

NON-NEGOTIABLES FOR IMPLEMENTATION OF MIDH SCHEMES 2014 - 15

1. Identification of beneficiaries should be done in Grama sabha through selection committee as per guidelines given under each scheme.
2. Identification of beneficiaries as per targets allotted to be completed as per season only.
3. Preference may be given to small and marginal farmers, SC /ST/woman farmers.
4. It should be ensured that as per the directives of SC, ST ACT, **16.41 % and 6.99% funds are to be targeted for SC and ST farmers respectively** under SCP & TSP. **33% of budget allocation** should be earmarked exclusively **for women** beneficiaries/ farmers.
5. Only Cluster approach will be adopted with a minimum area of 10 Ha in each cluster for one crop for easy monitoring.
6. After identification of beneficiaries under each scheme training to be organized at field level.
7. Approval of District Mission Committee (DMC) is must for issue of Administration sanctions for all the SHM schemes under MIDH.
8. **Filing of Applications in Hortnet is mandatory for all Components for release of funds through CFMS mode. Every aspect from filing of applications, progress reports to releases shall be through Hortnet Only.**
9. The plantation should be taken up under in cluster mode only, assured irrigation source & integration with Micro Irrigation is non-negotiable.
10. Plant material for Area expansion programme has to be procured on priority from the accredited Govt. nurseries/ SAUs / ICAR institutes.
11. Awareness programmes should be organized under Post harvest management, to avail the assistance by forming farmer commodity groups.
12. The Projects proposed under Post Harvest Management should be linked up with farmers farms, corporate retail outlets, processing units and exporters so that the losses / wastage of the horticulture produce are minimized and all the details shall be incorporated in the project proposals.
13. The projects should clearly indicate the benefits accrued to the SF/ MF.
14. Progress of the project based activities has to be submitted time to time.
15. Proposal for project based components should be sent after approval of DMC and such proposals should be sent to Head office as early as possible.

16. To ensure transparency separate account should be maintained in the name of Assistant Director of Horticulture at district level for collection of non subsidy.
17. All the identified beneficiaries should have a valid bank account. Otherwise they have to open a bank account. The bank account number, IFSC code etc have to be verified by the ADH/HO concerned personally before updating in Hortnet.
18. The assistance will be provided to the beneficiaries through online transfer from the State Head quarters through HORTNET.
19. ADHs should ensure the bills produced by the beneficiaries are from the registered firms/companies, before submitting release proposal to head office.
20. The assistance will be given to only one beneficiary in the family.
21. It is the responsibility of ADH to update the progress reports on 2nd of every month. It is compulsory.
22. All the schemes implemented bounded hard copies of all the schemes implemented in the districts along with the photographs have to be kept in office in record room. Photographs have to be uploaded in website.
23. It is mandatory to submit the success stories / case studies of each year along with photographs.
24. Bi monthly district monitoring committee meeting to be convened under the chairmanship of District Collector with all the members.
25. It is mandatory to take approval for implementing all the schemes and releases from the DMC.

**GUIDELINES FOR SELECTION OF BENEFICIARIES FOR DIFFERENT SCHEMES BEING
IMPLEMENTED UNDER MIDH 2014-15**

GENERAL: (Common to all components and activities)

1. Potential Villages are to be identified (species & crop wise) in cluster mode with convergence of allied Departments.
2. Wide publicity to be given in the above identified locations / areas on benefits / facilities being provided by the department through local news papers, electronic media, pamphlets, display on the notice board of Z.P.Ps / M.P.Ps / Village Panchayats.
3. Approved schemes, assistance provided and locations identified are to be clearly explained in the meeting of DRC / Z.P.Ps / M.P.Ps and other coordination meetings with allied departments.
4. Success stories to be sent to DPRO weekly once for publicity.
5. The selected farmers shall be explained the package of practices to be adopted for the species selected under all schemes with literature.
6. Due preference shall be given to SF / MF, STs, SCs and Women as per the norms in selection process. There should not be any deviations.
7. During selection and implementation of scheme care should be taken to ensure **16.41 % and 6.99 % funds** are to be allocated for **SC/ST farmers** respectively and 33% of the budget allocation should be earmarked exclusively for women beneficiaries. It is mandatory no deviation is permitted.
8. **Filing of Applications through Hortnet is mandatory for all Components.**
 - a) The beneficiaries shall apply to the Horticulture officer of the area concerned or DDHs / ADHs of concerned district in the format prescribed duly affixing the latest photograph along with a copy of passbook or certificate from the village Revenue Officer, bank pass book Xerox copy source of irrigation etc. on or before the date prescribed for any component under all the activities / schemes.
 - b) The Horticulture Officers (Extension)/ Horticulture Consultants / Field consultants are responsible for filing of applications pertaining to their respective jurisdiction and completion of the process till acceptance stage in Hortnet.

- c) ADHs should ensure that all the Horticulture Officers in the District are trained with the help of District NIC personnel. As NIC is executing the project, instructions are issued to their District level officers for providing technical guidance.
 - d) It is the responsibility of the ADH concerned to verify all the details filled in by the HOs and approve the eligible applications without any wrong entries.
 - e) After approval by the ADH, the webpage pertaining to the list of applicants to be obtained Administrative sanction should be sent to the District Mission Committee for approval. And ink signed copy of the webpage should be sent to Head office along with minutes of DMC approval.
 - f) Soon after execution / grounding of the scheme , the real time photographs of the scheme implemented in three stages i.e., before execution, during execution & after execution should be uploaded in the Hortnet.
 - g) After receipt of real time photographs on the Hortnet, the webpage pertaining to the list of beneficiaries for release of eligible subsidy should be submitted to DMC for approval. And ink signed copy of the webpage should be sent to Head office for release of funds.
 - h) After DMC approval Administrative sanction proceedings to be issued to the concerned, a copy of the proceeding in Telugu should be sent to the farmer with the unit cost subsidy details etc.,
9. The HOs / ADHs shall hold the village wise meetings involving progressive farmers, gram sarpanch and village secretary and finalize the list based on the norms prescribed for different schemes implemented in the districts.
10. After selection and verification of the required documents the list of beneficiaries shall be placed before DMC for approval after approval by the DMC, administrative sanction to the beneficiary shall be issued through the District Collector only.
11. DMC approval has to be obtained by the District Committee for additions /deletions to the approved beneficiary list.
12. Every two months DMC meeting should be organized and minutes to be sent to SHM for record purpose and release of funds etc.,

PLANTATION INFRASTRUCTURE & DEVELOPMENT

Production of planting material

i) Small Nursery (1 ha)

Total Unit Cost: Rs. 15.00 lakh/ha

100% Unit cost amount to public sector and in case of private sector, credit linked back-ended subsidy of cost, subject to a maximum of Rs. 7.50 lakh/unit, as project based activity. Each nursery will produce a minimum of 25,000 numbers of mandated perennial vegetatively propagated fruit plants/tree spices/plantation crops per year, aromatic plants, duly certified for its quality by concerned agency.

INFRASTRUCTURE PROPOSED FOR DEVELOPMENT OF SMALL NURSERY

Sl. No	Name of the component	Estimated Cost (Rs. in lakhs)	Subsidy allowed 100% under public sector (Rs. in lakhs)	Subsidy allowed 50% under private sector (Rs. in lakhs)
1	Establishment of scion block (1.50 Acr) required crop wise, variety wise plant material will be procured from Research Station only.	2.00	2.00	1.00
2	Installation of drip irrigation for new scion blocks / existing scion block or orchards	0.60	0.60	0.30
3	Digging of bore well (Depth in meters) & Purchase of submersible pump	2.00	2.00	1.00
4	Erection of shade net 500 sq.mt @ Rs. 710 per sq. mt.	3.55	3.55	1.78
5	Vermicompost unit	0.60	0.60	0.30
6	Electrification of farm to the extent required	2.00	2.00	1.00
7	Land preparation if required	2.00	2.00	1.00
8	Construction of store room	2.25	2.25	1.13
	Total:	15.00	15.00	7.50

- The beneficiary has to establish the proposed infrastructure within the total cost of the operational guidelines of MIDH.
- Mother plants has to be procured from ICAR Institutions/ Research Stations only.
- The beneficiary has to produce the standard quality plant material.
- The beneficiaries shall apply to ADHs (as per the district targets only) in the prescribed format along with the Pattadar Passbook or Lease Agreement document executed for 10 years along with the certificate issued by Tahsildar / Panchayat Secretary for proof of land with bank consent letter.
- The beneficiary shall also enclose the water & soil analysis report from the approved lab.
- ADH should verify the site physically.
- The beneficiary shall also enclose the bank consent for release of loan amount for establishment of nursery under credit linked back-ended subsidy.
- Stage wise photos (i.e, before, during and after the completion of work) should be uploaded in Hortnet before release of payment.
- After the inspection of the site by the concerned H.O. and ADH, the proposal with the recommendations will be placed before the District Level Executive Committee for sanction of the proposals for Establishment of Nurseries.
- After consideration by the District Level Executive Committee or District collector the same will be forwarded to O/o State Horticulture Mission
- The same proposal will be placed before the State Level Executive Committee for sanction of the proposals for Establishment of Nurseries. Then only sanction proceedings will be issued.
- Administrative sanction orders will be communicated to the beneficiary / District Officer concerned and to the Bank which is providing the loan amount i.e. 50% of project cost.
- The beneficiary should submit the certificate consisting of Non-Submergence of that particular survey no of the land where the nursery is proposed to be taken up.
- The subsidy amount will be released in two equal installments i.e., 1st installment will be released after completion of 50% of the works and 2nd installment will be released after establishment of nursery and after physical verification of the nursery by the ADH & Technical Team and submission of proposal to NHB for accreditation under copy marked to Mission Director. Then only 2nd installment release will be considered.
- All the components which are proposed for development of nurseries are mandatory for release of subsidy.

**List of documents to be submitted by the applicant for Establishment of Nurseries
under Private Sector:**

- Application form with full details with latest photograph of the applicant.
- Land records (Pattadar pass book / pahani given by MRO)
- Sanction letter issued by the bank for credit linked back-ended subsidy.
- The proposed infrastructure for obtaining the subsidy along with the estimates as per the guidelines (Project proposal).
- Progeny / scion block is mandatory.
- Estimates of civil structures – Prepared by any State Government Engineering Depts.
- The video and photographs of the farm should be produced to the department by the beneficiary before and after the establishment of nursery.
- Annual plan for the production of plant material species-wise has to be submitted to Mission Director / DMC. Monthly progress report to be submitted by the farmer to DMC / SHM.

ii) Upgrading nursery infrastructure to meet accreditation norms

Total Unit Cost: Rs. 10.00 lakh/nursery of 4 ha

100% to public sector and 50% of cost to private sector subject to a maximum of Rs. 5.00 lakh/nursery. The infrastructure facilities will include establishment of

1. Hot bed sterilization of media, Working shed, Virus indexing facility (for citrus & apple), Hardening chamber/net house, Mist chamber, Establishment of Mother Block, Irrigation and fertigation facility/unit.

2. The subsidy will be worked out as per prorated basis.

INFRASTRUCTURE PROPOSED FOR UPGRADING NURSERY INFRASTRUCTURE TO MEET ACCREDITATION NORMS

Sl. No	Name of the component	Estimated Cost (Rs. in lakhs)	Subsidy allowed 100% under public sector (Rs. in lakhs)	Subsidy allowed 50% under private sector (Rs. in lakhs)
1	Hot bed sterilization of media	1.00	1.00	0.50
2	Working shed 10x10x10 feet	1.40	1.40	0.70
3	Virus indexing facility	1.00	1.00	0.50
4	Hardening chamber	1.00	1.00	0.50
5	Mist chamber	0.50	0.50	0.25
6	Establishment of scion block (1.50 Acre) required crop wise, variety wise plant material will be procured from Research Station only.	2.00	2.00	1.00
7	Installation of drip irrigation for new scion block or orchards and fertigation	0.60	0.60	0.30
8	Water Harvesting system for storage of water in 20mx20mx3m ponds/tube wells/dug wells @ Rs.100 cubic meters / Water Storage tank (Capacity 2.0 lakhs litre capacity)	1.50	1.50	0.75
9	Fencing if required	1.00	1.00	0.50
Total:		10.00	10.00	5.00

- The existing nursery should have minimum area of 4 ha. for the component Upgrading of Nursery Infrastructure.
- All the components which are proposed for upgrading of nursery infrastructure to meet accreditation norms are mandatory for release of subsidy.
- Visit of ADH & Technical team to the nursery is must.

ESTABLISHMENT OF TISSUE CULTURE UNITS

Objective:

- To encourage production and supply of good quality planting material in private sector by setting up TC lab and to generate employment.
- Sanction of TC unit as per the norms of MIDH under Private Sector, will be considered by State SLEC meeting.

i) Strengthening of existing Tissue Culture (TC) units

Total Unit Cost: Rs. 20.00 lakh /unit

100% of cost to public sector and in case of private sector, credit linked back ended subsidy @ 50% of cost.

ii) Setting up of new TC Units.

Total Unit Cost: Rs. 250.00 lakh/unit

100% of total cost to public sector and in case of private sector, credit linked back ended subsidy @ **40%** of cost i.e. Rs. 100.00 lakhs/unit. Each TC unit will produce a minimum of **25** lakh plants/year of mandated crops, duly hardened, for which protocols are available for commercial use. The assistance will be released in two installments to the concerned beneficiary after physical verification of the progress of work by the District Officers / Technical Teams.

List of Documents to be submitted by the applicants for TC Unit

1	Application form of the applicant/promoters
2	Basic data sheet with complete technical specifications.
3	Detailed project report as per MIDH guidelines.
4	Partnership deed
5	Firm Registration certificate/certificate of Incorporation
6	Bank sanction letter along with appraisal report.
7	Approval from Gram Panchayat/Municipality /corporation.
8	Approval from Pollution Control Board Acknowledgement
9	SSI Registration certificate
10	Fire Department approval with drawings
11	Pan card taken on company name (Xerox copy).
12	Electricity approval

13	KYC documents of all the partners
14	VAT/CST Registrations.
15	Land conversion. (for one acre only)
16	DHM approval (District Collector)
17	Affidavit
18	Land documents (sale deed / Lease deed Agreement) for 10 years along with certificate issued by Tahsildar / Panchayat Secretary for proof of land
19	Land records (Pattadar pass book / pahani given by MRO).
20	The proposed infrastructure for obtaining the subsidy along with the estimates as per the guidelines (Project).
21	Estimates of civil structures – Prepared by any State Government Engineering Depts.
22	Soil Testing report
23	Water Testing report

- The beneficiary has to establish the proposed infrastructure with total cost of Rs.250.00 lakhs as per the operational guidelines of MIDH.
- The beneficiary has to produce the standard quality plant material.
- The beneficiaries shall apply to ADHs in the prescribed format along with the Pattadar Passbook or Lease Agreement document executed for 10 years along with the certificate issued by Tahsildar / Panchayat Secretary for proof of land.
- The beneficiary shall also enclose the water & soil analysis report from the approved lab.
- The beneficiary shall also enclose the bank consent for release of loan amount for establishment of nursery under credit linked back-ended subsidy.
- After the inspection of the site by the concerned H.O. and ADH, the proposal with the recommendations will be placed before the District Level Executive Committee for sanction of the proposals for TC Lab.
- After consideration by the District Level Executive Committee or District collector the same will be forwarded to O/o State Horticulture Mission.
- The same proposal will be placed before the State Level Executive Committee for sanction of the proposals.
- After consideration by the State Level Executive committee of State Horticulture Mission, the same will be sent to NHM, for approval in Empowered Committee Meeting, New Delhi.

- After approval by the EC meeting administrative sanction orders will be communicated to the beneficiary / District Officer concerned and to the Bank which is providing the loan amount i.e. 50% of project cost.
- The subsidy amount will be released in two equal installments i.e., 1st installment will be released after completion of 50% of the works and 2nd installment will be released after establishment of TC Lab and after physical verification of the TC lab by the District Officer / Technical Teams.

ESTABLISHMENT OF SEED INFRASTRUCTURE

i) Seed infrastructure (for handling, processing, packing, storage etc. of seeds meant for use as seed material for cultivation of horticulture crops)

Total Unit Cost: Rs. 200.00 lakh

100% of cost to public sector and in case of private sector, credit linked back subsidy @ 50% of cost of project.

List of Documents to be submitted by the applicants for Establishment of Seed Processing Unit.

1	Application form of the applicant/promoters
2	Basic data sheet with complete technical specifications.
3	Detailed project report as per MIDH guidelines.
4	Partnership deed
5	Firm Registration certificate/certificate of Incorporation
6	Bank sanction letter along with appraisal report.
7	Approval from Gram Panchayat/Municipality /corporation.
8	Approval from Pollution Control Board Acknowledgement
9	SSI Registration certificate
10	Fire Department approval with drawings
11	Pan card taken on company name (Xerox copy).
12	Electricity approval
13	KYC documents of all the partners
14	VAT/CST Registrations.
15	Land conversion. (for one acre only)
16	DHM approval (District Collector)
17	Affidavit
18	Land documents (sale deed / Lease deed Agreement) for 10 years along

	with certificate issued by Tahsildar / Panchayat Secretary for proof of land
19	Land records (Pattadar pass book / pahani given by MRO).
20	The proposed infrastructure for obtaining the subsidy along with the estimates as per the guidelines (Project).
21	Estimates of civil structures – Prepared by any State Government Engineering Depts.
22	Soil Testing report
23	Water Testing report

- The beneficiary has to establish the proposed infrastructure with total cost of Rs.200.00 lakhs as per the operational guidelines of MIDH.
- The beneficiary has to produce the standard quality plant material.
- The beneficiaries shall apply to ADHs in the prescribed format along with the Pattadar Passbook or Lease Agreement document executed for 10 years along with the certificate issued by Tahsildar / Panchayat Secretary for proof of land.
- The beneficiary shall also enclose the water & soil analysis report from the approved lab.
- The beneficiary shall also enclose the bank consent for release of loan amount for establishment of nursery under credit linked back-ended subsidy.
- After the inspection of the site by the concerned H.O. and ADH, the proposal with the recommendations will be placed before the District Level Executive Committee for sanction of the proposals for Seed Processing Unit.
- After consideration by the District Level Executive Committee or District collector the same will be forwarded to O/o State Horticulture Mission.
- The same proposal will be placed before the State Level Executive Committee for sanction of the proposals.
- After consideration by the State Level Executive committee of State Horticulture Mission, the same will be sent to NHM, for approval in Empowered Committee Meeting, New Delhi.
- After approval by the EC meeting administrative sanction orders will be communicated to the beneficiary / District Officer concerned and to the Bank which is providing the loan amount i.e. 50% of project cost.
- The subsidy amount will be released in two equal installments i.e., 1st installment will be released after completion of 50% of the works and 2nd installment will be released after establishment of Seed Processing Unit and after physical verification of the Seed Processing Unit by the District Officer / Technical Teams.

ESTABLISHMENT OF NEW GARDENS

Objective:

- To bring additional area under identified Fruit crops (Perennial/ Non- perennial) with improved varieties / hybrids.

Non-negotiable under SHM 2014-15 for the Component Area Expansion

1. District Horticulture Mission should ensure that Area Expansion (Perennial fruits / Non-perennial fruits) programme to be implemented on cluster approach in a contiguous area, instead of doing it in scattered & unplanned manner. This approach will help in providing both backward and forward linkages and enable the Dept., to do effective extension service.
2. Minimum area per each block should be above 10 Ha for better monitoring.
3. New clusters & new beneficiaries shall be selected under these programmes as per area specific and climate specific crops.
4. The assistance under these components shall **not** be extended to the beneficiaries already covered during previous years. The ADHs & HOs should be cautious while selecting the beneficiaries.
5. The beneficiary selection need to be done in most transparent manner by conducting Gramasabhas and the list should invariably registered in Hortnet and it should be approved by District Mission Committee. A copy of the same in telugu should be sent to the farmers showing the details of component wise amount provided.
6. Coverage of SC/ST & Women farmers as per the prescribed ratio is minimum mandatory requirement under these components any deviation cannot be permitted.
7. Horticulture Officers of the concerned area should obtain applications from beneficiaries along with photograph of self and without plantation in the existing format prescribed.
8. The farmers who are having assured source of irrigation and power supply are only selected & Micro irrigation should be integrated for better survival of plantations.
9. The farmers can apply or register directly on online through Hortnet or in person by application.

10. Land holding of the farmers should be certified by Horticulture Officers on the basis of the original Pattadar pass book or Adangal signed by MRO.
11. The HO concerned should maintain Register for recording the details of identified beneficiaries i.e. land details/crop/variety/source of plant material/ date of planting /inputs supplied/non subsidy particulars/Bank account No. and IFSC code etc.
12. ADH shall organize training programmes to the beneficiaries identified under Establishment of New Gardens, on all aspects of Package of practices followed for specific.
13. HO should inspect 100% fields identified under his jurisdiction before sanction of the scheme and he himself should satisfy on soil suitability and availability of water and authorized power connection before recommending. Whereas ADH should inspect a minimum of 25% of the identified or sanctioned fields under his jurisdiction prior to the sanction.
14. Selection, documentation and Hortnet registration process should be completed in a time bound manner and seasonality must be adhered to, for plantation, distribution & utilization of inputs at any cost.
15. Before permitting the beneficiaries to start land preparation, pitting etc, the ADH should ensure to take approval of DMC for the selected beneficiaries.
16. ADH should ensure proper documentation and registration in Hortnet of various stages of implementation (viz., land preparation / pitting, planting & installation of micro irrigation system etc. along with necessary photographs) by the HOs concerned.
17. Intercropping shall be encouraged in all perennial orchards with region specific intercrop as they contribute to soil fertility and income during gestation period. Necessary provision for assistance has been made in the unit cost.
18. After the completion of plantation, HO concerned should inspect the fields and collect all the required bills / invoices / vouchers from the concerned farmers, and upload in the Hortnet after proper scrutiny.
19. All such uploaded bills should be forwarded to the ADH login. In turn the ADH will compile all the bills in his login and obtain financial approval of DMC. After approval of DMC the same may be forwarded to ED login for release of payment.
20. **The assistance will be provided to the beneficiaries / agency / firm through online transfer from the State Head quarters through HORTNET in CFMS mode.**

Integrated with drip irrigation:

1. Empanelled / Identified drip irrigation firms list available with APMIP will be given to the concerned ADHs.
2. The farmer will select the MI companies from the empanelled / identified list as per his choice. HO should also inspect the identified farmer's field and ascertain the feasibility of available resources etc.,
3. The concerned firms will inspect the farmer's field and prepare Bills of Quantities (BOQ) and the same will be furnished to the concerned farmer. The responsibility of Drip installation lies with the farmer.
4. As per the suggestion of the selected MI Company the farmer should take up trenching and the company will complete the installation as per the BOQ and layout plan. Entire amount towards installation of MI system shall be borne by the farmer.
5. The HO should collect the invoice raised by the company for installation along with all requisite documents for uploading of the same in Hortnet.
6. After completion of the drip installation and plantation concerned HO and MI engineer should inspect the fields, verify the components mentioned in the invoice and working condition of the drip irrigation and certify the invoices along with the field photos.
7. Prior to recommendation for sanction the ADH should inspect randomly 25% of such installations.
8. All such uploaded bills should be forwarded to the ADH login. In turn the ADH will compile all the bills in his login and obtain financial approval of DMC. After approval of DMC the same may be forwarded to ED login for release of payment.
9. **The assistance will be provided to the beneficiaries / agency / firm through online transfer from the State Head quarters through HORTNET in CFMS mode.**

A. Supply of Plant Material:

1. Priority should be given for supply of plant material from tied-up Horticultural farms / Research stations of ANGRAU / Dr. YSRHU.
2. However, farmers shall be permitted to purchase plant material from private nurseries under following circumstances.
3. Where ever farmers choice variety is not available in tied-up Horticultural farms / Research stations.
4. In cases where short fall of plant material is identified in tied-up nurseries
5. In case of crops for which tied-up arrangement is not made.

