. Packing and labelling	√	Models	
	10. Ripening	√		
	11. Transport	√		
	12. Storage- Low cost / cold storage/ CA	√		
	13. Post-harvest infrastructure – Integrated Post-harvest Management- (Which ever component is proposed)	√	Technical Standards	

	1. Integrated Pack house			
	2. Pack House			
	3. Pre-cooling unit			
	4. Cold Room (Staging)			
	5. Mobile Pre-cooling unit			
	6. Ripening Chamber			
	7. Primary Processing			
	8. Refer van			
	9. Retail outlet			
	10. Labour room			
5.6	**Marketing**			
	1. Aggregation & Assembling: Marketing infrastructure	√		
	2. Market Institutions and agents	√		
	3. Demand and Supply trends and forecast both in local and National markets.			
	4. Traceability system	√		
	5. Proposed value chain / method of Marketing by the Applicant	√		
5.7	**Value addition / Processing**	√		
6	**Technology providers**	√		
	1. ICAR /CAU/ SAU/SHU / Research Stations and Experts names	√		
	2. Agri/Horti-Business incubators	√		
7	**Food Safety -With /Without GAP certification**			
	1. GAP Certification if any	√		
	2. Food safety measures	√	Clean farm, Trained workers; Protective clothing, Safety equipment; First Aid; Safety and Hygiene policy; Waste Management Plan	
	a. Pre-planting	√		
	b. Crop husbandry	√		
	c. Harvestings	√		
	d. Post-harvest	√		
8	Innovation if any			
9	**Risk Management**	√	Proposed insurance details if any	
10	**Checklist**	√		
11	**Declaration from Crop Expert and Project Finance Expert**	√		
	Self-declaration by the Applicant	√		

Note: *: Documents are to be submitted only when NHB accords Pre- IPA approval.

@ In case of export units.

11.1.Declaration by Crop Expert (if the Project / Crop specific information, data and chapters of DPR are prepared by the expert and not by the applicant)

I have read and understood the latest NHB Schemes operational guidelines and made the applicant understand the same.

The technical information provided in the Detail Project Report are as recommended by ICAR/ State Agriculture / Horticulture University/ …….Research Institute as published in their publication……./ genuine website…….

The project is technically feasible and economically viable and is bankable.

Certified that the information/contents as above furnished by me/us in the application are true to the best of my/our knowledge & belief and nothing material has been concealed.

My details are as follows:

Name of Crop Expert		(Could be any working or retired faculty / scientist in ICAR/ CAU/SAU/SHU/State Horticulture Dept. or ICAR Agri/Horti-business incubators)
Current/ previous profession:		
Educational qualification and University passed out		
Registration number if any		
Permanent address:		
Contact Number:	Tel	
	Mobile	
	Email	

Place	Signature
Date	Designation and Seal

11.2.Declaration by Project Finance Expert (Chartered accountant)

(if the Market viability and Financial Viability chapters are prepared by the Project Finance Expert and not done by the applicant on his/her own)

I have read and understood the latest NHB Schemes operational guidelines and made the applicant understand the same.

The project is technically feasible and economically viable and is bankable.

The Financial and Market viability as provided in the Detail Project Report is true to the best of my knowledge.

Certified that the information/contents as above furnished by me/us in the application are true to the best of my/our knowledge & belief and nothing material has been concealed.

Name of Chartered Accountant	
Current profession:	
Educational qualification and University passed out	
Registration number if any	
Permanent address:	
Contact Number:	Tel
	Mobile
	Email