6. In cases when plant material is supplied from Department Horticultural farms, the assistance amount towards plant material shall be directly released to the Horticultural farms by the ADHs duly obtaining necessary bills/invoices from the farm in-charge.
7. In cases when plant material is purchased by the farmers from Research stations or from Pvt. Nurseries, the ADH shall release the plant material assistance to the farmers through Hortnet as per the certification of HO concerned on bills/invoices submitted by the farmers.
8. In case of TC Banana, the list of accredited Labs with DBT, GOI under NCS - TCP **shall be given to the farmers for procuring the plant material.**
9. The beneficiary shall procure the plant material by incurring full cost from T.C. Labs out of his own choice from the approved list and assistance(cash) will be transferred through Hortnet to the beneficiaries account.
10. Before releasing plant material assistance to beneficiary, HO should certify the plantation of the beneficiary along with photograph.
11. No amounts shall be paid to the private nurseries directly.

B. Inputs like Vermicompost, FYM, Irrigation, Inter crop, Labour Charges, etc.,

Assistance pertaining to Vermicompost, FYM, irrigation, inter crop, Labour Charges, fertilizers (organic and inorganic) and other inputs like bio fertilizer, bio-pesticides, PP chemicals, Micro nutrients etc., shall be given to the farmers in the form of cash through online transfer through HORTNET.

C. Implements

The prices finalized for the supply of garden tools under Area Expansion for the year 2013-14 is applicable for the year 2014-15 also.

Norms and Pattern of Assistance for Area Expansion

- The Cost Norms and Pattern of Assistance under MIDH for Area Expansion Programme is given below:

Sl. No.	Item	Max. permissible cost	Pattern of Assistance
Establishment of new gardens (Area Expansion)			
1)	Fruits		
A)	Cost intensive crops (for a maximum area of 4 ha per beneficiary)		
	Banana (TC) Integrated package with drip irrigation.	Rs. 3.00 lakh/ha	Maximum of Rs. 1.20 lakh/ha (40 % of cost) for meeting the expenditure on planting material and cost of material for drip system, INM/IPM etc., in 2 installments (75:25).
	Papaya Integrated package with drip irrigation.	Rs. 2.00 lakh/ha.	Maximum of Rs. 0.80 lakh/ha (40% of the cost) for meeting expenditure on planting material, drip irrigation and cost of material for INM/IPM, in 2 installments (75:25).
	Ultra high density Guava Integrated package with drip irrigation	Rs. 2.00 lakh/ha.	Maximum of Rs. 0.80 lakh/ ha. (40% of cost) for meeting the expenditure on planting material and cost of material for drip system, INM/IPM, and canopy management in 3 installments of 60:20:20 subject to survival rate of 75% in 2nd year and 90% in 3rd year).
	High density planting (mango, pomegranate etc) Integrated package with drip irrigation	Rs. 1.50 lakh /ha	Maximum of Rs. 0.60 lakh per ha. (40% of cost) for meeting the expenditure on planting material, cost of drip system INM/IPM, canopy management etc., in 3 installments of 60:20:20 subject to survival rate of 75% in 2nd year and 90% in 3rd year).
B)	Fruit crops other than cost intensive crops using normal spacing		
	Sweet Orange and Acid lime Integrated package with drip irrigation	Rs. 1.00 lakh/ha	Maximum of Rs. 0.40 lakh/ ha. (40% of cost) for meeting the expenditure on planting material, cost of drip system, INM/IPM, canopy management etc in 3 installments of 60:20:20 subject to survival rate of 75% in 2nd year & 90% in 3rd year for perennial crops and for non perennial crops in 2 installments of 75:25.

Year wise, sub-component wise Pattern of Assistance for different crops under Area Expansion is detailed below and the same should be followed scrupulously.

PATTERN OF ASSISTANCE FOR MANGO INTEGRATED WITH DRIP (5X5M) FOR 1 HA.

No. of plants 400 / ha.

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)			Eligible Subsidy (in Rs.)
			1st year	2nd year	3rd year	
1	Plant Material	18000.00	7000.00	216.00	0.00	7216.00
2	Inputs					0.00
i	FYM	23000.00	0.00	0.00	0.00	0.00
ii	Neem Cake/ Vermicompost		2440.00	0.00	0.00	2440.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		0.00	2064.00	2280.00	4344.00
iv	PP Chemicals/ Bio pesticides		0.00	1000.00	1000.00	2000.00
v	Implements	0.00	400.00	0.00	0.00	400.00
Sub-Total		41000.00	9840.00	3280.00	3280.00	16400.00
3	Drip Irrigation	33900.00	13560.00	0.00	0.00	13560.00
Sub-Total		33900.00	13560.00	0.00	0.00	13560.00
Total		74900.00	23400.00	3280.00	3280.00	29960.00

PATTERN OF ASSISTANCE FOR GUAVA (3X3M) INTEGRATED WITH DRIP FOR 1 HA.

No. of plants 1111 / ha.

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)			Eligible Subsidy (in Rs.)
			1st year	2nd year	3rd year	
1	Plant Material	33330.00	7000.00	920.00	0.00	7920.00
2	Inputs					0.00
i	FYM	40000.00	1920.00	0.00	0.00	1920.00
ii	Neem Cake/ Vermicompost		2779.00	0.00	0.00	2779.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		4000.00	2500.00	2500.00	9000.00
iv	PP Chemicals/ Bio pesticides		1500.00	2446.00	3366.00	7312.00
v	Implements		400.00	0.00	0.00	400.00
Sub-Total		73330.00	17599.00	5866.00	5866.00	29331.00
3	Drip Irrigation	58400.00	23360.00	0.00	0.00	23360.00
Sub-Total		58400.00	23360.00	0.00	0.00	23360.00
Total		131730.00	40959.00	5866.00	5866.00	52691.00

PATTERN OF ASSISTANCE FOR SWEET ORANGE/ KINNOW/ MANDARIN (6X6M)
INTEGRATED WITH DRIP FOR 1 HA.

No. of plants 278 / ha.

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)			Eligible Subsidy (in Rs.)
			1st year	2nd year	3rd year	
1	Plant Material	10008.00	3000.00	500.00	500.00	4000.00
2	Inputs					0.00
i	FYM	30000.00	1000.00	0.00	0.00	1000.00
ii	Neem Cake/ Vermicompost		1000.00	0.00	0.00	1000.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		3601.00	2500.00	2500.00	8601.00
iv	PP Chemicals/ Bio pesticides		600.00	701.00	701.00	2002.00
v	Implements		400.00	0.00	0.00	400.00
Sub-Total		40008.00	9601.00	3701.00	3701.00	17003.00
3	Drip Irrigation	33900.00	13560.00	0.00	0.00	13560.00
Sub-Total		33900.00	13560.00	0.00	0.00	13560.00
Total		73908.00	23161.00	3701.00	3701.00	30563.00

PATTERN OF ASSISTANCE FOR ACID LIME (6X6M) INTEGRATED WITH DRIP FOR 1 HA.

No. of plants 278 / ha.

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)			Eligible Subsidy (in Rs.)
			1st year	2nd year	3rd year	
1	Plant Material	10008.00	3000.00	500.00	500.00	4000.00
2	Inputs					0.00
i	FYM	30000.00	1000.00	0.00	0.00	1000.00
ii	Neem Cake/ Vermicompost		1000.00	0.00	0.00	1000.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		3601.00	2500.00	2500.00	8601.00
iv	PP Chemicals/ Bio pesticides		600.00	701.00	701.00	2002.00
v	Implements		400.00	0.00	0.00	400.00
Sub-Total		40008.00	9601.00	3701.00	3701.00	17003.00
3	Drip Irrigation	33900.00	13560.00	0.00	0.00	13560.00
Sub-Total		33900.00	13560.00	0.00	0.00	13560.00
Total		73908.00	23161.00	3701.00	3701.00	30563.00

PATTERN OF ASSISTANCE FOR POMEGRANATE (5X5M) INTEGRATED WITH DRIP
FOR 1 HA.

No. of plants 400 / ha.

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)			Eligible Subsidy (in Rs.)
			1st year	2nd year	3rd year	
1	Plant Material	26680.00	8000.00	2000.00	669.00	10669.00
2	Inputs					0.00
i	FYM	40000.00	1000.00	0.00	0.00	1000.00
ii	Neem Cake/ Vermicompost		2004.00	0.00	0.00	2004.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		4600.00	2834.00	3400.00	10834.00
iv	PP Chemicals/ Bio pesticides		0.00	500.00	1265.00	1765.00
v	Implements		400.00	0.00	0.00	400.00
Sub-Total		66680.00	16004.00	5334.00	5334.00	26672.00
3	Drip Irrigation	33900.00	13560.00	0.00	0.00	13560.00
Sub-Total		33900.00	13560.00	0.00	0.00	13560.00
Total		100580.00	29564.00	5334.00	5334.00	40232.00

PATTERN OF ASSISTANCE FOR BANANA (1.8X1.8M) INTEGRATED WITH DRIP FOR 1 HA.**No. of plants 3086 / ha.**

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)		Eligible Subsidy (in Rs.)
			1st year	2nd year	
1	Plant Material	52462.00	20902.00	0.00	20902.00
2	Inputs				
i	FYM	50000.00	1500.00	0.00	1500.00
ii	Neem Cake/ Vermicompost		1500.00	2000.00	3500.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		4000.00	7246.00	11246.00
iv	PP Chemicals/ Bio pesticides		837.00	1000.00	1837.00
v	Intercrop		1000.00	0.00	1000.00
vi	Labour Cost		1000.00	0.00	1000.00
Sub-Total		102462.00	30739.00	10246.00	40985.00
3	Drip Irrigation	58400.00	23360.00	0.00	23360.00
Sub-Total		58400.00	23360.00	0.00	23360.00
Total		160862.00	54099.00	10246.00	64345.00

PATTERN OF ASSISTANCE FOR BANANA (1.8X1.8M) WITHOUT DRIP FOR 1 HA.**No. of plants 3086 / ha.**

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)		Eligible Subsidy (in Rs.)
			1st year	2nd year	
1	Plant Material	52462.00	20902.00	0.00	20902.00
2	Inputs				
i	FYM	50000.00	1500.00	0.00	1500.00
ii	Neem Cake/ Vermi Compost		1500.00	2000.00	3500.00
iii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		4000.00	7246.00	11246.00
iv	PP Chemicals/ Bio pesticides		837.00	1000.00	1837.00
v	Intercrop		1000.00	0.00	1000.00
vi	Labour Cost		1000.00	0.00	1000.00
Total		102462.00	30739.00	10246.00	40985.00

PATTERN OF ASSISTANCE FOR PAPAYA (1.8X1.8M) INTEGRATED WITH DRIP FOR 1 HA**No. of plants 3086 / ha.**

Sl. No.	Name of sub-component	Total Cost (in Rs.)	Assistance (in Rs.)	Eligible Subsidy (in Rs.)
			1st year	
1	Plant Material	41655.00	16770.00	16770.00
2	Inputs			
I	FYM	20000.00	727.00	727.00
li	Neem Cake/ Vermicompost		1000.00	1000.00
lii	Inorganic fertilizers, Water Soluble fertilizers, Bio fertilizers and Micro Nutrients		4000.00	4000.00
lv	PP Chemicals/ Bio pesticides		2165.00	2165.00
Sub-Total		61655.00	24662.00	24662.00
3	Drip Irrigation	58400.00	23360.00	23360.00
Sub-Total		58400.00	23360.00	23360.00
Total		120055.00	48022.00	48022.00

PATTERN OF ASSISTANCE FOR COCOA FOR 1 ACRE

Spacing: 3.5 m X 3.5 m

No. of plants per Acre : 200

Sl. No.	Name of the component	Total cost (in Rs.)	Year Wise Assistance			
			1 st Year	2 nd Year	3 rd Year	Total
1	Plant material (@ Rs.3.50/- per plant & including T. charges)	1345	550	87	35	672
	Sub-Total	1345	550	87	35	672
2	Integrated Nutrient Management (INM)					
I	Organic Manures					
A	FYM	1800	300	0	0	300
B	Vermi-compost/City compost	1620	450	180	0	630
li	Inorganic Fertilizers	1530	230	150	350	730
iii	Soluble fertilizers	0	0	0	0	0
iv	Micronutrients	1680	280	280	280	840
	Sub-Total	6630	1260	610	630	2500
3	Integrated Pest management					
I	Plant Protection Chemicals	2805	470	343	375	1188
li	Bio Pesticides	0	0	0	0	0
	Sub-Total	2805	470	343	375	1188
4	Pruning implements (One secateur per farmer per ha.)	340	340	0	0	340
5	Intercrop	0	0	0	0	0
6	Irrigation	500	500	0	0	500
	Grand Total	11620	3120	1040	1040	5200

INPUT PACKAGE FOR MANGO (HIGH DENSITY PLANTATION) PER ACRE

Spacing: 5m X 5m

No. of plants per Acre : 160

Sl.No.	Inputs	Unit	Pkg. size	1 st year	2 nd year	3 rd year
I	Organic Manures					
	Farm Yard Manure	Tones		4	2	2
	Vermicompost / City Compost	Kgs	40 Kg	800	480	640
II	Inorganic Fertilizers					
	S.S.P.	Kgs	50 Kg	400	160	240
	Urea	Kgs	50 Kg	32	64	96
	M.O.P.	Kgs	50 Kg	25	48	73
III	Bio Fertilizers					
	P.S.B.	Kgs	500 gr	8	8	8
IV	Micronutrients					
	Formula - 4	Kgs	Kg	8	13	17
V	Plant Protection Chemicals					
	Chloropyriphos 20% EC	Ltrs	500 ml	3	3	3
	Quinolphos 25% EC	Ltrs	500 ml	2	2	2
	C.O.C. 50% WP	Kgs	500 gr	1	1	1
	Sticking Agent	Ltrs	500 ml	2	2	2
VI	Bio Pesticides					
	<i>T. viride</i> / <i>T.harzianaum</i> / <i>Pseudomonas florescence</i> 1x10 cfu/gm	Kgs	500 gr	8	8	8

INPUT PACKAGE FOR GUAVA (ULTRA HIGH DENSITY PLANTATION) PER ACRE

Spacing 3 m X 3 m

No. of Plants per Acre: 444

Sl. No.	Inputs	Unit	Pkg. size	1 st year	2 nd year	3 rd year
I	Organic Manures					
	Farm Yard Manure	Tones		3	2	3
	Vermi-compost	Kgs	40 Kg	640	320	640
II	Inorganic Fertilizers					
	S.S.P	Kgs	50 Kg	320	118	236
	Urea	Kgs	50 Kg	0	84	167
	M.O.P	Kgs	50 Kg	0	36	72
	19-19-19	Kgs	2 Kg	3	4	6
III	Bio-Fertilizers					
	P.S.B	Kgs	500 gr	3	3	3
	Azospirillum	Kgs	500 gr	3	3	3
IV	Micronutrients					
	Formula-4	Kgs	Kg	3	4	6
V	Plant Protection Chemicals					
	Chloropyriphos 20% EC	Ltrs	500 ml	1	2	2
	Dichlorvas 76% EC	Ltrs	500 ml	1	1	1
	C.O.C. 50% WP	Kgs	500 gr	1	1	1
VI	Bio-pesticides					
	Trichoderma viridae / T. harzianaum	Kg	500 gr	1	1	1
	Pseudomonas florescence 1x10 ¹⁰ cfu/gm	Kg	500 gr	1	1	1

INPUT PACKAGE FOR POMEGRANATE PER ACRE

Spacing: 5 M X 5 M

No. of plants per Acre: 160

Sl. No.	Inputs	Unit	Pkg. size	1 st year	2 nd year	3 rd year
I	Organic Manures					
	Farm Yard Manure	Tones		3	5	5
	Vermi-compost / City Compost	Kgs	40 Kg	400	600	600
II	Inorganic Fertilizers					
	S.S.P.	Kgs	50 Kg	350	200	200
	Urea	Kgs	50 Kg	125	255	255
	M.O.P.	Kgs	50 Kg	40	78	78
III	Bio Fertilizers					
	P.S.B.	Kgs	Kg	5	5	5
IV	Micronutrients					
	Zinc Sulphate (Soil Application)	Kgs	10 Kg	10	10	10
	Boran (Borax 20%)	Kgs	500 gr	1	1	1
	Formula – 7	Kgs	Kg	10	10	10
V	Plant Protection Chemicals					
	Copper Sulphate 50% WP	Kg	Kg	4	4	4
	Lime (Lime sulphate)	Kg	5 kg	4	4	4
	Carbendazim 50% WP	Kg	250 gr	1	0.25	0.25
	Fipronil 5% EC	Lit	250 ml	1	0.25	0.25
	Streptocyclin 10%	Grms	6 gr	36	36	36
	Sticking Agent	Lit	500 ml	1	1	1
VI	Bio Pesticides					
	<i>Trichoderma viride</i> / <i>T. harzianaum</i>	Kgs	Kg	6	6	6
	<i>Pseudomonas florescence</i> 1x10 cfu/gm	Kgs	Kg	6	0	0

INPUT PACKAGE FOR T. C. BANANA PER ACRE

Spacing: 1.8 M X 1.8 M

No. of plants per Acre:1234

Sl. No.	Inputs	Unit	Pkg. size	1 st year	2 nd year
I	Organic Manures				
	Farm Yard Manure	Tones		7.2	7.2
	Vermicompost / City Compost	Kgs	40 Kg	720	720
II	Water Soluble Fertilizers				
	0 : 52 : 34	Kgs	50 Kg	59	50
	13 : 00 : 45	Kgs	50 Kg	458	400
	Urea	Kgs	50 Kg	337	300
III	Bio Fertilizers				
	P.S.B.	Kgs	Kgs	25	25
IV	Micronutrients				
	Formula – 4	Kgs	Kg	4	4
V	Plant Protection Chemicals				
	Chlorothalonil 78.12%	Kgs	500 Gms	0.5	0.5
	Propiconazol 25%	Lts	500 MI.	0.5	0.5
	Carbofuran 3G	Kgs	Kg	15	0
	Sticking Agent	Lit	500 MI	1	1

INPUT PACKAGE FOR PAPAYA PER ACRE

Spacing: 1.8 M X 1.8 M

No. of plants per Acre : 1234

Sl. No.	Inputs	Unit	Pkg. size	1 st year	2 nd year
I	Organic manures				
	FYM	Tons		6	6
	Vermicompost / City Compost	Kgs	40 Kgs	1845	1845
II	Soluble fertilizers				
	0:52:34	Kgs	50 Kgs	100	100
	13:0:45	Kgs	50 Kgs	250	250
	Urea	Kgs	50 Kgs	550	550
III	Bio fertilizers				
	PSB	Kgs	Kgs	25	25
IV	Micro nutrients				
	Formula – 7	Kgs	Kgs	6	6
V	Bio pesticides				
	<i>Verticellium lecanii</i> WP	Kgs	Kgs	1	1
VI	PP chemicals				
	Imidachloprid 17.8% EC	Lts	250 MI	0.5	0.5
	Metalaxyl 8% + Mancozeb 64% WP	Kgs	500 Gms	0.5	0.5
	Dichlorovas 76% EC	Lts	500 MI	0.5	0.5
	Chlorpyriphos 20% EC	Lts	500 MI	1	1
	Sticking Agent	Lts	500 MI	0.5	0.5

**INPUT PACKAGE RECOMMENDED FOR SWEET ORANGE / KINNOW / MANDARIN
(Per Acre)**

Spacing: 6 M X 6 M

No. of plants per Acre : 111

Sl. No	Inputs	Unit	Packing size	1st year	2nd year	3rd year
I.	Organic Manures					
	Farm Yard Manure	Tones		2.5	1.5	2
	Vermicompost / City Compost	Kgs	40 Kg	100	150	200
II	Inorganic Fertilizers					
	S.S.P.	Kgs	50 Kg	160	120	180
	Urea	Kgs	50 Kg	40	80	120
	M.O.P.	Kgs	50 Kg	25	50	75
III	Bio Fertilizers					
	P.S.B.	Kgs	Kg	6	6	6
	VAM	Kgs	Kg	56	0	0
IV	Micronutrients					
	Formula – 4	Kgs	Kg	2	3	4
	Formula – 7	Kgs	Kg	10	14	20
V	Plant Protection Chemicals					
	Chlorophyriphos	Ltrs	500 ml	1	1	1
	Prophenophos / Trizophos	Ltrs	500 ml	0.5	0.5	0.5
	C.O.C.	Kgs	500 grms	0.5	0.5	0.5
	Mancozeb	Kgs	500 grms	0.5	0.5	0.5
	Sticking Agent - Indetron	Ltrs	500 ml	1	1	1
VI	Bio Pesticides					
	Trichoderma	Kgs	Kg	2	2	2
	Pseudomonas	Kgs	Kg	2	2	2

INPUT PACKAGE RECOMMENDED FOR ACID LIME (Per Acre)

Spacing: 6.3 M X 6.3 M

No. of plants per Acre : 111

Sl. No	Inputs	Unit	Packing size	1st year	2nd year	3rd year
I.	Organic Manures					
	Farm Yard Manure	Tones		2.5	1.5	2
	Vermicompost / City Compost	Kgs	40 Kg	200	150	200
II	Inorganic Fertilizers					
	S.S.P.	Kgs	50 Kg	160	120	180
	Urea	Kgs	50 Kg	40	80	120
	M.O.P.	Kgs	50 Kg	25	50	75
III	Bio Fertilizers					
	P.S.B.	Kgs	Kg	6	6	6
	VAM	Kgs	Kg	56	0	0
IV	Micronutrients					
	Formula – 4	Kgs	Kg	2	3	4
	Formula – 7	Kgs	Kg	10	14	20
V	Plant Protection Chemicals					
	Chlorophyriphos	Ltrs	500 ml	1	1	1
	Prophenophos	Ltrs	500 ml	0.5	0.5	0.5
	C.O.C.	Kgs	500 grms	0.5	0.5	0.5
	Mancozeb	Kgs	500 grms	0.5	0.5	0.5
	Streptocyclin	Grms	6 grms	36	54	72
	Sticking Agent - Indetron	Ltrs	500 ml	1	1	1
VI	Bio Pesticides					
	Trichoderma	Kgs	Kg	2	2	2
	Pseudomonas	Kgs	Kg	2	2	2

INPUT PACKAGE FOR COCOA PER ACRE

No. of plants per Acre : 200

Spacing: 3 M X 3 M

Sl.No.	Inputs	Unit	Pkg. size	1 st year	2 nd year	3 rd year
I	Organic Manures					
	Farm Yard Manure	Tones		1	1	1
	Vermi-compost / City Compost	Kgs	40 Kg	200	80	80
II	Inorganic Fertilizers					
	S.S.P.	Kgs	50 Kg	76	25	50
	Urea	Kgs	50 Kg	16	25	50
	M.O.P.	Kgs	50 Kg	16	25	50
III	Micronutrients					
	Formula – 7	Kgs	Kg	20	20	20
IV	Plant Protection Chemicals					
	Chloriphyriphos	Ltrs	500 ml	1	1	1
	Dimethoate	Ltrs	500 ml	0.5	0.5	0.5
	C.O.C.	Kgs	500 gr	0.5	0.5	0.5
	Mancozeb 6.5% + Carbendazim 12% WP	Kgs	500 gr	0.5	0.5	0.5
	Sticking Agent	Ltrs	500 ml	1	1	1

The Indian Institute of Horticultural Research (IIHR) has successfully developed and licensed varieties, hybrids and technologies in Horticulture. The micro nutrients are crop species and found to increase yield by 15-20% on foliar applications at a lower concentrations.

List of licensees of IIHR technology through NRDC, Bangalore (Pheromone trap technology, Micronutrient formulations, sealer and Healer technology and Post harvest technologies)

S.No.	Name of the licensee and contact address	Technology/ies licensed
1	Shri. P. Sundar, Managing Partner, M/s. Nandi Agro Vet, No.12, 1 st Main, 20 th Cross, Doddanna Industrial Estate, Peenya Industrial Area, 2 nd Stage, BANGALORE-560 091, Mobile: 9845497360	Para-pheromone trap technology
2	Shri. Kuppuswamy Raghavendra, Proprietor, M/s. Precision Agro Technologies, #13, SNT Street, Gupta Layout, Ulsoor, BANGALORE-560 008, Mobile: 9845044311	Para-pheromone trap technology
3	Shri. B.V. Subbarayudu, Managing Partner, M/s. Rainbow Seri Agro-Vet Technologies Pvt. Ltd., 7-129-2C, Near Chinna Chowk, Panchayat Office, Jayanagar Colony, CUDDAPAH – 516 002, Mobile: 09848477199	Para-pheromone trap technology, Banana, Vegetable, Mango & Citrus micronutrient formulation technologies, Neem soap and Pongamia soap technology, Healer cum sealer technology
4	Shri. Vinod Purohit, Proprietor, M/s. P.L. Trading Corporation, 180/4, Behind Madhu Printers, Mahadevappa Indl. Estate, Dooravani	Banana, Vegetable, Mango & Citrus micronutrient formulation technologies, Neem soap and Pongamia soap technology

	Nagar Post, BENGALURU-560 016, Mobile: 08088737462	
5	Shri. Lokesh Makam, Managing Director, M/s. Barrix Agro Sciences Pvt. Ltd., Plot No.19, 1 st Stage, TVS Cross, Peenya Industrial Estate, BENGALURU-560 058, Mobile: 09379493088	Para-pheromone trap technology
6	Me D. N. Nagaraj, Senior Scientist Bio Pest Management Pvt Ltd, #47, 6 th cross, Manjunathanagar, Raghuvanahalli Kanakapura Road, Bangalore 560 062 Mobile: 9448065479	Para-pheromone trap technology
7	Mr Hemanth M/s Biopest Control Industries #214, 8 th D Main Road 1 st Block, Kalyanagar Bangalore 560043 Mobile: 9880755074	Para-pheromone trap technology
8	M/s. Sri Biotech Laboratories Indis Ltd., Biosphere, Plot No. 21, Street No. 2, Sagar Society, Road No. 2, Banjara Hills, Hyderabad-500 0034	Neem Soap and Pongamia Soap
9	M/s. AG Bioteck Laboratories (India) Ltd., BACHUPALLI, Qutabbullapur (MANDAL), Kukatpally, Ranga Reddy Dist., Hyderabad 500 072, Andhra Pradesh.	Banana Micronutrient formulation technology

VEGETABLES

Hybrid Vegetables:

Objective:

- To ensure timely supply of vegetables all round the year.
- To supply quality vegetables.
- To replace traditional varieties of vegetables with hybrid varieties.

Sl. No	Item	Max. permissible cost	Pattern of Assistance
1	Vegetables (For maximum area of 2 ha per beneficiary)		
	i) Hybrid	Rs.50,000/ ha	40% of total cost.

PATTERN OF ASSISTANCE FOR HYBRID VEGETABLES PER HA.

S.No.	Component	Total permissible cost (in Rs.)	40% Subsidy (in Rs.)	Farmers share (in Rs.)
1	Seeds	5000.00	2000.00	3000.00
2	Inputs	10000.00	4000.00	6000.00
3	Plastic crates (100 Nos. @ Rs. 250/- each)	25000.00	10000.00	15000.00
4	Labour Charges (weeding, harvesting etc.)	10000.00	4000.00	6000.00
Total		50000.00	20000.00	30000.00

- Maximum assistance limit under Hybrid Vegetable programme is 2 ha. per beneficiary.
- The ADHs are not permitted to inter change the budget allocation between subcomponent and should claim the subsidy as per the indications given for each component.
- The cost involved in component like preparation of land, planting, staking and intercultural operations should be born by the beneficiary.
- The identified beneficiaries should be uploaded in the HORTNET and the release of subsidy under various components will be through HORTNET.

FLOWERS

Objective:

- To bring additional area under Flowers (Cut flowers, Bulbous flowers and Loose flowers) with improved varieties / hybrids.

Sl. No.	Item	Max. permissible cost	Pattern of Assistance
Establishment of new gardens (Area Expansion)			
1	Flowers (For a maximum of 2 ha per beneficiary)		
	i) Loose Flowers	Rs. 40,000/ha	40 % of the cost for S&M farmers and 25% of cost to other category farmers in general areas.

Jasmine, Chrysanthemum, Crossandra and Marigold

S.No.	Component	Total permissible Cost per Ha. (Rs. In lakhs)	40% subsidy for small and marginal farmers (Rs. In lakhs)	25% subsidy for other category farmers (Rs. In lakhs)
1	Plant Material	0.18	0.072	0.045
2	Inputs	0.12	0.048	0.03
3	Labour Component	0.10	0.04	0.025
Total		0.40	0.16	0.10

- The identified beneficiaries should be uploaded in the HORTNET and the release of subsidy under various components will be through HORTNET.

2ND YEAR AND 3RD YEAR MAINTENANCE PROGRAMMES

2nd Year plantations established during 2013-14

- The beneficiaries have to take up gap filling on their own to maintain 75% of the survival garden under 2nd year maintenance.

A) PATTERN OF ASSISTANCE PER Ha. TO BE FOLLOWED FOR 2nd YEAR MAINTENANCE PROGRAMME (GARDENS ESTABLISHED DURING 2013-14)

S. No.	Name of the crop	Plant Material	INM	IPM	Total Assistance
1	2	3	4	5	6
1	Mango (5 x 5 Mtrs.)	1350	3600	2550	7500
2	Sweet Orange (5x5 Mtrs.)	1600	3850	2550	8000
3	Sweet Orange (6.3x6.3 Mtrs.)	1405	2325	1270	5000
4	Guava (2.5 x 2.5 Mtrs.)	5400	1253	1347	8000
5	Acid Lime (5x5 Mtrs.)	700	4175	2625	7500
6	Acid Lime (6.3x6.3 Mtrs.)	563	2700	1737	5000
7	Pomegranate (5x3 Mtrs.)	2000	3750	1750	7500
8	Banana	0	8588	1787	10375
9	Papaya	0	5363	2137	7500
10	Cocoa	218	1525	857	2600

3rd Year maintenance plantations established during 2012-13

- The beneficiaries have to take up gap filling on their own to maintain 90% of the survival garden under 3rd year maintenance.

B) PATTERN OF ASSISTANCE PER Ha. TO BE FOLLOWED FOR 3rd YEAR MAINTENANCE PROGRAMME (GARDENS ESTABLISHED DURING 2012-13)

S. No.	Name of the crop	Plant Mate rial	INM	IPM	Total Assista nce
1	2	3	4	5	6
1	Mango (7.5 m x 7.5 m)	328	3422	1650	5400
2	Mango (5 x 5 m)	405	4875	2220	7500
3	UHDP Mango and Guava (2.5 x 2.5m)	2160	4340	1500	8000
4	Sweet Orange (5 m x 5 m)	480	5295	2225	8000
5	Sweet Orange (6.3m x 6.3m)	563	3037	1400	5000
6	Acid Lime (5 m x 5 m)	210	4915	2375	7500
7	Acid Lime (6.3 m x 6.3 m)	225	3075	1700	5000
8	Pomegranate	675	4750	2075	7500
9	Cocoa (3 m x 3 m)	88	1575	937	2600

- For 2nd and 3rd year, the assistance will be provided in the form of cash to the beneficiaries through online transfer from the concerned District ADHs.
- While calculating the total cost as per the package, the subsidy amount indicated for each sub-component under IPM / INM should be strictly followed and no diversification of funds from one input to another is allowed i.e., from Bio pesticide to chemical pesticide/organic manures to inorganic fertilizers etc.
- Before extending input assistance to the beneficiaries under 2nd and 3rd year maintenance, DMC should take necessary proactive steps so that beneficiary shall be motivated to take up gap filling on his own to maintain 75% and 90% survival respectively.
- The identified beneficiaries should be uploaded in the HORTNET and the release of subsidy under various components will be through HORTNET.

REJUVENATION AND CANOPY MANAGEMENT

Objective:

- To increase the production and productivity of orchards of more than 25 years old by removal of old unproductive / senile trees and replanting with fresh planting material / rejuvenating the old and senile orchards with appropriate and integrated combination of inputs, pruning / grafting techniques.
- To regulate the shape and growth of tree.
- To Maximize the productivity with quality fruit production
- To reduce the pest and disease incidence which will reduce the cost of cultivation of fruits crops and reduction in usage of chemical pesticides and fungicides.

Non-negotiable under SHM 2014-15 for the Component Rejuvenation

- District Horticulture Mission should ensure that Rejuvenation programme to be implemented on cluster approach in a contiguous area, instead of doing it in scattered & unplanned manner. This approach will help in providing both backward and forward linkages and enable the Dept., to do effective extension service.
- Minimum area per each block should be above 10 Ha.
- New clusters & new beneficiaries shall be selected under these programmes as per locations specific crops.
- The assistance under these components shall not be extended to the beneficiaries already covered during previous years. The ADHs & HOs should be cautious while selecting the beneficiaries.
- The beneficiary selection need to be done in most transparent manner by conducting Gramasabhas and the list should invariably be approved by District Horticulture Mission.
- Coverage of SC/ST & Women farmers as per the prescribed ratio is minimum mandatory requirement under these components.
- Horticulture Officers of the concerned area should obtain applications from beneficiaries along with photograph of self and without plantation in the existing format prescribed.

- The farmers who are having assured source of irrigation and power supply are mandatory
- To obtain the application through online and hardcopy.
- Land holding of the farmers should be certified by Horticulture Officers on the basis of the original Pattadar pass book or Adangal signed by MRO.
- The HO concerned should maintain Register for recording the details of identified beneficiaries i.e. land details/crop/variety/source of plant material/ date of planting /inputs supplied/non subsidy particulars etc.
- Photographs of orchards along with farmers before and after plantation, before and after Rejuvenation/Canopy Management/Top Working etc. also be maintained by the HO concerned. The same copies to be made available in the ADH office
- ADH should ensure to submit the photographs (soft copies) of the beneficiary's fields before and after plantation or before and after Rejuvenation/Canopy Management/Top Working to the SHM Cell without fail.
- ADH shall organize training programmes to the beneficiaries identified under Rejuvenation, on selection of quality plant material, discarding of plant material affected by virus, pests and diseases, deficiencies of micro nutrients etc.
- Pre-sanction inspection of the fields proposed for Rejuvenation by the Horticulture Officer concerned is mandatory and 25% of the area to be inspected by concerned ADH. Soil suitability and availability of quality water should be personally verified and satisfied by the Horticulture Officer concerned.
- Selection and documentation process should be completed in a time bound manner and seasonality must be adhered to, for plantation, distribution & utilization of inputs at any cost.
- Before permitting the beneficiaries to start land preparation, pitting etc, the ADH should ensure to take approval of DMC for the selected beneficiaries.
- ADH should ensure for proper documentation of various steps (viz., land preparation / pitting, planting & installation of micro irrigation system etc. along with necessary photographs) by the HOs/ADH concerned under Rejuvenation.
- Intercropping shall be encouraged in all perennial orchards with region specific intercrop as they contribute to soil fertility and income during gestation period. Necessary provision for assistance has been made in the unit cost.
- The prices finalized for the supply of garden tools under Rejuvenation for the year 2013-14 is applicable for the year 2014-15 also.

- The assistance will be provided to the beneficiaries through online transfer from the State Head quarters through HORTNET in CFMS mode.

Sl. No.	Item	Max. permissible cost	Pattern of Assistance
1	Rejuvenation / replacement of senile plantation, canopy management	Rs. 40,000/ha	50% of the total cost subject to a maximum of Rs. 20,000/ha limited to two ha per beneficiary.

CRITERIA FOR SELECTION OF GARDENS FOR REJUVENATION PROGRAMME

- Unproductive gardens due to local varieties.
- Senile and Non-Maintained Gardens.
- Pests & disease infected Gardens.
- Gardens with less number of trees in unit area with poor production.
- Age of gardens for implementation of Rejuvenation programmes is as follows.

S. No.	Crop	Age of the tree	
		Rejuvenation	Canopy Management
1	Mango	>20 years	> 5 years - 20 years
2	Cashew	>20 years	> 5 years - 20 years
3	Citrus	>8 years	Above 5 years to 8 years
4	Guava	>8 years	Above 5 years to 8 years

CROP-WISE PARAMETERS TO BE FOLLOWED FOR REJUVENATION/ CANOPY MANAGEMENT

MANGO:

1. Gap filling with suitable varieties.
2. Canopy Management (can be done in 3 types) :-
 - Bushy trees are to be provided with proper aeration and ventilation by removal of dead, diseased, drooping & crisscross branches in case of the gardens where there is poor light penetration.
 - Lanky trees with more wood have to be beheaded by way of pollarding.
 - Unproductive with local varieties trees have to be top worked.
3. Application of Bordeaux paste / copper based fungicides to the cut-ends.
4. Preparation of basins.
5. Timely application of manures (FYM/Neem-Cake/ Vermi-compost) & fertilizers as per the recommendation.
6. Thinning of the new flush keeping 4 to 5 branches covering all sides to attain dome shape to the tree.
7. Cultivation of inter-crop like Sun-hemp, Diancha etc. to improve soil fertility and to arrest weeds.
8. Plant Protection measures to be taken up as and when necessary.

CITRUS:

1. Removal of diseased, dead and dried branches.
2. Spraying of Bordeaux mixture or any copper fungicide.
3. Preparation of basins and timely application of manures (FYM/Neem-Cake / Vermicompost) and fertilizers as per recommendation.
4. Combined micro-nutrients sprays at 15 days interval on newly emerging leaves to correct the deficiencies of different elements.
5. Plant Protection measures to be taken up as and when necessary.

CASHEW:

1. Gap filling with suitable variety.
2. Canopy management by removal of dead, diseased, drooping & crisscross branches for proper light penetration.
3. Application of Bordeaux paste / copper based fungicides to the cut-ends.
4. Preparation of basins.
5. Timely application of manures (FYM/Neem Cake/Vermi-compost) & fertilizers as per the recommendation.

6. Cultivation of inter-crop like Sun-hemp, Diancha etc. to improve soil fertility and to arrest weeds.
7. Plant Protection measures to be taken up as and when necessary.
8. The selected/identified cashew gardens to be taken care for avoiding the stem borer by applying PP measures.

GUAVA

1. Gap filling with suitable variety.
2. Canopy management by removal of dead, diseased, drooping & crisscross branches for proper light penetration.
3. Application of Bordeaux paste / copper based fungicides to the cut-ends.
4. Preparation of basins.
5. Timely application of manures (FYM/Neem-Cake/Vermicompost) & fertilizers as per the recommendation.
6. Bahar treatment for crop regulation.
7. Plant Protection measures to be taken up as and when necessary

IMPLEMENTATION PROCEDURE FOR REJUVENATION PROGRAMMES

- Under Rejuvenation Programme the assistance for the components like Plant material, inputs like PP chemicals plant growth regulators, micro nutrients etc and Labour charges will be done in the form of cash through online transfer to the beneficiaries through ADHs.
- Area proposed for Rejuvenation/ Canopy Management programmes shall invariably be identified by a Committee consisting of ADH, H.O. and local scientists of Agriculture / Horticulture University (ARS / KVK).
- The villages where there are large areas of old unproductive & senile Mango /Sweet orange/ Guava/ Cashew plantations exists should be selected for Rejuvenation programmes.
- Identified area shall be in a cluster mode.
- Minimum of 10 Ha. in single area / village.
- The assistance of Rejuvenation programmes shall not be extended for those plantations which are in scattered area.
- Depending on the target and the interest of the farmers, area will be selected purely based on merits of the case.

- Farmers identified for rejuvenation in a village should be organized into common interest groups to take forward the initiative beyond one year as this will facilitate capacity building through training.
- Before finalizing the beneficiaries, AD(H) should get satisfied with the interest and conviction of the farmer on the concept and need for rejuvenation. Only those farmers are to be selected who come forward to take up pruning, basin formation, application of Bordeaux paste and other such activities with their own cost.

Time frame for taking up rejuvenation.

- 1. Mango - June
 - 2. Citrus - August
 - 3. Cashew - June
 - 4. Guava - April/May
- ADH should ensure to conduct a basic data survey for recording where Rejuvenation/ Canopy Management is proposed to be taken up.

1	Name of the Farmer	8	Age of the Garden
2	Father's / Husband's Name	9	Extent Proposed for Rejuvenation/ Canopy Management (Ha.)
3	Village	10	No. of Trees existing in the garden proposed for Rejuvenation/ Canopy Management
4	Mandal	11	No. of gaps identified for gap filling
5	Category	12	Yield status of the crop during last year
6	Survey No.	13	Recommended technique (Canopy Management)
7	Total Extent Ha.	14	No. of trees proposed for Canopy Management

- Intensive awareness and capacity building through audio visual aids and village level farmers workshop should precede actual implementation of Rejuvenation/ Canopy Management Programmes. Training / Awareness budgets given to the districts should be dovetailed to this purpose.

- Field level training program shall be conducted to all the identified beneficiaries on the mode & sequence of events of Rejuvenation/ Canopy Management with the help of resource persons / experienced progressive farmers. If required, the farmers shall be taken to the fields / villages where rejuvenation programme is successfully implemented due to which productivity is increased.
- Since the targets are relatively less under this program, preference shall be given to small and marginal farmers in the order of priority to SC/ST/women/ others.
- Horticulture Officer should maintain a register for rejuvenation in which details of assistance provided under MIDH, item-wise, to be recorded.
- Rejuvenation is an integrated component and ADHs shall strive to implement the program in totality and in holistic manner and not in bits & pieces.
- The H.O.s should take the photographs of the orchards to be rejuvenated (crop-wise) in three stages as detailed below and should submit the same to SHM Cell through ADH for documentation purpose.
- The HOs should also collect the yield data and the impact of the rejuvenation programmes from the farmers and submit to SHM Cell through ADH.
 - Before taking up the rejuvenation
 - During rejuvenation (different stages)
 - Orchards in bearing conditions after rejuvenation.
- The ADHs should record the success stories of the rejuvenation programme in their district as the same has to be submitted to NHM, GOI, every year and the same to be depicted at HRCs.

Sub-component wise Pattern of Assistance for different crops under Rejuvenation / Canopy Management is given below and the same should be followed scrupulously.