Place	Signature
Date	Designation and Seal

12.Self-Declaration by applicant

1. I have read, understood and abide by the latest NHB Schemes operational guidelines including conditions, norms and pattern of assistance.
2. The information provided in the Detail Project Report is true to my knowledge.
3. In case the details provided by me viz., (i) my personal details, land, previous benefits availed by me from either Central and State Government if proved false at any stage NHB is entitled to recover any subsidy if any released by it from me.
4. I have personally ascertained technical details of the projector or I have availed the services of a competent Horticulturist for technical details and viability. Accordingly declaration is provided herewith.
5. I have personally ascertained Financial and Market viability of the project or I have availed the services of a competent Project Finance expert for the requisite project finance details and project viability. Accordingly declaration is provided herewith.
6. In case the project is approved for pre-IPA, I shall undergo a 2 Weeks (min.10 working days) training programme in case of Open field condition and protective cover (with or without PHM component) and a minimum of 1 Week programme in case of standalone PHM component at my own expenses in one of the ICAR/CAU/SAU/SHU/ Research Station/ Centres of Excellence/ related Central or State Government institution/ others as found appropriate / approved by NHB.
7. I shall adopt scientific package of practices / technology and maintain proper farm accounts.
8. The project is technically feasible and economically viable and is bankable.
9. In case the project application is considered for application processing, I am bound to submit all required / requisite mandatory documents to establish veracity of my DPR and eligibility to claim subsidy under NHB Schemes in the form prescribed with in 6 months of any such intimation from NHB for according In principle approval (IPA). Else I acknowledge that my application stands vacated and rejected by default of my omission.
10. I understand that incomplete, delayed and /or NPA projects and default cases shall not be eligible for subsidy.
11. I solemnly affirm/ undertake that the proposed project components in the application are a completely new activity and not a pre-existing activity or any component thereof.
12. In case of Plant & Machinery- only new are proposed. Reconditioned / refurbished equipment/ Plant & Machinery shall not be procured under the project.
13. In case of concealment of any facts in this regard, the NHB would have right to reject/ cancel my application / project out right at any stage.
14. In case the project is approved for subsidy claim I shall undertake a MOU with NHB to comply with all the terms and conditions of the scheme guidelines as effective on the date of subsidy claim approval and any other condition/ advisory in the interest of projects success and sustainability.

Applicant (Name and signature) and Seal if any

Date Location:

Should be taken at the time of preparation of DPR (before DPR submission). but should be enclosed during Market viability and Financial viability stage both in soft copy and hard copy.

CA Certificate Format
(Letter Head of the CA)
[Refer Para

CA certificate (With membership No. and firm registration No. of CA) in the following format:-

i. Project Cost:

Sl. No.	Name of the Component/Item	Amount (Rs. in lakh)
1.	Land/development charges	
2.	Civil works — Technical civil works — Other civil works	
3.	Plant & Machinery	
4.	Misc. Fixed Assets	
5.	Others	
	TOTAL	

ii. Means of Finance:

Sl. No.	Item	Amount (Rs. in lakh)
1	Promoter's Equity	
2	Term Loan	
3	Grant from MFPI	
4	Unsecured loan*	
5	Others	

*Details of unsecured loans along with PAN No. of lenders, if any, duly certified by CA.

Signature and Seal of C.A (Statutory Auditor in case of company)

Date: _____

Counter signature of promoter/ authorized signatory of company with Seal

CA Certificate Format
(Letter Head of the CA)

CA certificate (With membership No. and firm registration No. of CA) in the following format:-

iii. Project Cost: (Rs. in lakh)

Sl. No.	Name of the Component/Item	Cost approved by the Ministry	Actual expenditure incurred as on ------
1.	Land/development charges		
2.	Civil works — Technical civil works — Other civil works		
3.	Plant & Machinery		
4.	Misc. Fixed Assets		
5.	Others		
	TOTAL		

iv. Means of Finance: (Rs. in lakh)

Sl. No.	Item	Means of finance approved by the Ministry	Actual expenditure incurred as on ------
1	Promoter's Equity		
2	Term Loan		
3	Grant from MFPI		
4	Unsecured loan*		
5	Others		

*Details of unsecured loans along with PAN No. of lenders, if any, duly certified by CA.

Signature and Seal of C.A (Statutory Auditor in case of company)

Date: _____

(The certification by CA should be based on the verification of books of accounts, bills, invoices, work orders, bank statements, etc. related to the project.)

Counter signature of promoter/ authorized signatory of company with Seal

Should be taken at the time of preparation of DPR (before DPR submission). but should be enclosed during Market viability and Financial viability stage both in soft copy and hard copy.

CE Certificate (Civil) Format for Technical Civil Work:
(Letter Head of the CE)
[Refer Para

CE certificate (With membership/registration No. of CE) in the following format:

Name of Project:
Location with address:
Date of site Visit by Chartered Engineer:
Project Progress: (If project has multiple locations, the location wise details should be submitted in below format for each location)

Sl. No.	Name of Component	Proposed Area (sq.m)	Proposed Cost (Lakh Rs)	Rate/ Unit(Rs/Sqm)
	Total			

Signature and Seal of C.E.