PATTERN OF ASSISTANCE FOR ONE HECTARE OF MANGO CROP UNDER REJUVENATION

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
I	Tractor ploughing, Basin preparation, Hoeing & weeding	4600	0
II	Farm Yard Manure	4000	0
III	ORGANIC MANURES		
	Vermicompost / City compost	5500	4600
	De-oiled Neem Cake	2100	0
III	Inorganic Fertilizers	5850	3200
IV	Micronutrient	5150	3050
V	Plant protection chemicals	3850	2450
VI	Plant growth regulators	250	0
VII	Supply of implements (1 long reach pruner and 1 No. Folding Hand Saw compulsory)	3100	3100
VIII	Labour charges	5600	3600
	TOTAL	40000	20000

PATTERN OF ASSISTANCE FOR ONE HECTARE OF CITRUS CROP UNDER REJUVENATION

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
I	Basin preparation & weeding etc.	4000	2000
II	Farm Yard Manure	5000	2500
III	ORGANIC MANURES		
	Vermicompost / City compost	6200	3100
	De-oiled Neem Cake	3800	750
III	Inorganic Fertilizers	6600	3300
IV	Micronutrient	3400	1700
V	Plant protection chemicals	5700	2850
VI	Supply of implements (1 No. of Secateurs, 1 No. of Looping shear and 1 no. of Folding hand saw compulsory)	2300	2300
VII	Labour charges	3000	1500
	TOTAL	40000	20000

**PATTERN OF ASSISTANCE FOR ONE HECTARE OF CASHEW CROP UNDER
REJUVENATION**

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
I	Plant material for gap filling 20% of 150 plants i.e. 30 plants per Ha. @ Rs.20/- per graft	600	600
II	Basin preparation & weeding etc.	1500	0
III	Farm Yard Manure	4000	0
IV	ORGANIC MANURES		
	Vermicompost / City compost	3375	2775
	De-oiled Neem Cake	1200	0
V	Inorganic Fertilizers	1925	1000
VI	Plant protection chemicals	2775	1900
VII	Supply of implements (1 long reach pruner and 1 No. Folding Hand Saw compulsory)	3100	3100
VIII	Labour charges	1525	625
	TOTAL	20000	10000

**PATTERN OF ASSISTANCE FOR ONE HECTARE OF GUAVA CROP UNDER
REJUVENATION**

Sl. No.	Particulars	Estimated cost (Rs)	Assistance (Rs)
I	Plant material for gap filling	1500	1500
I	Tractor ploughing, Basins preparation, hoeing and weeding	5000	0
II	Farm Yard Manure	4000	2000
III	ORGANIC MANURES		
	Vermicompost / City compost	4800	2400
	De-oiled Neem Cake	3200	1600
III	Inorganic Fertilizers	6500	3250
IV	Micronutrient	3200	1600
V	Plant protection chemicals	3800	1900
VI	Supply of implements ((1 No. of Secateurs, 1 No. of Looping shear and 1 no. of Folding hand saw compulsory)	2300	2300
VII	Labour charges	5700	3450
	TOTAL	40000	20000

**PATTERN OF ASSISTANCE FOR MANGO PER HECTARE UNDER CANOPY
MANAGEMENT**

Sl. No.	Components	Estimated Cost (Rs.)	Department Assistance (Rs.)	Farmers Share (Rs.)
I	Organic Manures			
	a. Farm Yard Manure	750	-	750
	b. Vermi compost	750	750	-
II	Chemical Fertilizers	3440	1720	1720
III	Pruning and cutting inclusive of 1 no. of long reach pruner and 1 no. of folding hand saw compulsory	6000	3000 (towards equipment on 100% assistance)	3000 (towards labour charges)
IV	Plant Protection Chemicals	1060	530	530
	Total	12000	6000	6000

**PATTERN OF ASSISTANCE FOR CASHEW PER HECTARE UNDER CANOPY
MANAGEMENT**

Sl. No.	Components	Estimated Cost (Rs.)	Department Assistance (Rs.)	Farmers Share(Rs.)
I	Organic Manures			
	a. Farm Yard Manure	450	-	450
	b. Vermicompost	450	450	-
II	Chemical Fertilizers	3100	1550	1550
III	Pruning and cutting inclusive of 1 nos folding hand saw and 1 no of long reach pruner compulsory	6000	3000 (towards equipment on 100% assistance)	3000 (towards labour charges)
IV	Plant Protection Chemicals	2000	1000	1000
	Total	12000	6000	6000

**PATTERN OF ASSISTANCE FOR CITRUS PER HECTARE UNDER CANOPY
MANAGEMENT**

Sl. No.	Components	Estimated Cost (Rs.)	Department Assistance (Rs.)	Farmers Share(Rs.)
I	Organic Manures (Vermicompost / City Compost)	4400	1400	3000
II	Chemical Fertilizers	4800	1000	3800
III	Plant Protection Chemicals	1200	600	600
IV	Implements one folding hand saw, one looping shear and one secateurs compulsory	2300	2300	0
V	Pruning and cutting (Labour charges)	3700	700	3000
	Total	16400	6000	10400

**PATTERN OF ASSISTANCE FOR GUAVA PER HECTARE UNDER CANOPY
MANAGEMENT**

Sl. NO.	Components	Estimated Cost (Rs.)	Department Assistance (Rs.)	Farmers Share(Rs.)
I	Organic Manures (Vermi-Compost)	1500	750	750
II	Chemical Fertilizers	3500	1750	1750
III	Plant Protection Chemicals	1000	500	500
IV	Pruning and cutting inclusive of 1 nos folding hand saw, 1no. of long reach pruner and 1 no. Secateurs compulsory	6000	3000 (towards equipment on 100% assistance)	3000 (towards labour charges)
	Total	12000	6000	6000

PATTERN OF ASSISTANCE FOR MANGO PER HECTARE UNDER TOP WORKING

Sl. NO.	Components	Estimated Cost (Rs.)	Department Assistance (Rs.)	Farmers Share(Rs.)
I	Organic Manures (Vermi-compost)	3000	1500	1500
II	Chemical Fertilizers	3440	1720	1720
III	Plant Protection chemicals	1060	530	530
IV	Implements (one folding hand saw and one secateurs compulsory)	1300	1300	0
V	Labour charges (Cutting/Deheading branches, grafting etc)	6200	2450	3750
	Total	15000	7500	7500

Crop wise Input packages recommended by the Technical Committee for Rejuvenation Programme is given below:

RECOMMENDED INPUT PACKAGE (PER HECTARE) FOR REJUVENATION / CANOPY MANAGEMENT / TOP WORKING PROGRAMMES 2014-15

Name of the Crop: Mango

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 50 Kgs per plant	Tones		5
	Vermicompost / City Compost @ 10 Kgs per plant	Kgs	40 Kg	1000
	De-Oiled Neem Cake @ 1.5 Kgs per Plant	Kgs	40 Kg	150
II	Inorganic Fertilizers			
	S.S.P.	Kgs	50 Kg	300
	Urea	Kgs	50 Kg	250
	M.O.P.	Kgs	50 Kg	150
III	Micronutrients			
	Formula – 4	Kgs	Kg	20
	Formula – 7	Kgs	10 Kg	50
	13:00:45	Kgs	500 gr	5
IV	Plant Protection Chemicals			
	Chlorpyrifos 20% EC	Ltrs	500 ml	2
	Dichlorovas 76% EC	Ltrs	500 ml	1
	Carbendazim 50% EC	Kgs	500 gr	1.5
	C.O.C. 50% WP	Kgs	500 gr	1.5
V	Bio pesticides			
	<i>Verticellium lecanii</i> WP	Kgs	500 gr	2.5

Name of the Crop: Citrus

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 40 Kgs per plant	Tones		7
	Vermicompost / City Compost @ 4 Kgs per plant	Kgs	40 Kg	1000
	De-oiled Neem Cake @ 1 Kg per plant	Kgs	50 Kg	250
II	Inorganic Fertilizers			
	S.S.P.	Kgs	50 Kg	625
	Urea	Kgs	50 Kg	375
	M.O.P.	Kgs	50 Kg	250
III	Micronutrients			
	Formula – 4	Kgs	Kg	20
IV	Plant Protection Chemicals			
	Profenophos 50% EC / Trizophos 40% EC	Ltrs	500 ml	1
	Propergite 57% EC	Ltrs	500 ml	1
	Metalaxyl 8% + Mancozeb 64% WP	Kgs	500 gr	1
	C.O.C. 50% WP	Kgs	500 gr	1.5
	Streptocyclin 10%	grms	6 gr	54
	Sticking Agent	Ltrs	500 ml	2
V	Bio Pesticides			
	<i>Trichoderma viride</i> / <i>T. harzianaum</i>	Kgs	Kg	20
	<i>Pseudomonas floescence</i> 1x10 cfu/gm	Kgs	Kg	20

Name of the Crop: Guava

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 20 Kgs per plant	Tones		5
	Vermicompost / City Compost @ 3 Kgs per plant	Kgs	40 Kg	840
	De-oiled Neem Cake @ 1 Kg per plant	Kgs	50 Kg	275
II	Inorganic Fertilizers			
	S.S.P.	Kgs	50 Kg	520
	Urea	Kgs	50 Kg	360
	M.O.P.	Kgs	50 Kg	138
III	Micro-nutrients			
	Formula - 4	Kgs	Kg	20
IV	Plant Protection Chemicals			
	Chlorpyrifos 20% EC	Ltrs	500 ml	1
	Dichlorovas 76% EC	Ltrs	500 ml	1
	Mancozeb 7.5% WP	Kgs	500 gr	1
	C.O.C. 50% WP	Kgs	500 gr	1
	Sticking Agent	Ltrs	500 ml	2
V	Bio Pesticides			
	<i>Trichoderma viride</i> / <i>T. harzianum</i>	Kgs	Kg	7.5
	<i>Pseudomonas fluorescence</i> 1x10 cfu/gm	Kgs	Kg	7.5

Name of the Crop: Cashew

Sl. No	Recommended Inputs	Unit	Packing size	Recommended Quantity per Ha.
I	Organic Manures			
	Farm Yard Manure @ 50 Kgs per plant	Tones		8
	Vermicompost / City Compost @ 5 Kgs per plant	Kgs	40 Kg	750
	De-Oiled Neem Cake @ 1 Kg per plant	Kgs	50 Kg	150
II	Inorganic Fertilizers			
	S.S.P.	Kgs	50 Kg	110
	Urea	Kgs	50 Kg	250
	M.O.P.	Kgs	50 Kg	30
IV	Plant Protection Chemicals			
	Chlorpyrifos 20% EC	Ltrs	500 ml	1
	Dichlorovas 76% EC	Ltrs	500 ml	1
	C.O.C. 50% WP	Kgs	500 gr	1
	Sticking Agent	Ltrs	500 ml	2.5
V	Bio Pesticides			
	<i>Beauveria bassiana</i> 1x10 cfu/gm	Kgs	500 gr	2.5
	Azadirachtin 10000 ppm	Ltrs	500 ml	1

INTEGRATED PEST MANAGEMENT / INTEGRATED NUTRIENT MANAGEMENT

Objectives:

- To create awareness among the farmers on sustainable form of Horticulture.
- To control the pests by utilizing minimum recommended doses of pesticides for obtaining optimum results.
- To reduce cost of cultivation.
- To promote usage of bio – products & for maintenance of ecological balance.

Procedure:

- Intensive awareness on a campaign mode on the concept of IPM should be conducted for all the beneficiary farmers.
- Compact blocks of 50 - 100 ha. of each crop in 2 to 3 Mandals that are needy of adopting IPM/INM practices are to be selected depending on pest prevalence and furnish the name of village/ Mandal / No.of farmers & extent proposed to be covered under the programme area along with time schedule for implementation.
- The assistance under this component shall not be extended to the beneficiaries already covered during previous years. New needy clusters and beneficiaries shall be selected after identification of the pest/Disease.
- Preference should be given to small/marginal/SC/ST farmers.
- The beneficiaries shall apply to the Horticulture Officers of the concerned area in the format prescribed along with original passbook.
- Land holding on the basis of original passbook of the farmer and plantation should be certified by the Horticulture Officers.
- The assistance is provided for inputs only.
- Input packages containing a combination of Chemical and Bio-inputs should be recommended to the farmers in accordance with the field situation and prevalence of pests and diseases with due approval of the scientists.
- The ADH should also furnish the detail report on the impact of IPM after taking up the programme.
- After completion of the programme the ADH should furnish the list of beneficiaries along with UC.

Pattern of Assistance:

- Assistance is limited to 30% cost, subject to a maximum of Rs. 1200/- per on the total cost of inputs to a max ceiling of 4 Ha per beneficiary.

Mode of disbursement:-

- The Horticulture officer shall ensure that the farmers have taken up IPM practices as per the input package recommended with due verification of the bills of the inputs purchased.
- Horticulture officer shall certify the bills, submit to ADH along with the bank account details of the farmers and recommend for release of the assistance to the farmers.
- **The assistance will be provided to the beneficiaries through online transfer from the State Head quarters through HORTNET in CFMS mode.**

PROTECTED CULTIVATION - 2014-15

GREEN HOUSES / SHADENET HOUSES / MULCHING:

Objectives:

- Enhancing productivity per unit area.
- Promotion of high value Horticulture crops under green houses.
- Propagation of planting material to improve germination percentage and better hardening.
- To promote high value vegetable cultivation under Shadenet House.
- Year round production of floricultural crops and off season production of vegetables & fruit crops.
- Disease free and genetically superior transplants can be produced continuously.

Points to be considered while constructing green house:

- East and South for the sun is excellent for the green house, which can remain open on both these sides, but it should be shaded on the north and the west to protect from winds.
- The site should be free from shadow.
- The site should be at a higher level than the surrounding land with adequate drainage facility.
- Availability of good quality irrigation water and electricity.
- pH of irrigation water should be in the range of 5.5 to 7.0 and EC between 0.1 to 0.3mS/cm.
- pH of soil should be in the range of 5.5 to 6.5 and EC between 0.5 to 0.7mS/cm.
- Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 Km/hr or 36 Meter per second.

A. General Guidelines:

1. Procedure to apply for assistance:

A. Under Self-finance cases

- I. All the cases must be entertained through online on HORTNET in case assistance is to be availed under MIDH scheme.
- II. The cases shall be entertained on First Come First Serve Basis.
- III. The applicant shall be responsible for the completion of all required documents. Incomplete documents does not entitles applicant to avail assistance. The application shall be considered only after completion of all the documents.
- IV. Farmer will apply to concern ADH office through HO of concerned block with complete required documents as per check-list.
- V. ADH will verify the documents as per check-list and will forward the case online on HORTNET to headquarter with his recommendation as per availability of the funds with them.
- VI. Headquarter will scrutinize the cases and accord approval for release of assistance under this component.
- VII. ADH will issue sanction letter after approval from HQ.

B. Under bank finance:

- I. All the cases must be entertained through online on HORTNET in case assistance is to be availed under MIDH scheme.
- II. The cases shall be entertained on First Come First Serve Basis.
- III. The applicant shall be responsible for the completion of all required documents. Incomplete documents does not entitles applicant to avail assistance. The application shall be considered only after completion of all the documents.
- IV. Farmer will apply to concern ADH office through HO of concerned block with complete required documents in two set of copies as per check-list.
- V. ADH will verify the documents, if found, as per check-list and will send second copy to the bank with pre-sanction letter to bank for sanctioning the loan of the project in front ended credit linked project.
- VI. Bank after sanctioning the loan amount of project will send a copy of sanction letter and appraisal report to ADH for the sanction of project. The date of receiving of appraisal report in ADH office shall be treated as first day of application and will be considered based on available targets.
- VII. ADH will forward the all case online on HORTNET to headquarter with his recommendation as per availability of the funds with them.

VIII. Headquarter will scrutinize the cases and accord sanction for release of assistance under this component.

2. Eligibility Criteria for applicant:

1. Minors are not eligible.
2. Only farmer of **Telangana state** can be a beneficiary under the schemes. The document viz. Ration card/voter card/*Aadhar* card/Domicile/Passport etc. is required.
3. Farmer means a person having land ownership in one's name. For this he has to submit Land Records: Original *Pattardar Pass book* (Latest by three months) Land verification report by *Patwari and VRO*. All the documents submitted shall latest not more than three months old.
4. Farmer includes farmer's family, means husband, wife and their minor children. Ration card is required to prove family unit.
5. The adult son/daughter or in case of his/her death, his/her widow/widower and children shall be deemed to be living with the parents or either of them. The adult son/daughter shall only be considered as separate unit only when separated from parents. *It means they live separate from parents and this can be verified by means of Aadhaar card and/or Voter ID Card or Driving License or separate ration card having in all the cases separate address to that of their parents.*
6. Department promotes cluster and for that farmers of Telangana can take land on lease. But in all such cases the cluster projects should be bankable. The combined amount of assistance to such cluster projects should not increase 20% of the total financial targets of that district.
7. Only those applicants are eligible to apply who did not availed assistance on account of Protected Cultivation in his/her name/spouse name or in name of dependent member of his/her family from any Government agency. Further those applicants or dependent family members who have been availed assistance under this component at anytime, anywhere in Telangana are not eligible.

3. Empanelment of new firms: the new firms shall be empanelled during 2014-15.

4. Training: Minimum three days training-cum-workshop regarding awareness on Protected Cultivation, issues related to Cultivation, Construction and Maintenance of Poly houses is required. A certificate to this effect shall be issued by RHTIs. Training certificate is mandatory before release of assistance on account of cost of cultivation.

5. Construction of Protected Structures: The work of construction of protected structures shall be completed within a period of **90 days**. Further, an extension of maximum 30 calendar days may be considered in advance in writing.

6. Assistance Limit: The assistance shall be applicable as per norms given below:

7. Pattern of Assistance:

Sl.No.	Item	Estimated unit cost	Pattern of Assistance
1	Green House Structure		..
	a. Fan & Pad system		
		Rs.1650/Sqm (up to area 500 Sq.m) Rs.1465/Sq.m (>500 Sqm up to 1008 Sqm) Rs.1420/Sq.m (>2080 Sq.m up to 2080 Sqm) Rs.1400/Sq.m(>2080 Sq.m upto 4000 Sq.m) Above rates will be 15% higher for hilly areas.	50% of cost for a maximum area of 4000 sq.m per beneficiary.
	b. Naturally ventilated system		
	i) Tubular structure	i. Rs.1060/Sq.m (up to area 500 Sq. m) ii.Rs. 935/Sq.m (>500 Sq. m up to 1008 Sq. m) iii.Rs. 890/Sq. m (>1008 Sqm up to 2080 Sq. m) iv.Rs. 844/Sq. m (>2080 Sq. m up to 4000 Sq. m) Above rate will be 15% higher for hilly areas	50% of cost limited 4000 sq. m per beneficiary.
	ii) Wooden structure	Rs. 540/Sq. m and Rs. 621/Sq. m for hilly areas	50% of the cost limited to 20 units (each unit not to exceed 200 Sqm per beneficiary).
2	Shade Net House		
	(a) Tubular structure	With plastic top as addition: >4.00m height - Rs. 710/Sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Dome shape; >4.00 m height – Rs. 600/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Flat shape-all GI; 4.0 m height – Rs. 550/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Flat shape-Cable purlin, 4.0 m ht. – Rs. 525/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
	(b) Wooden structure	Rs. 492/Sqm and Rs. 566/Sqm for hilly areas	50% of cost limited to 20 units (each unit not to exceed 200 Sq.m) per beneficiary.

3	Cost of planting material of high value vegetables grown in poly house	Rs.140/Sq. m	50% of cost limited to 4000 Sq.m per beneficiary.
4	Cost of planting material & cultivation of Orchid & Anthurium under poly house /shade net house.	Rs. 700/Sqm	50% of cost limited to 4000 Sq. m per beneficiary.
5	Cost of planting material & cultivation of Carnation & Gerbera under poly house/shade net house.	Rs. 610/Sqm	50% of cost limited to 4000 Sq. m per beneficiary.
6	Cost of planting material & cultivation of Rose and lilum under poly house/shade net house	Rs. 426/Sqm	50% of cost limited to 4000 Sq. m per beneficiary
7	Plastic Mulching	Rs. 32,000/ha and Rs. 36,800/ha for hilly areas	50% of the total cost limited to 2 ha per beneficiary.

Terms & Conditions:-

- The selected beneficiary who have already availed maximum limit of subsidy is not eligible.
- pH of the irrigation water should be in the range of 5.5 to 7.0 and EC between 0.1 to 0.3 ms/cm.
- pH of the soil used as propagating material / media should be in the range of 5.5 to 6.5 and EC between 0.5 to 0.7 ms/cm respectively.
- The selected beneficiaries should be given training programme and exposure visit on concept of protected cultivation, package of practices of high-tech floriculture and high value vegetables.
- The estimated project details designed by the technical consultant as per technical standards of MIDH should be attached to the application.
- Soil and water analysis reports from reputed labs are also to be enclosed to the proposal.
- Protected Cultivation of vegetables should be promoted under MIDH in clusters around major cities/metros. These clusters may be provided with other infrastructural facilities like pre-cooling units, cold storages, refer vans, vending carts etc. and marketing arrangements may be tied up by linking with cooperatives / private retail chain.

- Farmer/Firm is responsible for the erection of the Green House / Shadenet House / inset net house.
- Empanelled companies list will be communicated shortly.
- A display board depicting “Department of Horticulture” (Assisted Green House with logo of NHM).
- Subsidy will be released through online transfer to the beneficiary/Firm through the Hortnet, after joint inspection by the committee members.
- Assistance should not be availed from any Government department. An affidavit duly notarized Rs. 100 stamp paper (format enclosed) to be collected from the farmer along with the proposal.
- Green House flowers, vegetables, medicinal and aromatic plants, spices etc. should be considered for cultivation.
- The proposals for construction of Green House / Shadenet house may also be implemented in project mode with credit link back ended subsidy.
- Shade nets of 35 to 75 % shade should be used.
- Documentation with photo graphs to be done at various stages of erection of Green House / Shadenet House and submit to State MIDH cell along with joint inspection report duly indicating the Name of the beneficiary, Extent , Village and Mandal.
- The photograph should clearly depict the board, unit, farmer and also committee members of joint inspection team.

After the selection of the beneficiaries:-

- Farmer registration should be done in Hortnet.
- DMC approval has to be obtained and list of beneficiaries should be submitted to the state MIDH cell for approval of State Level Executive Committee.
- Administrative sanction proceedings will be issued by the state MIDH cell after SLEC approval duly informing the conditions along with the design, specifications, date of completion etc.
- After undergoing training the farmer should take the installation of Green House as per the technical specifications of MIDH.
- The beneficiary/Firm has to complete the construction of Green House / Shadenet House within 60 days from date of issue of administrative sanction proceedings.

Inspection: there shall be two inspections.

I. First Inspection: First inspection shall be conducted by Joint Inspection Team (JIT) from DHQ (District Head Quarters), ADH&HO or Third Party Inspection nominated by the Department just after supply of material and completion of foundation work. This inspection will be conducted after call from farmer/firm in written to ADH of the District with assurance that the material supplied as per component list and the foundation work is complete as per departmental specifications and quantity as per design excluding cladding material. The farmer/firm will keep representative sample of all the components. The JIT may check any of the used material at site and firm has to facilitate it. In case of bankable cases Joint Inspection Team (JIT) along with Banker shall carry out the inspection.

II. Final Inspection: Final inspection shall be conducted by JIT or Third Party Inspection nominated by Head of the Department after intimation to ADH of the District after completion of structure in all respects. PD MIP/ DDH, ADH, HO, Firm representative (if empanelled firm), farmer & Banker (in case of Bankable) will remain present at the time of physical inspection to be carried out.

Constitution of Joint Inspection Committee for Green House & Planting Material under Protected Cultivation:-

ADH shall organize Joint inspection of the Green House / Shadenet House duly constituting a committee with the following members for approval of state cell:

1. PD, MIP / DDH
2. Assistant Director of Horticulture (concerned)
3. Horticulture Officer
4. MI Engineer, MIP.
5. Banker (in case of bankable project).

The joint inspection report should be sent in format with all necessary certifications. If any of the committee members has not attended the inspection, ADH shall give reasons for not attending the joint inspection.

After the completion of the erection of the Greenhouse:

- The beneficiary should submit the work completion certificate to the ADH.
- The beneficiary has to submit all the original bills for the expenditure incurred to the ADH for further processing.
- ADH to co-ordinate with the members of the joint inspection committee and should arrange inspection of the completed Green House.
- Later the committee shall inspect the unit and submit joint inspection report in the (format enclosed).
- Photograph of the unit along with farmer and committee members has to be enclosed to the joint inspection report.
- The joint inspection report in the prescribed format has to be submitted to State MIDH cell along with DMC approval for release of subsidy.
- ADH concerned should upload the field photos and bills in HORTNET for release of subsidy.
- The subsidy has to be released to the beneficiaries/Firm through Hortnet (online transfer only.)

WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED TO GREEN**HOUSE / SHADENET HOUSE**

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-I	Farmer
2	Soil & Water Analysis Water Report	
3	Affidavit – Format – II	
4	Pattadar Pass Book Copy	
5	Project Estimate	
6	Organization of training programme / Field Visit	HO / ADH
7	Application filling in Hortnet	Farmer / HO
8	District Mission Committee Approval	ADH
9	SLEC Approval	State MIDH cell
10	Issue of Administrative Sanction- Format – III	CoH
11	Erection of Green House (empanelled list will be communicated)	Farmer/Firm
12	1 st Joint Inspection after foundation	ADH&HO
13	Completion & Under Taking – Format – IV	Farmer & Fabricator
14	Submission of bills & invoices	Farmer / HO
15	Constitution of Joint Inspection Committee	ADH
16	Final Joint Inspection Report - Format - V	Committee Members
17	Sending of joint inspection report by obtaining DHM approval for sanction and release of assistance along with photo graphs to state MIDH cell for release.	ADH
18	Uploading the bills and field photos in Hortnet	ADH
19	Release of subsidy to the beneficiary through online transfer (Hortnet)	State MIDH cell

Section-3: Technical Standards of Naturally Ventilated Poly houses/ Green house (As per NHB)

Sl. No.	Item	General Specifications																																																				
1	Type	- Minimum top ventilation should be 10% of total Polyhouse /Greenhouse area and side ventilation depends on requirement of the climatic conditions. - Preferably saw tooth design or Even Span, Ridge & Furrow depending upon suitability for naturally ventilated poly-house/greenhouse.																																																				
2	Size	Area= As per the requirement. Length=Multiples of 8 Meter+ 4 Meter.Ex.8X2+4.(Length is side along the gable or side along the truss lines) Width=Multiples of 4 Meter.Ex.4X2 or 4X3.(Width is side along the gutter or side along the Purlin lines)																																																				
3	Grid	8MX 4M. 2 Meter corridors/balcony along all four sides. If the area is ≤ 250 Sq m then it is better to go for single span green house																																																				
4	Shape	To reduce the impact of wind and consequent damage to greenhouse structure; Green house will be aero dynamic along all four sides with curvature shaped balcony pipes of 48mm OD/2 mm thick G I pipes.																																																				
5	Structure	Hot Dip Galvanized Tubular structure. Galvanization of the structural members of BIS standards should not be less than 300 GSM (grams per square meter).																																																				
6	Stability of Structure	Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 Km/hr or 36 Meter per second. Note:-In case of high wind velocity zones, structures should withstand wind velocity up to 94 miles per/hr or 150Km/hr or 42 Meter per second.																																																				
7	Sizes of the structural members	Refer sequence as =<table><tr><th>Members Name</th><th>Outside Diameter (mm)</th><th>Thickness (mm)</th><th>Wt. per meter length (kg)</th></tr><tr><td>Columns</td><td>76</td><td>2</td><td>3.75</td></tr><tr><td>Top Purlins</td><td>48</td><td>2</td><td>2.30</td></tr><tr><td>Gutter Purlins</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Top Arches of the truss</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Bottom chord of the truss</td><td>60</td><td>2</td><td>2.85</td></tr><tr><td>Internal Bracings of the truss</td><td>33</td><td>2</td><td>1.60</td></tr><tr><td>Corridors/Balconies</td><td>60</td><td>2</td><td>2.85</td></tr><tr><td>Curtain Runner</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Flap control pipe</td><td>21</td><td>2</td><td>1.08</td></tr><tr><td>Curtain shaft</td><td>27</td><td>2</td><td>1.30</td></tr><tr><td>Cross Bracing</td><td>33</td><td>2</td><td>1.60</td></tr><tr><td colspan="4">Not:-Welded pipes should not be used for structure erection except bottom pipe of 8m length.</td></tr></table>	Members Name	Outside Diameter (mm)	Thickness (mm)	Wt. per meter length (kg)	Columns	76	2	3.75	Top Purlins	48	2	2.30	Gutter Purlins	42	2	2.10	Top Arches of the truss	42	2	2.10	Bottom chord of the truss	60	2	2.85	Internal Bracings of the truss	33	2	1.60	Corridors/Balconies	60	2	2.85	Curtain Runner	42	2	2.10	Flap control pipe	21	2	1.08	Curtain shaft	27	2	1.30	Cross Bracing	33	2	1.60	Not:-Welded pipes should not be used for structure erection except bottom pipe of 8m length.			
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8	Fixtures to join Structural Members	Different type of fixtures are used to join structural members of polyhouses like brackets, cleats, clamps, nut & bolts, washers, self-tapping & drilling screw etc. The entire iron fixture should be																																																				

		galvanized and strong enough.
	a) Brackets and cleats	Made from the section like angle, channel, I beams and should be cold galvanized with minimum coat of 120 GSM
	b) Clamps	Different type of clamps like 76/60/48/42/33 mm OD full, 76/60/48/42/33 mm OB half are used which should be made from min. 42 mm wide and 2.1 mm thick GP coil having minimum 120 GSM Galvanization. Curtain clamp should be made from high carbon steel strips of min 30mm wide and 0.8mm thick. Such clamp should have proper spring action so that after fixing at the place they should not change the location.
	c) Nut, bolt and washers	From M12 to M6 Bolts, Nuts, washers should be used and they should be cold galvanized with min.120 GSM coat.
	d) Self tapping and drilling screw	These screw should be used to assure extra safety. They prevent dislocation of clamps from its place. Distance between tapping screw specially for fixing profile to gutter should be 30-40 cm.
9	Gutter	Gutter should be made of Galvanized sheet of 2 mm thickness in trapezoidal shape having 500 mm wide perimeter (Preferably of single length without joint) Coil having 120 GSM Galvanization. It should be leak proof. Min 1% slope required for the gutter. Assure uniform slope to gutter to avoid stagnant water in gutter to achieve maximum life of gutter. Gutter Orientation – North – South and may change according to wind direction.
	a) Gutter Height	Gutter height should be 4 to 4.5 meter from foundation formation level.
10	Ridge Height	Ridge height should be 6 to 6.5 meter from foundation formation level.
12	Arches Overlap	Minimum overlap of top arch over second (small) arch should be 600mm to avoid direct rain entrance into the greenhouse from the vent.
13	Foundations	Pit size should be min 450 mm dia. Depth 750 to 900mm or suitably altered depending upon Ground strata/level so as to ensure safety and stability of the structure even under extreme wind conditions. Columns are fitted over ground “insets” and bolted to insert pipe of 60 mm OD/2mm thick G/ pipe. Length of insert 1200 to 1300 mm & filling the pit with 1:2:4 concrete hand mixed with appropriate Grade cement. Before doing the line out for the foundation, ensure that slope of greenhouse ground along the gable should be 0% to 1% and along gutter min. 1% and max. 3%. If slope of ground exceeds this limit then ask grower to do the land development and maintain the slopes of the ground within the limits. Slope along the gable and gutter should be uniform. If developed ground has filling depth more than 200 mm then ask grower to do the flooding of water over the ground so that it should settle down. If the flooding is not done then there are chances of foundation piercing into the ground after application of structural load even foundation may dislocate.
14	Civil works	Cement concrete 1:2:4 blocks of size 30 cm X 30 cm X 80cm for embedding vertical pipe/poll in brick work for wall around poly house will be 23 cm thick, 0.5 meter high (0.3 m below GL and 0.2 m above GL) in cm 1:6 with 10 cm thick with PCC 1:4:8 in

		foundation of wall. Wall will be plastered in cm 1:4 on top and sides. 80cm to 1m wide and 10cm thick footpaths made of cement concrete ration of 1:2:4 should be provided.
15	Curtain opening	In general temperature inside the poly-house is more than ambient. To reduce the inside poly-house temperature increase, side ventilation, minimum 20% of floor area is necessary. Minimum 1.5 m clear side curtain opening is required. Side curtain should have min.200mm overlap to the bottom apron. This overlap is necessary to avoid direct entrance of rain into the green house and also to stop direct air entry in the nights.
16	Bottom Apron	To top the CO₂ inside the greenhouse, bottom apron is necessary. It should have min 0.6 m height from the ground and max 1.5 meter depending upon the crop and climatic conditions.
17	Doors	Double Door Entry, Doors Should Be Made Of Form FRP Sheets or polycarbonate sheets. Opening and closing is either hinged or sliding. Min width of door should be 1 M and min height 2 M. the door area should have 50 mm PCC flooring over 75 mm thick sub base.
18	Top Shading and side shading	Top shading can be done by using following material: a) Shading net: Shading net made from HDPE should be used. The selection of shade net depends upon the selection of crops grown and the light spectrum. It should not be more than 50% shade factor. It should be UV stabilized so that it should last long for min. three years. GSM should be minimum 100. Opening and closing arrangement either manual or auto should be provided to the shading net to increase its utility. b) Thermal screen/Aluminate: This is better option to create the shading. It reflects the light back and by the means controls the temperature also. This defuses the light also. This is made from HDPE with hot dip aluminium coating. Minimum GSM should be 100 and minimum aluminium coating should 25 micron. Opening and closing arrangement either manual or auto should be provided to the thermal screen to increase its utility. Side Shading: Shade net of 35% should be used to create side shading. This is useful to avoid direct entry of sunlight into the poly-house/green house when curtain is open. Minimum GSM should be 75. or Use of 40mesh UV stabilized insect proof net is also recommended to protect direct entry of insects into the poly-house/greenhouse. This should have minimum 100 GSM weigh. The shade factor (opening) in colour shade net depends on the spectrum of light through which light is passing through. So right kind of shade net is major challenge that depends on growers choice as well to take advice from the experts. The manually operated crank mechanism should be provided for expending and retracting the shade net.
19	Polythene	Technical Specifications of polythene should be as per Indian standard (IS 15827:2009) To select the proper film for poly house is very important and which have direct relation with quality of the crop as well quantity of the produce. Polythene should be properly UV stabilized and

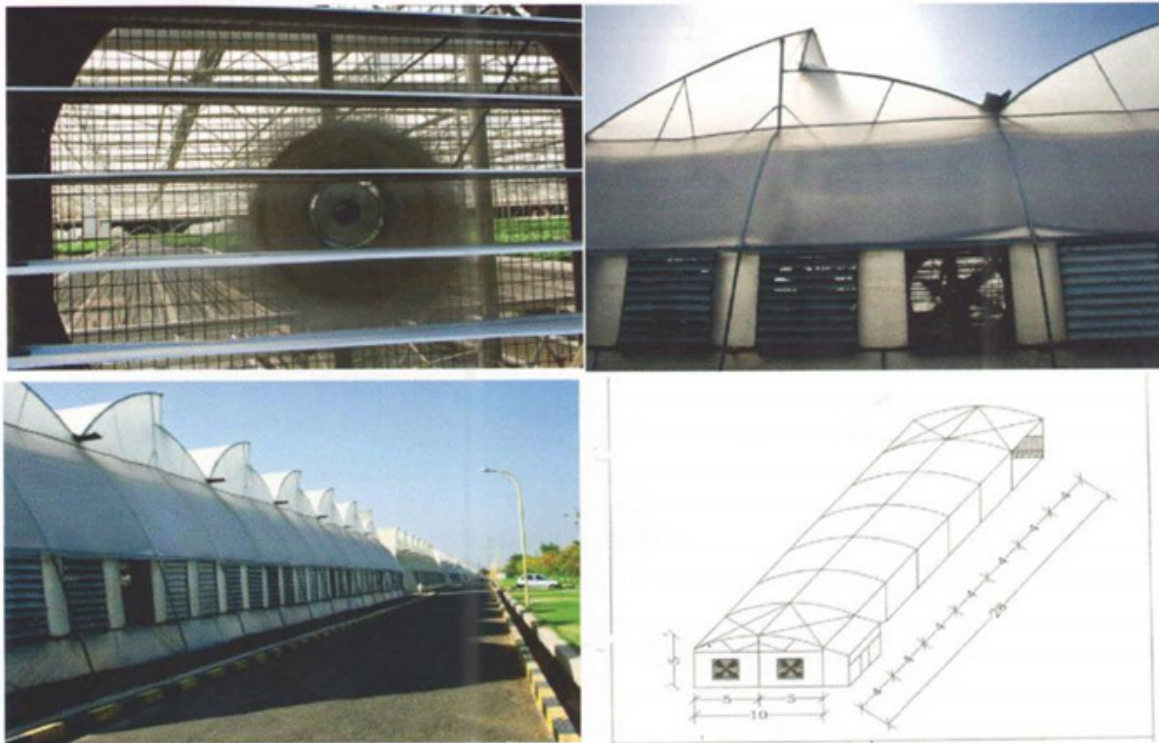
		prorated warranted for at least three years. Thickness of polythene should be minimum 200 micron (0.2mm). Polythene quantity accommodate maximum 5.4 sq. meter area in its 1 kilogram weight. (For example, 5.5mx100m polythene roll should have minimum weight of $5.5 \times 100 / 5.4 = 101.85\text{kg}$ or 4.5m x 100m one roll should have minimum weight of $4.5 \times 100 / 5.4 = 83.33\text{Kg}$.) Options in green house film: Compulsory properties: *UV stabilization *Diffusion/Clear (Light Transmission) Optional properties: *UV Blocking /Antivirus *Sulphur Resistant *Thermic *Anti Drip *Anti Mist *Anti Dust Manufacturing Process: Three layer/Five layer NHB also recommends (not mandatory) polythene with gas bubbles inside because in India high temperature is the problem in front of maximum growers. Our crop wise recommendation of minimum properties of polythene is: 1. Dutch Roses: 200 micron thick, UV stabilized, UV blocking (Not for bi color roses) anti dust, anti sulphur, with cooling effect, Light diffusion should be maximum (upto 75%) but is should not be less than 50%. 2. Gerbera, Coloured Capsicum, Anthurium and orchids: 200 Micron thick, UV stabilized, anti-dust, with cooling effect, light diffusion should be maximum (up to 75%) but is should not be less than 50%. 3. Carnation: 200 micron thick, UV stabilized, anti-dust, with cooling effect, where altitude is high polythene should be with IR protection.
20	Aluminum profile/poly fixing	C type profile made from Alloy Aluminum should have-high strength with light weight-(approx 220-250 gm/rmtrs) smooth edges, Curve bottom proper for 1.25" to 3" pipes, Proper channel for spring and suitable for double spring locking 0.9mm thick. Self-drilling screw should be fixed on profile every 40 cm along the full length of the profile.
21	Spring Insert	A plastic coated GI wire spring of 2.2 mm diameter, having good elasticity should be used for longer life that transferring less heat to the cladding materials as plastic films or shade net. If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. All spring must end inside the profile. Any spring outside profile must be either fixed inside or should be cut so that it does not damage the plastic in strong wind as it will initiate all the plastic being pulled out of profile.

22	Air circulation by “air circulating fans”:	In hot and humid climate, when ambient temperature and humidity are in higher side, it is very natural that both these factors have a tendency to increase further inside a green houses. Under such condition ‘air circulating fans’ inside the green house will do a good job to reduce the harmful effect of high humidity and temperature on plant. The increased air flow inside the plant canopy reduces the leaf temperature and disperses the high humidity around leaves, which maintain the transpiration pull of crop. This will work best when coupled with exhaust fans that will throw out the accumulated hot and humid air. In cool climate, during winter when the green house is heated, you need to maintain air circulation in such a way that temperature remains uniform throughout the green house. Without air mixing fans, the warm air rises to top and cool air settles around the plants on the floor. During rainy seasons. When humidity is high and high ambient temperature cools down due to rain, this air circulating fans may be used judiciously to disperse the higher humidity around plant canopy. Small fans with a cubic-foot-per-minute(ft³/min) air-moving capacity of one quarter of the air volume of green house are sufficient. Place the fans in diagonally opposite corners but out from ends and sides. The goal is to develop circular (oval) pattern of air movement. Operate fans continuously during required period of a day.
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General conditions:

1. Green house structural design should be sound enough to withstand wind speed of 130 km/hr.
2. The companies should be asked to get their structural design verified from the structural engineer because the proposed design is based on the functional requirements and field experience.
3. The firm should guarantee for free maintenance/damage to the structural material for ONE year.
4. The firm should be able to construct the entire green house within eight weeks of the issue of work order.

Section -4: Fan & Pad controlled poly-houses



Fan and pad

Selection of fan

The fans should deliver the required air at 15mm static pressure. The maximum center to center spacing between the two fans should be of 7.5m. The height of the fans is to be determined based on the plant height which is proposed to be grown in the green house. The fan blades and frame are to be made of non-corrosive materials like aluminum/stainless steel.

Design

The cross fluted cellulose pad is preferred. These are available mostly in 100mm thickness. One meter of pad height is given for every 20m of pad to fan distance. However, the fan to pad distance should not exceed 60m. The air flow rate should be of 75 cubic meter/minute/sq.m of pad. The water flow rate should be of 9 liters per minute/linear meter pad. The uniform distribution of water on pad is to be maintained.

Type 2:- Technical Standard of Fan and Pad cooling system Green House: With Fan Pad/Fogging system:

Sl.No	Item	Departmental Description				
01	Size:	According to requirement (As given in page no.13)				
02	Shape	Aero Dynamic along all four sides with curvature shaped hockey pipes of 48.0 mm OD GI Pipes with a view to reduce the impact of wind and consequent damage of Poly Houses Structure -Gutter Orientation – North South and may change according to wind direction -PAD should be in Wind direction and must have covered elevated balcony for shade				
03	Structure	Hot Dip Galvanized Tubular Structure of BIS standards. Galvanization of the structural members should not be less than 300 GSM(Grams per square meter)				
	Withstand to wind velocity	Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 km/hr or 36 Meters per second. Note: In case of high wind velocity zones, structure should withstand wind velocity upto 94 miles per/hr or 150 kms/hr or 42 /Meter per second.				
	Size of the structural members	Members Name	Outside Diameter (mm)	Thickness (mm)	Wt. per meter length (kg)	
		Columns	76	2	3.75	
		Top Purline	46(Ridge)	2	2.30	
		Gulter Purline	42/43 (Centre)	2	2.10	
		Top Arches of the truss	42	2	2.10	
		Bottom Chord of the truss Horizontal (G.I.Pipe)	60	2	2.85	
		Top chords and	48/43	2	2.302.10	

		trusses member				
		Internal Bracings of the truss –Pipe structural members to be fitted in plated nuts, bolts and washers without welding	33	2	1.60	
		Corridors / Balconies	60	2	2.85	
		Curtain Runner	42	2	2.10	
		Flap Control pipe	21	2	1	
		Curtain Salt	27	2	1.30	
		Cross Bracing	33	2	1.60	
		Not: Welded pipes should not be used for structure erection except bottom pipe of 8 m length.				
	Columns	76.00 2 mm thick				
	Purlin	48 mm OD/2.0 mm thick at ridge and 42/43 mm OD/2 mm thick for centre.				
	Trusses	Bottom horizontal 60 mm oD/2 mm thick GI Pipe top chords and truss members 48 mm OD/and 43 mm OD2.0 mm thick Bracing 32 mm OD/1.8 mm thick GI Pipe structural members to be fitted in plated nuts, bolts and washers without welding				
	Clamps and Nut Bolts	Well Compatible GI Clamps <120 GSM. 2mm thickness				
4	Grid Size	-8mx4m (Ideal size) -Size can be less depending upon space availability but not more 8mx4m grid size				
5	Balcony and Corridor	2 meter wide, vertical/curved pipe-60 mm OD/2 mm thick GI Pipe with 32 mm OD/1.8 mm thick horizontal GI pipe as supporting pipe as supporting pipe. Area covered by corridors should not be included while calculating the area under poly house				
6	Foundation	Pit size should be min.450 mm dia Depth 750 to 900 mm or suitably altered depending upon Ground strata / level so as to ensure safety and stability of the structure even under extremes wind conditions. Columns are fitted over ground “Inserts” and bolted to insert pipe of 60 mm OD/2 mm thick GI Pipe Length of insert 1200 to 1300 mm & filling the pit with 1:2:4 concrete hand mixed with appropriate Grade cement. Before doing the line out for the foundation ensure that slope of green houses ground along the gable should be 0% to 1% and				

		along gutter min 1% and max3%. If slope of ground exceeds this limit than ask grower to do the land development and maintain the slopes of the ground within the limits. Slope along the gable and gutter should be uniform. If developed ground has filling depth more than 200 mm then ask grower to do the flooding of water over the ground so that it should settle down. If the flooding is not done then there are chances of foundation piercing in to the ground after application of structural load even foundation may dislocate.
7	Gutter	Should be made of Galvanized sheet of 2 mm thickness in trapezoidal shape having 500 mm wide perimeter (Preferably of single length without joining Coil having 120 GSM Galvanization. It should be leak proof Min.1% slope required for the gutter. Assure uniform slope to gutter to avoid stagnant water in gutter to achieve maximum life of gutter. Gutter Orientation – North-South and may change according to wind direction.
	(a) Gutter Height	4m to 4.5 m
	(b) Gutter slope	1 to 1.5% to be provided in civil structural work
	Ridge Height/ Centre Height	Minimum 5 to 6.5 meter
8	Fasteners	Cold Galvanized well compatible M6 to M10 bolts & nuts 50 to 150mm long with plain washers as per requirement and with the best quality plating to have good anti-corrosiveness
9	Poly film	Technical specifications of polythene should be as per Indian Standard (IS 15827-2009) To select the proper film for poly-house is very important and which have direct relation with quality of the crop as well quantity of the produce polythene should be properly. UV stabilized at least there years. Thickness of polythene should be minimum 200 micron(0.2 mm) Option in green house film Compulsory properties • UV stabilization • Diffusion /Clear (light Transmission) • Optional Properties • UV Blocking /Antivirus • Sulphur Resistant • Thermic • Anti drip • Anti Mist • Anti Dust Manufacturing process

		Three layer/ Five layer Our crop wise recommendation of minimum properties of polythene is: 1. Dutch Roses: 200 micron thick, UV stabilized, UV Blocking (Not for bicolor roses) anti dust anti sulphur with cooling effect. Light diffusion should be maximum (upto 75 %) but it should not be less than 50% 2. Gerbers, coloured Capsicum. Anthurium and orchids: 200 micron thick UV Stabilized anti dust, with cooling effect. Light diffusion should be maximum (upto 75%) but it should not be less than 50% 3. Carnation 200 micron thick UV Stabilized anti dust with cooling effect where attitude is high polythene should be with IR protection.
10	Thermal Net	30 to 50% alluminate / thermal net as per requirement • Minimum 100GSM • Power operated crank mechanism should be provided for expanding and retracting the shade net
11	Poly fixing	C type profile made form Alloy Aluminum should have high strength with light weight – (approx 220-250gm/mtrs) smooth edges curve bottom proper for 1.25”to 3” pipes. Proper Channel for spring and suitable for double spring looking 0.9 mm thick. Sell Drilling Screw should be fixed on profile every 40 cm along the full length of the profile.
12	Spring Insert	A plastic coated GI wire spring of 2.2 mm diameter, having good elasticity should be used for longer life that transferring less het to the cladding materials as plastic films or shade net. If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then look it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. All spring must end inside the profile. Any spring outside profile must be either fixed inside or should be cut so that it does not damage the plastic in strong wind as it will initiate all the plastic being pulled out of profile.
13	Entrance	Double door entry Doors should be made of form FRP Sheets or polycarbonate sheets. Opening and closing is either hinged or sliding Min. width of door should be 1m and min height 2M. The door area should have 50 mm PCC Flooring over 75 mm thick sub base.
14	Civil Work	Wall on fan side will be 35 mm thick and 80 cm high and wall on pad side will be 23 cm on thick & 100 cm high from ground level in cm 1.6 with required foundation. All the walls will be plastered in cm 1.4 on top and sides.