Counter signature of promoter/ authorized signatory of company with Seal

Annexure-IV

CE Certificate (Civil) Format for Technical Civil Work:
(Letter Head of the CE)

CE certificate (With membership/registration No. of CE) in the following format:

Name of Project:
Location with address:
Date of site Visit by Chartered Engineer:
Project Progress: (If project has multiple locations, the location wise details should be submitted in below format for each location)

Sl. No.	Name of Component	Proposed/ appraised Area (sqm)	Proposed/ appraised Cost (Lakh Rs)	Actual Area(sqm)	Actual Cost(Lakh Rs)	Rate/ Unit(Rs/Sqm)	Remarks about the status of implementation	Comments on quality, construction standards, market rates
	Total							

It is certified that the material/ components used in the Technical Civil Work are new.

Signature and Seal of C.E.

Counter signature of promoter/ authorized signatory of company with Seal

22/02/2018

CE Certificate (Mechanical) Format for Plant & Machinery:
(Letter Head of the CE)
[Refer Para

CE Certificate (With membership/registration No. of CE) in the following format:-

Name of project:
Location with address:
Date of Visit by Chartered Engineer:
Project Progress (If project has multiple locations, the location wise details should be submitted in below format for each location)

Sl. No.	Name of Component	Proposed Quantity	Proposed Cost (Lakh Rs)		Supplier/ Manufacturer (Supported by quotations)
			Basic Cost	Taxes, Freight, installation, insurance	
	Component -1				
	Component -2				
	Component -3				
	TOTAL				

Signature and Seal of C.E.

Counter signature of promoter/ authorized signatory of company with Seal

Annexure-V

CE Certificate (Mechanical) Format for Plant & Machinery:
(Letter Head of the CE)

CE Certificate (With membership/registration No. of CE) in the following format:-

Name of project:
Location with address:
Date of Visit by Chartered Engineer:
Project Progress (If project has multiple locations, the location wise details should be submitted in below format for each location)

Sl. No.	Name of Component	Proposed/ appraised Quantity	Proposed/ appraised Cost (Lakh Rs)	Actual Quantity	Actual Cost (Lakh Rs)		Supplier/ Manufacturer	Status of implementation	Comments on quality, specifications, etc.
					Basic Cost	Taxes, Freight, installation, insurance			
	Component -1							Such as: •Ordered •Received at site •Installation in progress •Installed •Commissioned	
	Component -2								
	Component -3								
	TOTAL								

It is certified that all the plant and machinery for which grant has been approved are new.

Signature and Seal of C.E.

Counter signature of promoter/ authorized signatory of company with Seal

Appendix-VI

UNDERTAKING
[Refer Para 12.1 (m)]

I ..... (Name of the Lead Promoter/Director/ Partner/ Proprietor etc.) Son of Mr..... (Father's name) resident of ..... (Residential address) do hereby solemnly affirm and declare/undertake as under:

1. That I am promoter/ director/ partner/ proprietor of M/s..... (name of applicant) having its Registration no. .....and Registered Office at ..... (office address of applicant).

2. I hereby make application and I am duly authorized in my own right/by management vide its resolution no. .....dated.....to apply and sign all required documents including this undertaking on behalf of company/partnership firm/cooperative society etc. named as .....; and am fully aware of the facts relating to the setting up of project at Survey/ Plot No....., Village.....,Tehsil.....,District.....,State....., PIN code .....(location of the main facility) for.....(activities to be undertaken by project) and application is being made to the Ministry of Food Processing Industries (MoFPI) under the Central Sector Scheme for Creation of Backward and Forward Linkages.

3. That the term and conditions of the above scheme of the MoFPI under which an application is made by the applicant have been properly read and understood by me and I affirm that the project/ proposal comply with all the terms and conditions of the approval letter and provisions enshrined in the scheme guidelines.

4. That the proposed activities to be undertaken by the project/proposal are covered under the above scheme of MoFPI and no part of the scheme/infrastructure of the project is designed or assigned to be used for any activity other than the activities specified in the application at present or in the near future.

5. It is certified that ..... (name of applicant) has not obtained or applied for grants for the same project, component, purpose or activity from any other Ministry or Department of the Government of India or State Government or their agencies.

6. It is certified that applicant's sister concern (s)/ related company / group company/firms as well as the applicant itself has not availed any financial assistance for a food processing project in the past from MFPI [if availed, the details shall be furnished separately].

7. I also solemnly affirm/undertake that the proposed project components in the application are a completely new activity and not a pre-existing activity or any component thereof.

8. In case of concealment of any facts in this regard, the MoFPI would have right to reject/ cancel my application/project out right at any stage.