		80 cm to 1m wide and 10 cm thick footpaths made of cement concrete ration of 1:2:4 should be provided as per the requirements.
15	Electrical fittings	Conduit and wiring as required for connecting light, fan, motor and pumping to main electrical supplies. Preferably use copper wire to withstand the load of the electrical appliances of Indian standards.
16	Climate Control System	
A	Fan-Pad System	-Numbers of Fan depends upon size of Fan-pad house and it should be capable of exhausting air volume in one minutes. - Exhaust Fans-50" however it depends upon size of fan-pad house with louvers. 1.5 HP-3 phase ISI standard electric motor. -Cellulose cooling pads of 1.8 meter height with 100 mm /150mm thickness covering the area properly. PVC water distribution system screen/disc filter valve and pumps etc. -Control panel with manual operation, temp and humidity sensors. -The necessary digital controller with sensory device & accessories of standard quality as per requirement should be provided to operate the fan & pad system for controlling temperature & humidity inside the Green house.
B	Fogging System	-In consist of four way anti leak fogger 28 iph flow rate (Working pressure should be mentioned at which we will be able to get required particle size fogger spacing along the lateral and lateral spacing) and particle size, 80-100 micron, 16mm lateral class-3 PVC pipe 6kg/cm ² , valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensor etc complete application rate 3mm/hr

Indicative Specifications of Protected Structures for 2014-15

A. Naturally Ventilated Polyhouse (NVPH)

1. Total Height of NVPH - 6 m to 7 m (Normally 6.5 m)
2. Height of Gutter – 4 m to 4.5 m (Normally 4.5 m)
3. Height of Top Vent- 1m (or 10% area of covered area whichever is higher)
4. Bay Size- 8 m x 4 m, 5 m x 5 m or 6 m x 4m
5. Corridors – Maximum 2 m all sides for area calculation.

FRAME COMPONENTS (GI PIPES)			
Sl.no.	Part Name	Specification	Description
1	Main Column	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	6 m to 7 m length
2	Small column along gable	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	4m to 5m length
3	Small Column along gutter	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	4 m to 5 m length
4	Foundation Stub	60 mm OD & 3.0 mm thick (@ 4.20 kg per meter)	1.2 m to 1.4 m
5	Corridor pipe along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	As per design requirement
6	Corridor pipe along gutter	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	As per design requirement
7	Small bottom chord along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	4 m
8	Big Bottom chord	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	8 m
9	End Purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
10	First top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	Top vent
11	Second top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	Top vent
12	4 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	Support to gutter
13	6 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	Last pipe towards slope
14	Curtain runner	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
15	Horizontal member	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
16	Long arc at end	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
17	Long arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
18	Short arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
19	Knee Bracing and	33 mm OD & 2.0 mm thick	

	Small Inclined strut	(@ 1.60 kg per meter)	
20	Big Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
21	Top chord runner in last bay	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	At both ends
22	Cross Bracing	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	At all top corners
23	Curtain pipe	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	Max length 40 m
24	Curtain pipe handle	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	
25	Flap control system	GI curtain pipe Guard 20/22 mm OD at all corridor pipes	At every 3m/4m

FIXTURES AND ACCESSORIES			
Sl.o.	Part Name	Specification	Description
1	Angle Bracket	ISA 40 X 40 X 3	
2	Full angle Cleat	ISA 40 X 40 X 3	
3	Half angle Cleat	ISA 40 X 40 X 3	
4	Flat Patti	25 MM X 5 MM	
5	76 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
6	76 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
7	60 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
8	60 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
9	43 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
10	43 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
11	T-Fixtures	33 mm OD & 2.0 mm thick	Galvanized
12	L-Fixtures	33 mm OD & 2.0 mm thick	Galvanized
13	Curtain Clamp	40 mm Width	Galvanized
14	Universal Joint	20 mm sq. bar	
15	Stud Cover	21 mm OD & 2.0 mm thick	Galvanized
16	Curtain Pipe Insert	21 mm OD & 2.0 mm thick	Galvanized
17	Self Trapping Screw	20 mm length	Galvanized
18	Bitumen Washer	3 mm thick	
19	Spring Insert	2.3 mm dia.	
20	Spring Insert (Platting)	2.3 mm dia.	
21	M 10 X 125	10 mm dia.	Galvanized
22	M 10 X 100	10 mm dia.	Galvanized
23	M 10 X 90	10 mm dia.	Galvanized
24	M 10 X 40	10 mm dia.	Galvanized
25	M 10 Nuts	10 mm dia.	Galvanized
26	M 10 washers	10 mm dia.	Galvanized
27	M 8 X 200	8 mm dia.	Galvanized
28	M 8 X 90	8 mm dia.	Galvanized
29	M 8 X 65	8 mm dia.	Galvanized
30	M 8 Nuts	8 mm dia.	Galvanized
31	M 8 Washers	8 mm dia.	Galvanized
32	M 6 X 75	6 mm dia.	Galvanized
33	M 6 X 20	6 mm dia.	Galvanized
34	M 6 Nuts	6 mm dia.	Galvanized
35	M 6 washers	6 mm dia.	Galvanized

36	GI Wire 3 mm trellis wire	3 mm dia.	
37	GI Wire 4 mm trellis supporting wire	4 mm dia.	
38	Pulley with clamp HDPE/MS	40 mm dia.	Galvanized
39	Rings stainless steel	20 mm dia.	
Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sr. No.	Description	Specification	
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Brick flooring with Plaster 15 mm thick	

PROFILE AND GUTTER			
Sl.o.	Part Name	Specification	Description
1	Profile	Aluminium profile	200 to 220 gr per running m 300 gr per running m
2	Gutter, 1-1.5% slope, max. gutter length 100 m.	Plastic drainage sheet (Single piece) supported by gutter purlins	Virgin, UV stabilized 1.4 mm thick and 600 mm wide
		GI drainage sheet 1.2 mm supported by gutter purlins (Single piece, if supported on arch)	500 mm wide
		GI drainage sheet 2 mm (if supported on column)	500 mm wide
3	Drainage water pipe	PVC 90/110 mm OD, 4 kg/sq centimetre pressure	
4	Zigzag spring insert	High carbon steel wire for repeated action, 2.3 mm dia	GI spring over 2 inch strip of new poly film over the main plastic in profile. (25% over lapping)

POLYTHENE		
Sr. No.	Description	Specification
1	Multi-layered Polythene from Agripolyane, Essen Multipack Ltd., Ginegar, Politive, PlasticaKritis, Soloplast	Fixed properties - 200 micron thick, UV stabilized, Thermic, diffused, Anti dust, Anti drip. Optional property - IR Reflective Cooling, Anti sulphur for the crops where sulphur consumption is high. For dutch- rose cultivation (As per farmer choice)

NETS		
Sr. No.	Part Name	Specification
1	40/50 mesh insect net to all four sides of below curtains for prevention of insect pests	UV Stabilized, 3.0 m width (height) (for vegetables & flowers) minimum 25 % of floor area. The company stitching below 2.0 to 3.2 m width are not allowed.
2	40/50/75 per cent shade nets to all four sides below curtains for prevention of insect pests.	UV Stabilized, 3.0 m width (height) (for flowers only) minimum 25 % of floor area
3	Shade Net (On top underneath polythene)	Non-motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or pulleys& nylon ropes. Shade Nets 40/50/75 per cent based on crop requirement of any color.
4	35% shade net/30 mesh insect net	UV stabilized to be fixed at top vent

Note 1:-For flower cultivation inside Polyhouse, Trellising system is optional. If not Installed, Rs.30 per sqm will be deducted.

Note 2:-For flower cultivation, inside Polyhouse, side ventilation can be of shade net with No trellising system, then, Rs. 50 per sqm will be deducted.

Note 3:-The width of insect nets rolls available is 3.6 meter or more. The stitching below 3.0 meter is not permitted. Above 3.0 m, if needed, the double stitching shall be done with machine using UV stabilized thread.

Note 4:-Foggers should be installed. If not installed, Rs.30 per sqm will be deducted.

Specific Requirements:

Sr. No.	Particulars	Specification
01	Gutter slope	The slope to the gutter side must be between 1.0 to 1.5%. If the gutter length is more than 40 m, then the slope should be preferable given to both sides to avoid damages/leakages.
02	Gable side slope	0 to 1.0 %
03	Foundations	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two holdfast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.
04	Bottom apron	UV stabilized woven polythene 160 GSM and a height of 1 m above ground and 50 cm buried below ground (Total width 1.5 m)
05	Side wall curtain	Insect net 40/50 mesh fixed and polythene movable fitted to curtain pipe with plastic/GI clamps and supported by GI guard 20/22 mm OD pipes 2.0 mm thick on corridor pipes
06	Orientation	The Polyhouse gutters should be preferably installed in North – South direction. All the vents should preferably face to East direction and the last vent of eastern direction to face to West direction.

Alternate Specifications with channel section

Sl. No.	Item	Indicative Specifications
I	Structure: Structure should withstand wind velocity as per Andhra Pradesh conditions, without weld.	
1	Columns	Channel/Rectangular Closed Pipe Structure: 80 mm x 50 mm/3.0 mm thickness (interior column)/10x50x80x50x10 mm (channel) and side columns of size 50 mm x 40 mm of 2.0 mm thickness (Exterior/sloping column)/10x40x60x40x10 mm (channel)
2	Purlin	Channel/Rectangular Closed Pipe Structure : 37 mm x 37 mm of 2.0 mm thickness/10x40x60x40x10 mm (channel)
3	Trusses	Channel/Rectangular Closed Pipe Structure: size 50 mm x 50 mm, bracing member 25 mm and 50 mm OD GI pipe, 2.0 mm thickness./10x50x70x50x10 mm (channel)

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouse/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm2	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm2	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm2	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm2	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm	Meter	36	42	60	110

	X 6 kg					
C	Filteration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

1. For any additional/optional item that is fitted/provided in structure by firm with the consent of farmer that shall not be part of cost norms*.
2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

General Conditions of Erection

1. 22 tons of material (steel) should be used for 1Acre area.
2. No pipes should be found welded. The bottom horizontal of 8 m length should be prepared by placing one feet section of lesser size. (inside & clamping it properly).
3. The apron plastic must be buried in the ground at least 50 cm from ground level.
4. The curtain pipe should be cut near the door in case door is placed at the centre of the side wall. The wall of poly house having more length, at centre of the wall a complete plastic without side curtain, insect net etc. should be fixed with separate profile and springs so that it can be removed as and when tractor operation is required in the poly-house.
5. Supplier should ensure checking of poly-house construction materials for specifications by department representatives after supply of materials at site.
6. If fixtures found rusted the structure will be considered incomplete.
7. Trellising system – Trellising wires of 2 mm gear wire or 3 mm dia high carbon steel to be used at 3 m height from ground level parallel to beds and number of wires will be 8 for 8 m span. The trellis support wires to the trellising wires should be of 4 mm or 3 mm gear wire rope and to be fitted at 4 m distance. The trellising wires should be connected to a Base wire connected to both ends to the periphery columns. The dia of such wires should be 8/10 mm. These wires should be fitted to anchor (hole pass bolt) buried in ground at each end. The dia of such anchor should be minimum 12

mm and it should be buried in ground at least 90 cm in ground with 1: 2:4 concrete. (A pit of 45 cm x 45 cm x 90 cm to be used for foundation and the anchor should be buried with holdfast.

8. In case of top poly-film fitted to the arches, if the length of top is more than 30 m, then the top plastic to be fitted to arch at every 24 m length by using profile and zig zag spring to avoid flapping of top plastic during winds.
9. Fixing of top poly-sheet should be fixed with profile and spring in the center of gutter length.
10. Self-drilling screw in profile should not be more than 30 cm apart
11. While installing the multilayer film, first insure that respective layers are facing the right direction as shown on film (e.g. inside out)
12. Provide a sample of one sqm size of poly-film, thermal net etc. having manufacturer's identification mark along with batch no.
13. Film should be tensioned tightly enough so that there should not be flapping during windy days.
14. The structural design should be sound enough to withstand wind velocity as per Andhra Pradesh conditions.
15. The companies shall get structural design verified from the structural engineer.
16. Regarding material used under MI component the firm will use BIS mark material.
The system should run smoothly and there shall be no leakage.
17. Farmer will arrange the water source, electricity and booster pump at his own level to operate the MI system.
18. The overall structure should perform satisfactorily in all respects.

**SHADE / NET HOUSE
SPECIFICATION FOR SHADE HOUSE**

Sl.No	ITEM	SPECIFICATIONS
01	STRUCTURE	
	SIZE	According to requirement
	Shape	As per design
	Withstand to wind velocity	-Structure may be design to withstand wind velocity upto 104 Km/hr
		-120Km/Hour per hrs in high wind velocity zone
	Foundation	2 mm thickness GI Pipes compatible with columns, length 1.2m
	Main Column	Size 60.OD, Thickness 2 mm, Wt per length 2.85 kg, length - 4m
	Purlins	Purlin GI pipes-size 42/43 OD/thickness 2mm, Wt per length 2.00/2.10kg length -4m purlin members-33/32 mm OD/2 mm thickness, Wt. per length 1.60 kg
	Comer	Size 60 OD, Thickness 2 mm, Wt. per length 2.30 kg, length 0.15m
	Four Way Pipe Couplers	Size 48 OD, Thickness 2 mm, Wt. per length 2.30kg, length- 0.15m
	Five Way Pipe Couplers	Size 48 OD, Wt. per length 2.30 kg Thickness 2 mm, length- 0.15m
	Nut Bolts	Size 3/8"
	Grid Size	4x4, 8x4,4x6 (m)
	Gable length	4.0m,
	Centre Height	* Flat Structure -4m
		*Hut /dome type structure – Centre height -4m, side height - 2.5 m
2.	Aluminum Profile	C type Aluminum profile to fix shade net to the structure by means of self tapping screws. Weight of aluminum profile is 200-220 gm/ meter. Self Drilling Screw should be fixed on profile every 40 cm along the full length of the profile.
3.	Spring Insert	A coated spring I preferable compared to cold galvanized spring as a coated spring transfer less heat to the plastic and thus enhances the life of the plastic.

		If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. Wire material should be high carbon spring steel with spring action.
4.	Shade Net	UV stabilized, ranging from 30% to maximum 75% GSM shade depending upon the crop, made up of ISI/applicable national standard, white/green/ black/suitable colour.
5.	Door	Polycarbonate/polythene sheet door with 1m widths and 2m height and another door of 1m X2 m Box section frame is embedded inside for the strength.
6.	Anti-Room	Anti-room of size 4m X 3 m attached to net house.
7.	Civil work/foundation	Cement concrete 1:2:4 block of size 40cm X 40 cm X 90 cm for embedding vertical poll/pipe of shade net, subject to revision as per requirement of site.
8.	Overall slop	1 to 1.5%
	APRON	Use of APRON in shade net

B. Shade net House/Insect House (Dome shaped)

Sl. No.	Particulars	Description
1	Area in sqm	1000 to 4000 sqm
2	Length of structure	As per design
3	Width of the structure	As per design
4	Grid	4 m x 6 m
5	Straight Corridors	Maximum 2 m all sides for area calculation

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm
2	Net house column- centre	4 m	60 mm OD	2 mm
3	Top purlins	4 m and 6 m	43 mm OD	2 mm

4	Clamps and nut bolts	As per requirement		
5	Corridors	2.0 m	60 mm OD	2 mm
6	Horizontal members	1 to 1.5 m	42 or 33 mm OD	2 mm
7	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm
8	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm
9	Arches	As per requirement	42 mm OD	2 mm
10	Column- side	3m	60 mm OD	2 mm

Other parts of the structure:-

Sl. No.	Particulars	Description
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings. Shade Nets 40/50/75 % based on crop requirement of any color.
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action.
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20

		cm apart in concrete starting from 20 cm from base.
6	Top purlins	To be fixed on each column on top (4 m x 6 m)

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)		
Sl. No.	Description	Specification
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)
3	Door size	1.2 m x 2 m; Door of GI square pipe
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized
5	Half part of door (Downside)	Aluminium sheet
6	Upper half part of door	Poly carbonate sheet 5 mm thick
7	Flooring	Bricks flooring with plaster 15 mm thick

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouses/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2

8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm2	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm2	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110
C	Filtration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

1. For any additional/optional item that is fitted/provided in structure by firm with the consent of farmer that shall not be part of cost norms*.
2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

General conditions of Erection

1. No pipes should be welded as all length GI pipes are available in the market.
2. The net must be buried in the ground at least 50 cm from ground level.
3. The main column and small column must touch the concrete of the foundation and the foundation pipe should not be visible. In other words, the foundations should be leveled.
4. Supplier should ensure checking of net-house construction materials for specifications by department representatives after supply of materials at site.
5. Trellising system – Trellising wires of 2 mm gear wire or 3 mm dia high carbon steel to be used at 3 m height from ground level parallel to beds and No of wires will be 6 for 6 m span. The trellis support wires for support to trellising wires should be of 4 mm or 3 mm gear wire rope and to be fitted at 4 m distance. The trellising wires should be connected to a Base wire connected to both ends to the periphery columns. The dia of such wires should be 8/10 mm. These wires should be fitted to anchor buried in ground at each end. The dia of such anchor should be minimum 12 mm and it should be buried in ground at least 90 cm in ground with 1:2:4 concrete. A pit of 45 cm x 45 cm x 90 cm to be used for foundation and the anchor should be buried with hold fast.
6. If fixtures found rusted the structure will be considered incomplete.
7. Regarding material used under MI component the firm will use BIS mark material. The system should run smoothly and there shall be no leakage.
8. The overall structure should perform satisfactorily in all respects.