Appendix-VI

UNDERTAKING
[Refer Para 12.1 (m)]

I ..... (Name of the Lead Promoter/Director/ Partner/ Proprietor etc.) Son of Mr..... (Father's name) resident of ..... (Residential address) do hereby solemnly affirm and declare/undertake as under:

1. That I am promoter/ director/ partner/ proprietor of M/s..... (name of applicant) having its Registration no. .....and Registered Office at ..... (office address of applicant).

2. I hereby make application and I am duly authorized in my own right/by management vide its resolution no. .....dated.....to apply and sign all required documents including this undertaking on behalf of company/partnership firm/cooperative society etc. named as .....; and am fully aware of the facts relating to the setting up of project at Survey/ Plot No....., Village.....,Tehsil.....,District.....,State....., PIN code .....(location of the main facility) for.....(activities to be undertaken by project) and application is being made to the Ministry of Food Processing Industries (MoFPI) under the Central Sector Scheme for Creation of Backward and Forward Linkages.

3. That the term and conditions of the above scheme of the MoFPI under which an application is made by the applicant have been properly read and understood by me and I affirm that the project/ proposal comply with all the terms and conditions of the approval letter and provisions enshrined in the scheme guidelines.

4. That the proposed activities to be undertaken by the project/proposal are covered under the above scheme of MoFPI and no part of the scheme/infrastructure of the project is designed or assigned to be used for any activity other than the activities specified in the application at present or in the near future.

5. It is certified that ..... (name of applicant) has not obtained or applied for grants for the same project, component, purpose or activity from any other Ministry or Department of the Government of India or State Government or their agencies.

6. It is certified that applicant's sister concern (s)/ related company / group company/firms as well as the applicant itself has not availed any financial assistance for a food processing project in the past from MFPI [if availed, the details shall be furnished separately].

7. I also solemnly affirm/undertake that the proposed project components in the application are a completely new activity and not a pre-existing activity or any component thereof.

8. In case of concealment of any facts in this regard, the MoFPI would have right to reject/ cancel my application/project out right at any stage.

9. I will meet any shortfall in means of finance due to less admissibility of grant or any future reduction in grant-in-aid or any escalation caused in the cost of the project.

10. I shall not dispose-off or encumber or utilize the assets created wholly or substantially out of government grant for purpose other than those for which they have been sanctioned, without obtaining the prior approval of the sanctioning authority of grant-in- aid.

11. In case of non-implementation/ delayed implementation of the project the Ministry will have absolute right in cancelling the approval granted and also recall the grant released, if any, along with interest as per the scheme guidelines.

12. In case of failure to operate the project for at least three years after commencement of commercial operation, I shall return the entire grant-in-aid with interest @ 10% per annum.

13. User charges/hiring rates of the facilities created under the project will be disseminated to the public including uploading of the same on the website of the project/ organization. A copy of the same will also be made available to the Ministry.

14. I undertake that all the information furnished in the application and the DPR with respect to the eligibility conditions, etc. are true and correct to the best of my knowledge and belief and nothing material has been concealed therefrom.

15. I also undertake that in the event of any information or facts furnished by me are found to be incorrect or material information concealed, during the course of implementation of the project or subsequent to implementation, the Ministry of Food Processing Industries may take action as per the provisions of scheme guidelines and/or as per the law of the land, as deemed fit and appropriate in the circumstances.

Date: _____ Signature of the Lead Promoter

Place: _____

9. I will meet any shortfall in means of finance due to less admissibility of grant or any future reduction in grant-in-aid or any escalation caused in the cost of the project.

10. I shall not dispose-off or encumber or utilize the assets created wholly or substantially out of government grant for purpose other than those for which they have been sanctioned, without obtaining the prior approval of the sanctioning authority of grant-in- aid.

11. In case of non-implementation/ delayed implementation of the project the Ministry will have absolute right in cancelling the approval granted and also recall the grant released, if any, along with interest as per the scheme guidelines.

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14. I undertake that all the information furnished in the application and the DPR with respect to the eligibility conditions, etc. are true and correct to the best of my knowledge and belief and nothing material has been concealed therefrom.

15. I also undertake that in the event of any information or facts furnished by me are found to be incorrect or material information concealed, during the course of implementation of the project or subsequent to implementation, the Ministry of Food Processing Industries may take action as per the provisions of scheme guidelines and/or as per the law of the land, as deemed fit and appropriate in the circumstances.

Date: _____ Signature of the Lead Promoter

Place: _____