C. Shade net House/Insect Net House (Top

Flat)



Sl. No	Particulars	Description
1	Area in sqm	1000 to 4000 sqm
2	Length of structure	As per design
3	Width of the structure	As per design
4	Grid	6 m x 6 m
5	Straight Corridors	Maximum 2 m all sides for area calculation

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm
2	Net house column	4 m	60 mm OD	2 mm
3	Top purlins	4 m and 6 m	42/43 mm OD	2 mm
4	3/4/5 way	200 mm each side	43 mm OD	2 mm
5	Clamps and nut bolts	As per requirement		
6	Corridors	2.0 m	48 mm OD	2 mm
7	Horizontal members	1 to 1.5 m	42 mm OD	2 mm
8	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm
9	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm

Other parts of the structure:-

Sl. No.	Particulars	Description
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum/GI profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or Pulleys with nylon rope. Shade Nets 40/50/75 % based on crop requirement of any color.
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action. The net is to be fixed at every 4 m on top purlin.
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.
6	Top purlins	To be fixed on each column on top (6 m x 4 m)

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)		
Sl. No.	Description	Specification
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)
3	Door size	1m x 2 m : Door of GI square pipe
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized
5	Half part of door (Downside)	Aluminium sheet
6	Upper half part of door	Poly carbonate sheet 5 mm thick
7	Flooring	Bricks flooring with plaster 15 mm thick

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouses/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Sub main Flush Valve 40mm	Nos.	2	2	2	2
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110

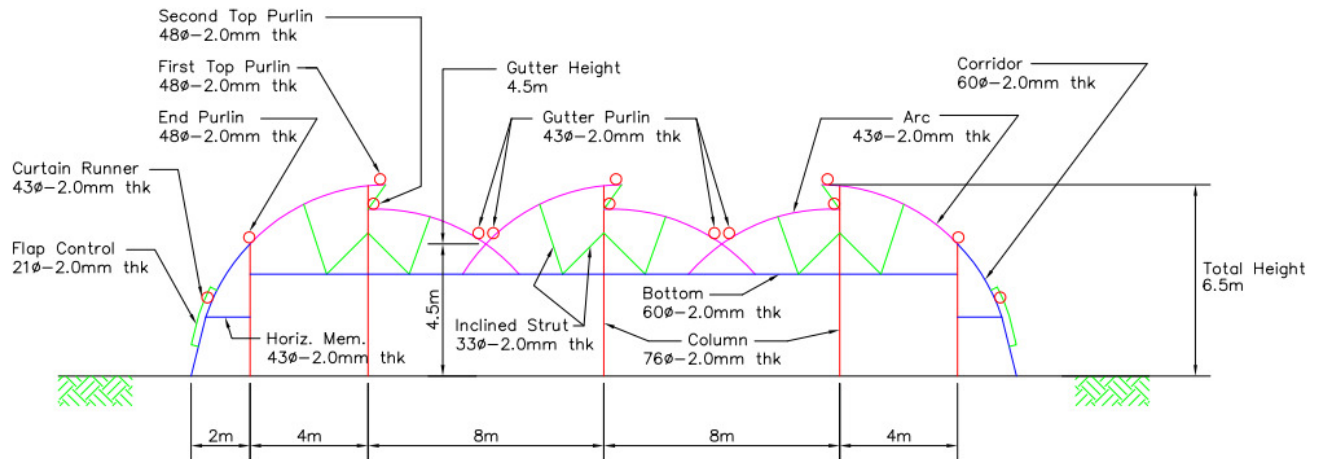
C	Filteration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

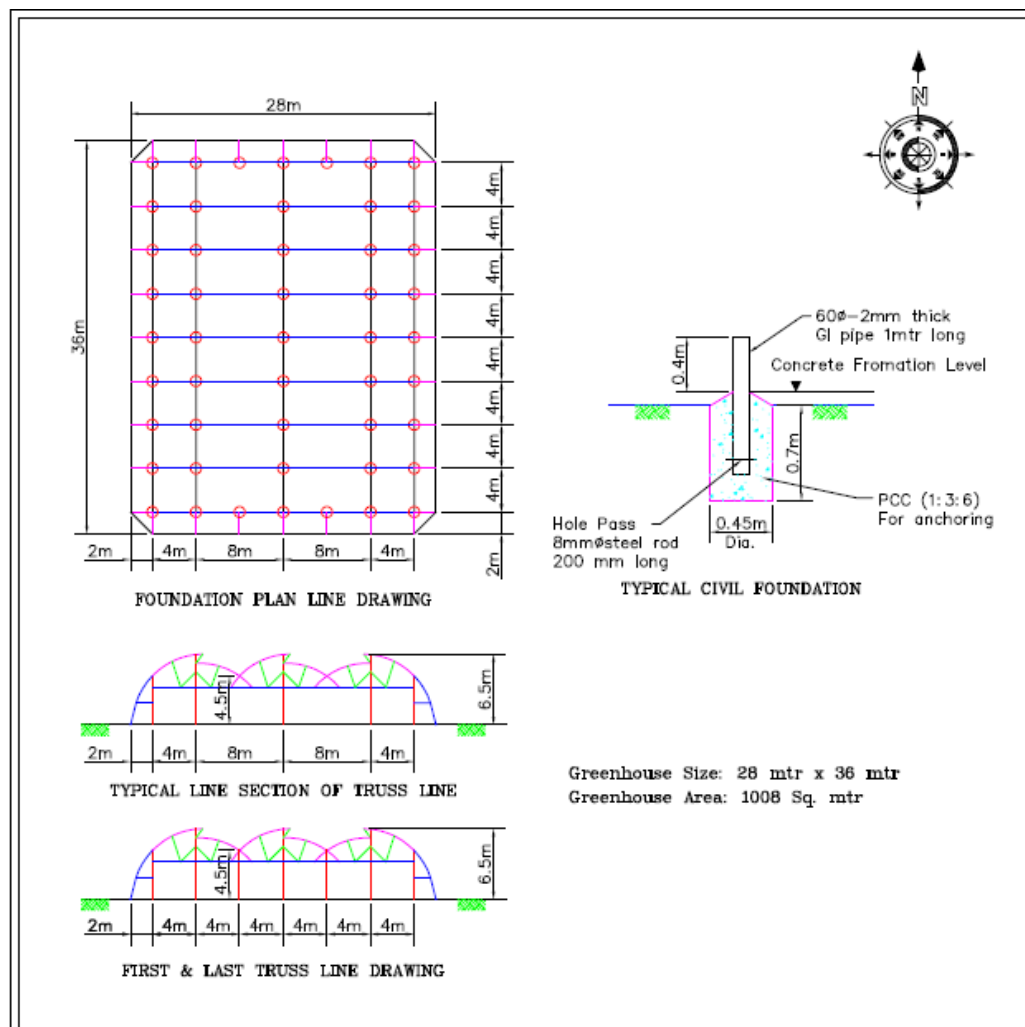
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2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

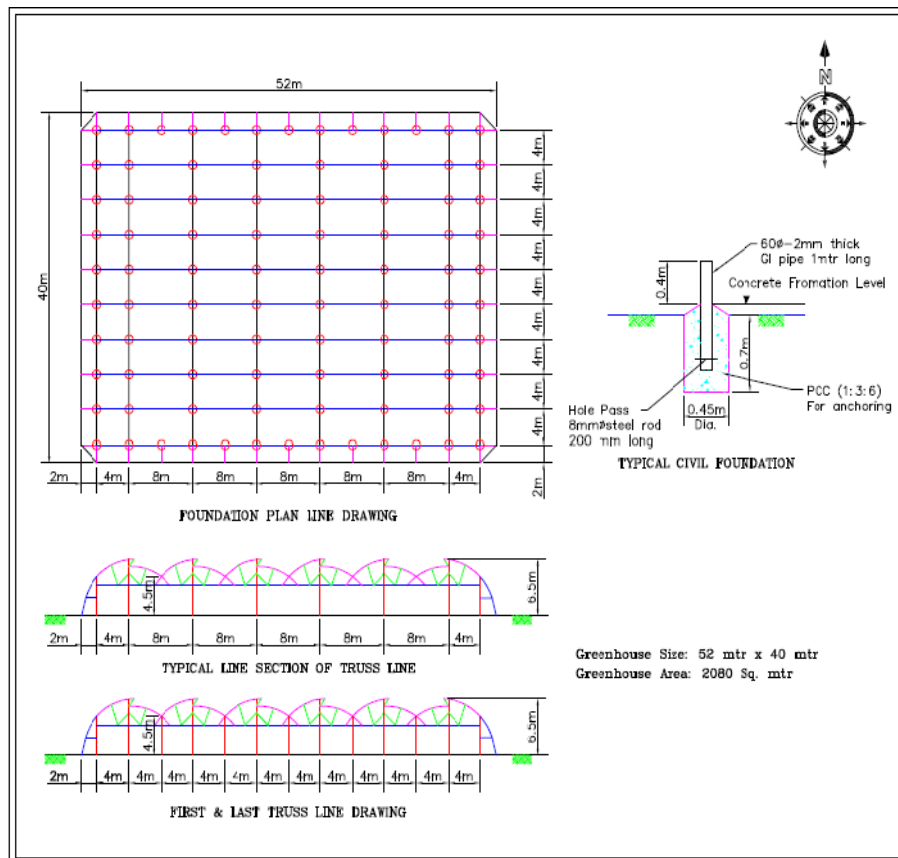
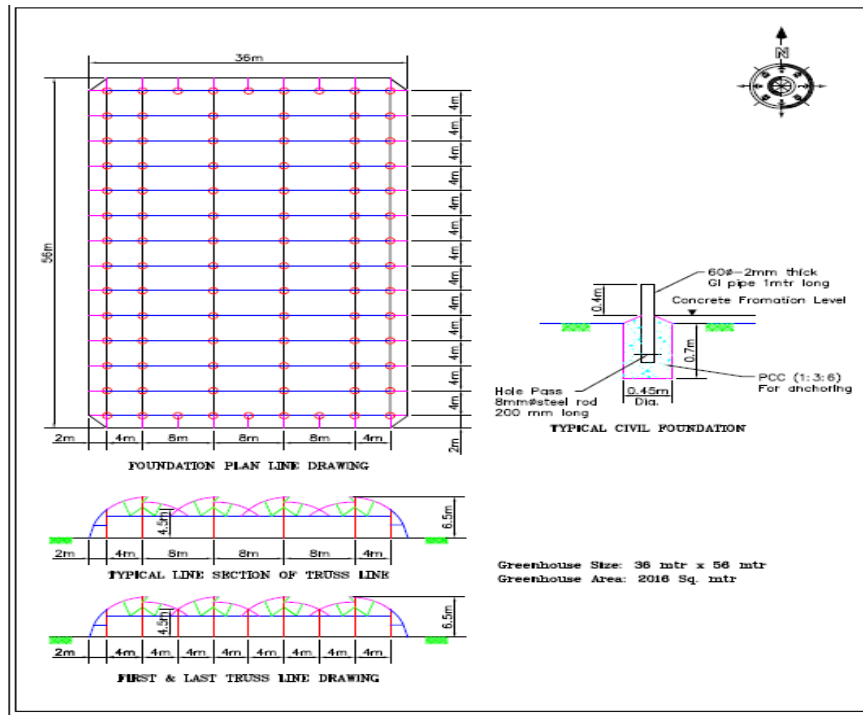
General conditions of Erection

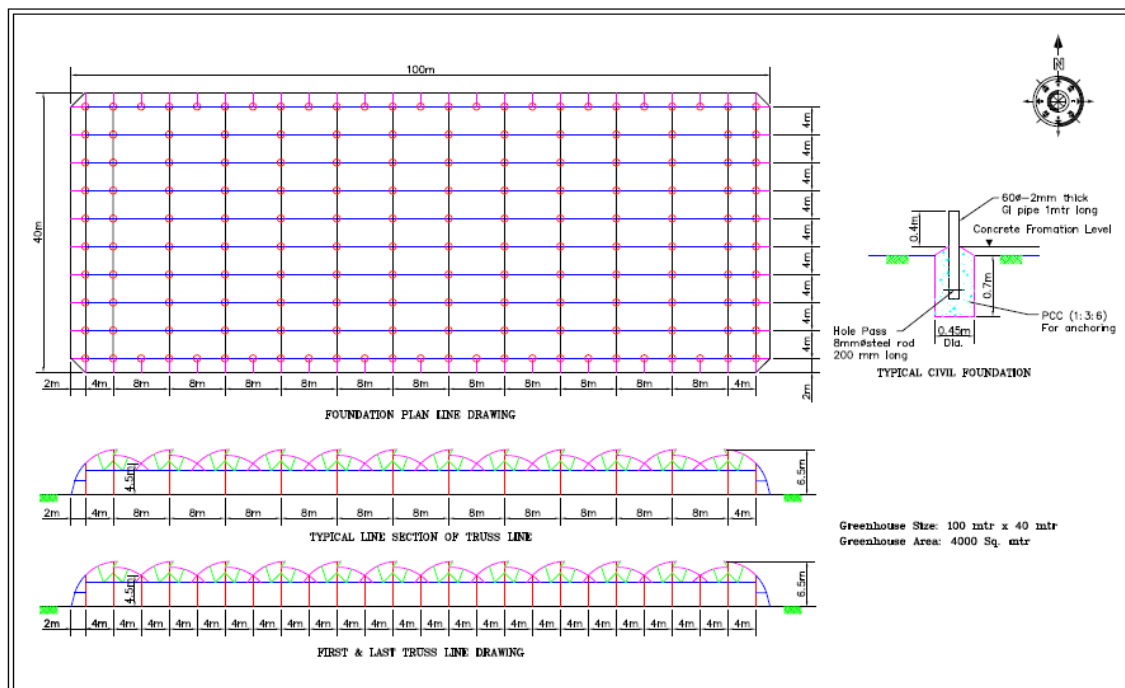
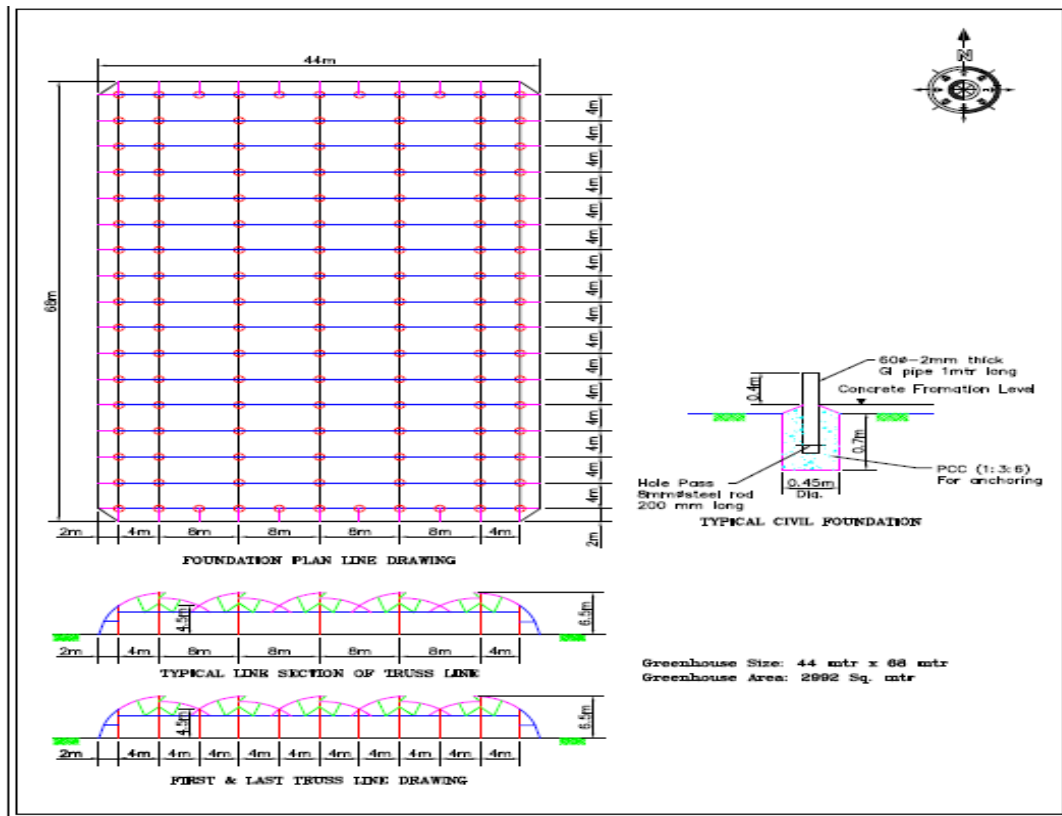
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4. Supplier should ensure checking of net-house construction materials for specifications by department representatives after supply of materials at site.
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8. The overall structure should perform satisfactorily in all respects.



TYPICAL LINE SECTION OF TRUSS LINE

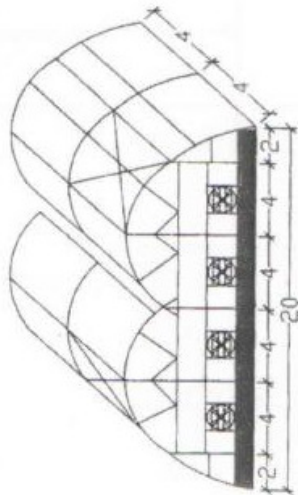




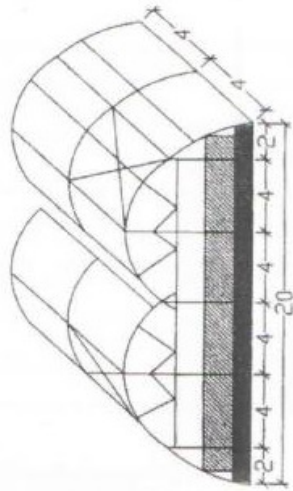


Section-6 : Design

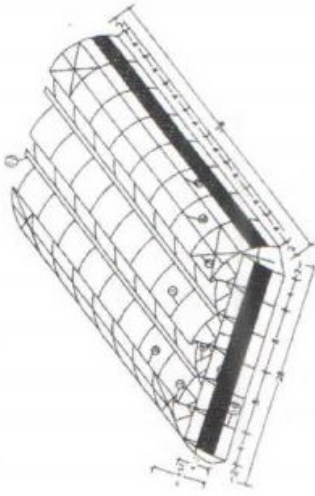
Fan Side Elevation



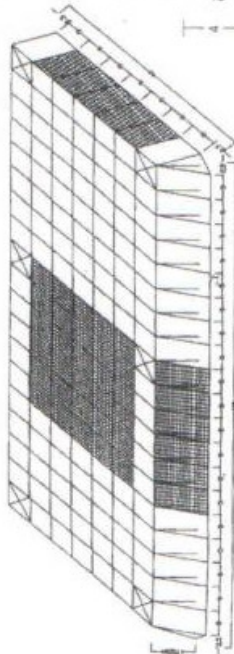
Pad Side Elevation



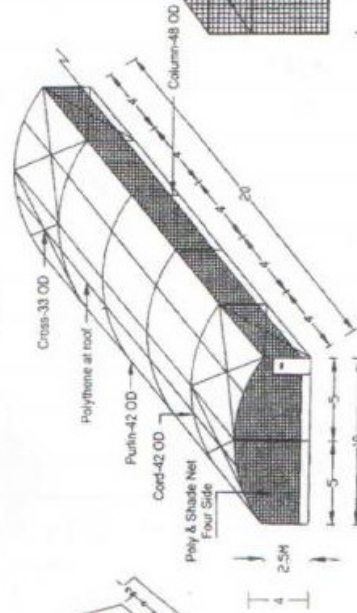
Naturally Ventilated



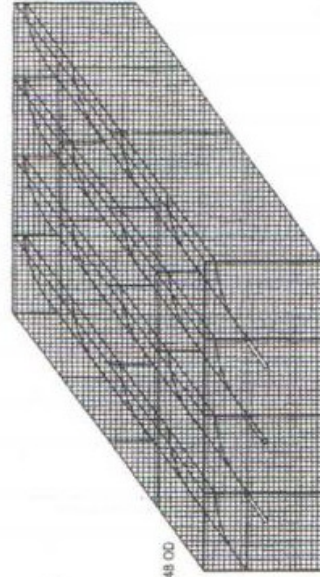
Shade House



Poly Tunnel Type



Shadow Hall



MULCHING

Mulching is a practice followed for conservation of moisture, to check weed growth and to improve the quality of Horticulture produce.

Thickness of Film:

In plastic mulching, the thickness of mulch film should be in accordance with type & age of crops. Economics suggest that the film thickness should be the minimum possible commensurate with desired life & strength. The recommended thickness of mulch films for different crops is as under:

Thickness (microns)	Crops Recommended
20-25	Annual - short duration crops
40-50	Biennial - medium duration crops
50-100	Perennial - long duration crops

Extent of Surface to be Covered under Film:

% Coverage	Crops Recommended
20-25	All creeper crops
40-50	Initial stage of orchard crops
40-60	Fruit crops & cucurbitaceous
70-80	Vegetables, Papaya, pineapple etc.
90-100	Soil Solarization

Mulching area should preferably be equivalent to the canopy of the plant (larger the canopy, larger the area of mulching and vice versa).

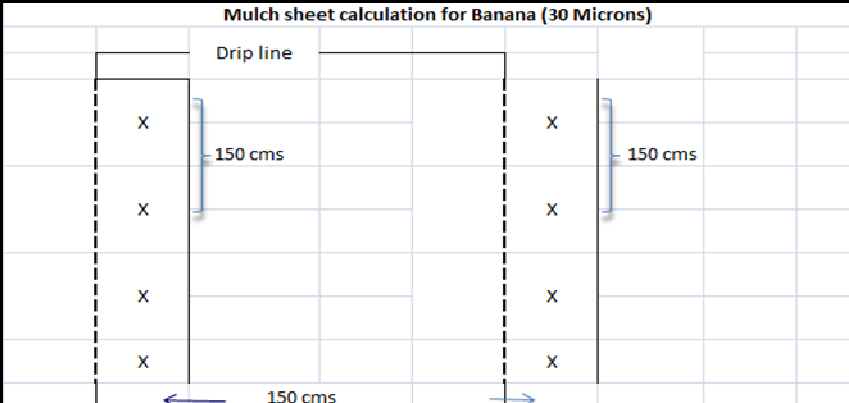
Calculation of Mulch Film Requirement (Approximately):

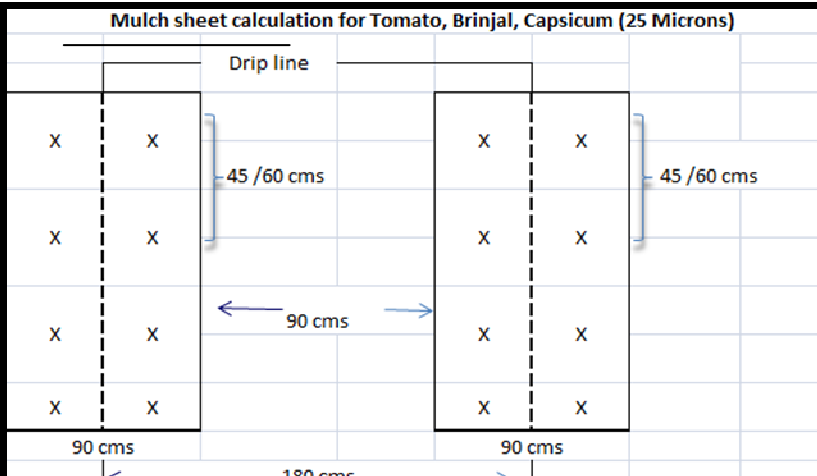
Thickness			Area coverage (m²/kg)	Weight (Gram/m²)
Micron	Gauge	mm		
7	28	0.007	144	6.9
20	80	0.02	54	18.4
25	100	0.25	42	23
40	160	0.04	26	38
50	200	0.05	21	46
100	400	0.10	11	93

Indicative Cost of Plastic Mulching:

On the basis of 80% coverage of area under the film, indicative cost of mulching for Horticulture crops would be approximately Rs. 32,000/- per ha.

Examples for calculation of requirement of Mulch Sheet :

Mulch sheet calculation for Banana (30 Microns)					
					
1 ac drip mlaterals =	$\frac{4000 \text{ sqmt}}{\text{Distance between laterals}}$	=	$\frac{4000}{1.5}$	=	2666 mt
1 ac mulch sheet =	mulch sheet width	X	Drip Lateral length	=	1.2X2666 = 3200 sq mt

Mulch sheet calculation for Tomato, Brinjal, Capsicum (25 Microns)					
					
1 ac drip mlaterals =	$\frac{4000 \text{ sqmt}}{\text{Distance between laterals}}$	=	$\frac{4000}{1.8}$	=	2222 mt
1 ac mulch sheet =	mulch sheet width	X	Drip Lateral length	=	1.2X2222 = 2666 sq mt

Terms & Conditions:

1. Farmers once availed subsidy is not eligible.
2. 50% cost limited with maximum limit is 2 ha / beneficiary.
3. The selected beneficiaries should be given training programme on concept of Mulching, benefits of mulching, selection of mulch sheet, quantity required and gauge of mulch sheet.
4. **Farmers will be given choice to procure the mulching sheet of their own choice by incurring full cost of mulching material. After verification of the vouchers and physical verification in the field, the assistance will be online transferred to the farmers account as per the eligibility and cost norms.**
5. A display board depicting "Department of Horticulture" (MIDH, Assisted Green House with logo of NHM).
6. Only Horticulture Crops are eligible for assistance.
7. DMC approval to be obtained for identified beneficiaries and for final release of assistance.
8. The scheme shall be implemented for promoting intensive cultivation of vegetables in a cluster mode by giving due priority to SF / MF and SC & ST.
9. Documentation with photo graphs after laying out of mulch.
10. Application registration in Hort net should be done by the concerned HO.
11. Uploading the bills and field photos in hortnet should be done by the HO/ADH for release of subsidy to the beneficiary through Hort net.

WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED FOR MULCHING

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-I	Farmer
2	Pattadar Pass Book Copy	
3	Application registration in Hortnet	
		HO /Farmer
4	District Mission Committee Approval	ADH
5	Organization of Training Programme to identified beneficiaries	HO / ADH
6	Issue of Administrative Sanction	ADH
7	Laying out of Mulching	Farmer
8	Submission of bills and raising of invoice	Farmer / HO
9	Constitution of Joint Inspection Committee	ADH
10	Joint Inspection Report – Format –VI	Committee Members
11	Obtaining DMC approval for sanction and release of assistance	ADH
12	Sending of proposals to State MIDH Cell for release of Subsidy	ADH
13	Uploading the bills and field photos in Hortnet for release of subsidy	HO/ADH
13	Online transfer of assistance to beneficiary	State MIDH cell

Cost of Planting Material of High Value Vegetables & Flowers grown in Poly Houses

Cultivation of High value Vegetables & Flowers is cost intensive hence provision is made for meeting the cost of cultivation under Green Houses & Shadenet houses which includes cost of planting material and inputs.

Terms & Conditions:

- Assistance should be extended for High value flowers and vegetables under Green houses.
- Preference may be given to the farmers who have availed assistance for erection of Green House under MIDH.
- DMC approval has to be obtained for the identified beneficiaries.
- Subsidy will be released through online transfer after joint inspection by the committee members and also uploading the bills and field photos in Hort net.
- In case if the same farmer utilizes both the subsidies under Green House and Cost of Planting material, a display board depicting logo of NHM and “Department of Horticulture” & MIDH assisted Green House with planting material should be displayed. If the farmer has erected Green House without any assistance from MIDH then the board should depict logo of NHM and Department of Horticulture & MIDH assisted planting material.
- Documentation through photo graphs at the time of planting and at the time of harvesting.
- Photographs should clearly depict the unit, plant material grown, Display board, farmer and all members of joint inspection team.

**Indicative cost for Cultivation of Flowers & Vegetables under
Poly Houses :**

Sl.No	Crops		Total Unit Cost (Rs. /Sq.mtr)	Pattern of Assistance (Rs./ Sq.mtr)
1	Vegetables	Capsicum	Rs. 140/-	50% of cost limited to 4000 sq.mtr per beneficiary
		Tomato	Rs. 140/-	
2	Flowers	Rose	Rs. 426/-	50% of cost limited to 500 sq.mtr per beneficiary
		Gerbera & Carnation	Rs. 610/-	50% of cost limited to 4000 sq.mtr per beneficiary
		Orchid & Anthurium	Rs. 700/-	

Component wise indicative cost of planting material and input of high value vegetables grown in poly houses : (500 sq.mtrs)

S. No.	Description	Amount	Unit Cost
1	Bed Preparation & Seed / Plant Material	20000	Rs.140/- Sq.Mt.
2	Trellies	8500	
3	Fertilizers	20000	
4	PP Chemicals	8500	
5	Mulching	6000	
6	Labour cost (Weeding, Pruning, Training)	7000	
		70000	

The HO / ADH should obtain required documents / bills for all the above components for release of assistance.

**Component wise indicative cost of planting material and input of flowers for
poly houses**

S. No.	Description	Rose for 3500 plants in 500 Sq.mts.	Gerbera for 3500 plants in 500 Sq.mts.	Carnation for 10000 plants in 500 Sq.mts.	Orchid & Anthurium for 4000 plants in 500 Sq.mts.	Unit Cost (Rs. /Sq.Mt) As per MIDH guidelines
1	Plant material	100000	110000	100000	155000	For Rose Rs.426/- Sq.mt.
2	Bed preparation	15000	15000	15000	15000	
3	Manures & Fertilizers	31500	50000	55000	50000	
4	Plant protection chemicals	31500	50000	55000	50000	For Gerbera & Carnation Rs.610/- Sq.Mt
5	Pruning Harvesting	20000	40000	40000	40000	
6	Intercultural operations	15000	40000	40000	40000	
	Total	213000	305000	305000	350000	for Orchid & Anthurium Rs. 700/- sq.mtr

The HO / ADH should obtain required documents / bills for all the above components for release of assistance.

**WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED FOR AVAILING
SUBSIDY FOR PLANTING MATERIAL**

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-VII	Farmer HO/Farmer
2	Soil & Water Analysis Water Report.	
3	Pattadar Pass Book Copy	
4	Registration in hortnet	
5	District Mission Committee Approval	ADH
6	Issue of Administrative Sanction	ADH
7	Planting	Farmer
8	Submission of bills / invoices	Farmer / HO
9	Constitution of Joint Inspection Committee	ADH
10	Joint Inspection Report – Format -VIII	Committee Members
11	Sending of joint inspection report to State office for release of Subsidy	ADH
12	Obtaining DHM approval for sanction and release of assistance	ADH
13	Uploading the field photos and bills in hortnet	ADH
14	Online transfer of assistance to beneficiary	State MIDH Cell

FORMAT – I

Application for Availing Assistance / Subsidy Under MIDH
Through State Horticulture Mission

Recent
Passport Size
Photograph

Name of the Scheme: Protected Cultivation

Component: GREEN HOUSE / SHADENET HOUSE / MULCHING

1	Name of the Farmer	:	
2	Father / Husband Name	:	
3	Caste (SC/ST/BC/OC)	:	
4	Address	:	
	Phone / Cell No.	:	
5	Land records with Extent in Acres / Ha. (Copy of Pass Book / Adangal)	:	
6	Area Proposed in Sq.mtrs./Ha.	:	
7	Account No & Name of the Bank & Address	:	
8	Proposed crop	:	
9	Source of Irrigation (Open well / Bore well)	:	
10	Soil & Water Analysis Soil PH & EC Irrigation water PH & EC Soil & Water Analysis reports to be enclosed. (Not needed for Mulching)	:	
10	Estimated cost of the project Details of the project by the technical consultant to be enclosed.		
11	Whether any Govt. Subsidy availed previously	:	
12	Any other relevant information	:	

Declaration

I, _____

declare that the particulars furnished above are true to the best of my knowledge and I promise that the benefit obtained from State Horticulture Mission will be used for the purpose for which it is given and in case of misuse I am liable for any action deemed to be fit by Govt. of Telangana., including recovery of the subsidy amount with 12% interest to the Government.

Signature of the Farmer / Entrepreneur.

Recommendations of the

Horticulture Officers _____.

Enclosures:

Assistant Director of Horticulture

1. Pattadar Pass Book
2. Detailed Project Estimate
3. Soil & Water Analysis
4. Affidavit

FORMAT – II

AFFIDAVIT (Rs. 100/- Stamp Paper)

I / We _____ (Name of the Promoter / Director) son of _____
Father's Name) resident of _____ (residence address) do hereby
solemnly affirm and declare here under.

1) That I am the director of _____, (name of the beneficiary) having its
registered office at _____, (office address of beneficiary) and am fully
aware of the facts relating to the setting up the Green House at _____
(location of the Green House) for _____ (activities to be undertaken by
Green House) and the application made to MIDH for availing assistance under
Developmental Schemes _____

2) That the terms and conditions of the scheme of MIDH under which an application has
been made by the applicant have been properly read and understood by me and I affirm that
the Green House / proposal / scheme comply with the terms and condition of MIDH and the
application has been made in the correct applicable scheme.

3) That the proposed activities to be undertaken by the Green House / proposal / scheme are
covered under the above scheme of MIDH and no part of the scheme / infrastructure of the
Green House 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.

4) That the information provided in the application for availing assistance under
developmental schemes – _____ is true and correct to the best of my
knowledge and belief. The estimates of the cost of Green House / proposal / scheme,
financial viability and operating results have been worked out / computed as per the rule and
generally accepted principles and norms in this regard.

5) No Subsidy / grant – in – aid has been availed by the promoters / directors / partners /
proprietors for this new project and component thereof from central Govt. or any its agencies.

6) I / We also solemnly affirm that the proposed activity in the application for availing
assistance under development Schemes _____ is a completely new
activity and not a pre – existing activity or any Component thereof and further I assure that
the unit will be utilized for the same activity for which the assistance is sought from the MIDH
through State Horticulture Mission of Telangana for the economic period of 15 years. In case,

if the unit is misused I am liable for any action deemed to be fit by the Govt. of Telangana including recovery of the assistance amount extended. The information furnished in the application dated _____ is true to the best of my knowledge and belief and nothing material has been concealed.

7) In case of concealment of any facts in this regard, the MIDH would have right to cancel my application out right at any stage.

8) I will display a sign board depicting “Department of Horticulture” (MIDH, Assisted Green House) with logo of NHM.

9) The release of subsidy is subject to actual expenditure, receipts, inspection, MIDH norms etc., In case of any discrepancy / dispute the decision of the Mission Director & Director of Horticulture is final.

10) I agree and resolve that the department reserves the right to modify, add or delete any term/ condition without assigning any reason thereof and shall also have right to pre and post inspect / monitor the Green House and verify the related records at any time during the economic life of the Green House by the concerned officers.

DEPONENT VERIFICATION

Verified on solemn affirmation at _____ that the content of the above affidavit are true to the best of my knowledge and belief and nothing material has been concealed.

DEPONENT / COMPETENT AUTHORITY

(To be signed by Notary with seal)

Format – III

PROCEEDING OF THE DISTRICT COLLECTOR, _____ DISTRICT

Present :

Proce.No. State Cell-I/ G.H / _____ / 2014,

Dt. _____ 2014.

Sub:- Horticulture Dept- District – State Cell – 2014-15 – Construction of Green Houses under Protected Cultivation – Administrative Sanction Orders - Issued.

Ref: 1. Annual Action Plan 2014-15.

2. **Application of Sri..... S/o.,(V)**
....., **(M)**District received through **H.O.**,
3. Note Approved by the District Collector,Dist. **Dt.**,
&&&

ORDERS:

Sri....., S/o.,(V),(M)
.....**DISTRICT Sy.No.....**, has informed that , you have been selected as beneficiary for Construction of Green House under Protected Cultivation under State Horticulture Mission -2014-15 for the construction of Green House for,**Sqmt** and the eligible subsidy is 50% of the total Cost subject to a maximum Rs. 467/- Per Sqmt limited to 4000 Sqmts s for each beneficiary.

In view of the above, Administrative sanction is by accorded to him for Construction of Green House under Protected Cultivation under State Horticulture Mission -2014-15 for the construction of Green House for, **Sqmt** and the eligible subsidy is 50% of the total Cost subjective a maximum Rs.467/- Per Sqmt limited to 4000 Sqmts for the beneficiary duly following the conditions furnished here under to release subsidy by the Department of Horticulture.

The subsidy will be released subject to the following terms & conditions:-

1. The farmer should follow the Technical Specification for construction of Green House under Protected Cultivation issued by the MIDH as follows.
2. The farmer should display the board and place in front of the Green house. The Logo of **NHM** and the matter mentioned below.



**Financial Assistance by MIDH & Department of Horticulture
TELANGANA**

Name :	S/o :
Village :	Mandal :
District :	Component :
Area In Sqmt :	Assistance :

3. The farmer should obtain a certificate undertaking with the following matter from Green House fabricated firm “Certified that the material supplied and Constructed the Green house as per the guidelines and standard fixed by the MIDH and the area constructed in ----- Sqmts in the field of Sri/ Smt_____ S/o, W/o. _____ in _____ Village of _____ Mandal of _____ DISTRICT. ”
4. The farmer should submit affidavit on Rs. 100/- Stamp Paper with notary about the Green House constructed by him (Copy enclosed).
5. The beneficiary should undergo 7 days training as per the Schedule given by the ADH.
6. Farmer is responsible for the installation of the Green House and for the payment to the fabricator.
7. After completion of work the subsidy will be released to the farmers based on the recommendation of ADH along with the Joint Inspection team certificate.
8. Subsidy will be released through online transfer to the beneficiary through the ADH, after joint inspection by the committee members.

(APPROVED BY THE DISTRICT COLLECTOR,DISTRICT)

Asst. Director of Horticulture

..... DISTRICT.

To

Sri..... S/o., (V),, (M)
..... DISTRICT

Copy to Horticulture Officer,....., DISTRICT

Format - IV

Dt:2014

To

The Asst. Director of Horticulture

..... District

COMPLETION & UNDERTAKING

This is to certify that as per the guidelines and technical standards of MIDH the construction of Green House was completed. The following materials were supplied for construction of Green House in an area of sq.mtrs in..... survey no..... of Sri....., S/o.....,(V),(M), District

S.No	Name of the Item	Quantity	Rate	Total Amount
1				
2				
3				
4				
5				
	Total			

Signature of Farmer:

Signature :

Name :

Seal :

Cell No. :

Format – V

**FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF GREEN HOUSE / SHADENET HOUSE BY THE
COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE
MISSION OF TELANGANA.**

Name of the Component : GREEN HOUSE / SHADENET HOUSE

Sl.No.	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Sq.mtrs .	Crop	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note : Separate Joint inspection report has to be furnished HO wise for Green House / Shadenet House.

Certificates:

- 1) This is to certify that the above farmers have installed Green House / Shadenet House as per the Technical standards of MIDH.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 9 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 10.
- 4) The subsidy amount of Rs. _____/- may be released

Promoter**Project Engineer****HO****ADH****PD, MIP / DDH****MIP**

Format – VI

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF MULCHING BY THE COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE MISSION OF TELANGANA.										
Name of the Component : Mulching										
Sl.No.	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Ha.	Crop	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note : Separate Joint inspection report has to be furnished HO wise for Mulching.

Certificates:

- 1) This is to certify that the above farmers have installed Laid Mulch Sheet as per the norms of MIDH.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 9 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 10.
- 4) The subsidy amount of Rs. _____/- may be released

HO

ADH

FORMAT – VII

Application for Availing Assistance / Subsidy for Planting Material Flowers / Vegetables under Protected Cultivation Through State Horticulture Mission

Recent
Passport Size
Photograph

Name of the Scheme: Protected Cultivation

Sub- Component :Cost of Planting material and input for high value vegetable & flower

1	Name of the Farmer	:	
2	Father / Husband Name	:	
3	Caste (SC/ST/BC/OC)	:	
4	Address	:	
	Phone / Cell No.	:	
5	Land records with Extent in Acres / Ha. (Copy of Pass Book / Adangal)	:	
6	Area under Protected Cultivation in Sq.mtrs./Ha.	:	
7	Account No & Name of the Bank & Address		
8	Proposed crop and No. of Plants	:	
9	Source of procurement of planting material		
10	Source of Irrigation (Open well / Bore well)	:	
11	Soil & Water Analysis Soil PH & EC Irrigation water PH & EC Soil & Water Analysis reports to be enclosed.	:	
12	Whether any Govt. Subsidy availed previously		
	Any other relevant information	:	

Declaration

I, _____

declare that the particulars furnished above are true to the best of my knowledge and I promise that the benefit obtained from State Horticulture Mission will be used for the purpose for which it is given and in case of misuse I am liable for any action deemed to be fit by Govt. of Telangana including recovery of the subsidy amount with 12% interest to the Government.

Signature of the Farmer / Entrepreneur.

Recommendations of the

Horticulture Officers _____.

Enclosures:

Assistant Director of Horticulture

1. Pattadar Pass Book
2. Detailed Project Estimate
3. Soil & Water Analysis
4. Affidavit

Format – VIII

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF COST OF PLANT MATERIAL AND INPUT OF FLOWERS & HIGH VALUE VEGETABLES BY THE COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE MISSION OF TELANGANA.

Name of the Component :

	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Sq.mtrs.	Crop	No. of Plants	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
	2	3	4	5	6	7	8	9	10	11	12

**Note : Separate Joint inspection report has to be furnished HO wise for Plant Material (Flowers) / Vegetables grown under Poly House / Shadenet House/
Certificates:**

- 1) This is to certify that the above farmers have planted flowers / high value vegetables.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 10 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 11.
- 4) The subsidy amount of Rs. _____/- may be released.

FARMER

HO

ADH

Check List For Naturally Ventilated For Poly-Houses

FRAME COMPONENTS (GI PIPES)			
Sl.no.	Part Name	Specification	Present or Not
1	Main Column	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
2	Small column along gable	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
3	Small Column along gutter	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
4	Foundation Stub	60 mm OD & 3.0 mm thick (@ 4.20 kg per meter)	
5	Corridor pipe along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
6	Corridor pipe along gutter	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
7	Small bottom chord along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
8	Big Bottom chord	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
9	End Purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
10	First top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
11	Second top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
12	4 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
13	6 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
14	Curtain runner	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
15	Horizontal member	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
16	Long arc at end	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
17	Long arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
18	Short arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
19	Knee Bracing and Small Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
20	Big Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
21	Top chord runner in last bay	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
22	Cross Bracing	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
23	Curtain pipe	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	

24	Curtain pipe handle	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	
25	Flap control system	GI curtain pipe Guard 20/22 mm OD at all corridor pipes	

FIXTURES AND ACCESSORIES			
Sl.o.	Part Name	Specification	Present or Not
1	Angle Bracket	ISA 40 X 40 X 3	
2	Full angle Cleat	ISA 40 X 40 X 3	
3	Half angle Cleat	ISA 40 X 40 X 3	
4	Flat Patti	25 MM X 5 MM	
5	76 ID Full Clamp	40 mm Width & 2 mm thick	
6	76 ID Half Clamp	40 mm Width & 2 mm thick	
7	60 ID Full Clamp	40 mm Width & 2 mm thick	
8	60 ID Half Clamp	40 mm Width & 2 mm thick	
9	43 ID Full Clamp	40 mm Width & 2 mm thick	
10	43 ID Half Clamp	40 mm Width & 2 mm thick	
11	T-Fixtures	33 mm OD & 2.0 mm thick	
12	L-Fixtures	33 mm OD & 2.0 mm thick	
13	Curtain Clamp	40 mm Width	
14	Universal Joint	20 mm sq. bar	
15	Stud Cover	21 mm OD & 2.0 mm thick	
16	Curtain Pipe Insert	21 mm OD & 2.0 mm thick	
17	Self Trapping Screw	20 mm length	
18	Bitumen Washer	3 mm thick	
19	Spring Insert	2.3 mm dia.	
20	Spring Insert (Platting)	2.3 mm dia.	
21	M 10 X 125	10 mm dia.	
22	M 10 X 100	10 mm dia.	
23	M 10 X 90	10 mm dia.	
24	M 10 X 40	10 mm dia.	
25	M 10 Nuts	10 mm dia.	
26	M 10 washers	10 mm dia.	
27	M 8 X 200	8 mm dia.	
28	M 8 X 90	8 mm dia.	
29	M 8 X 65	8 mm dia.	
30	M 8 Nuts	8 mm dia.	
31	M 8 Washers	8 mm dia.	
32	M 6 X 75	6 mm dia.	
33	M 6 X 20	6 mm dia.	
34	M 6 Nuts	6 mm dia.	
35	M 6 washers	6 mm dia.	
36	GI Wire 3 mm trellis wire	3 mm dia.	
37	GI Wire 4 mm trellis supporting wire	4 mm dia.	
38	Pulley with clamp	40 mm dia.	

	HDPE/MS		
39	Rings stainless steel	20 mm dia.	

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)

Sr. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Brick flooring with Plaster 15 mm thick	

PROFILE AND GUTTER			
Sl.o.	Part Name	Specification	Present or Not
1	Profile	Aluminium profile	
2	Gutter, 1-1.5% slope, max. gutter length 100 m.	Plastic drainage sheet (Single piece) supported by gutter purlins	
		GI drainage sheet 1.2 mm supported by gutter purlins (Single piece, if supported on arch)	
		GI drainage sheet 2 mm (if supported on column)	
3	Drainage water pipe	PVC 90/110 mm OD, 4 kg/sq centimetre pressure	
4	Zigzag spring insert	High carbon steel wire for repeated action, 2.3 mm dia	

POLYTHENE

Sr. No.	Description	Specification	Present or Not
1	Multi-layered Polythene from Agripolyane, Essen Multipack Ltd., Ginegar, Politive, PlasticaKritis, Soloplast	Fixed properties - 200 micron thick, UV stabilized, Thermic, diffused, Anti dust, Anti drip. Optional property - IR Reflective Cooling, Anti sulphur for the crops where sulphur consumption is high. For dutch- rose cultivation (As per farmer choice)	

NETS

Sr. No.	Part Name	Specification	Present or Not
1	40/50 mesh insect net to all four sides of below curtains for prevention of insect pests	UV Stabilized, 3.0 m width (height) (for vegetables & flowers) minimum 25 % of floor area. The company stitching below 2.0 to 3.2 m width are not allowed.	
2	40/50/75 per cent shade nets to all four sides below curtains for prevention of insect pests.	UV Stabilized, 3.0 m width (height) (for flowers only) minimum 25 % of floor area	
3	Shade Net (On top underneath polythene)	Non-motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or pulleys& nylon ropes. Shade Nets 40/50/75 per cent based on crop requirement of any color.	
4	35% shade net/30 mesh insect net	UV stabilized to be fixed at top vent	

CHECK LIST FOR MI COMPONENT

Sl. No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm2	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm2	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm2	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm2	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585	
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filteration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m3/hr	Nos.	0	0	0	1	
2	Disc filter 40 m3/hr	Nos.	1	1	0	0	
3	Sand filter 10 m3/hr	Nos.	1	1	0	0	
4	Sand filter 25m3/hr	Nos.	0	0	1	0	
5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

Check list for Shade net House/Insect House (Dome shaped)

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm	Present or Not
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm	
2	Net house column-centre	4 m	60 mm OD	2 mm	
3	Top purlins	4 m and 6 m	43 mm OD	2 mm	
4	Clamps and nut bolts	As per requirement			
5	Corridors	2.0 m	60 mm OD	2 mm	
6	Horizontal members	1 to 1.5 m	42 or 33 mm OD	2 mm	
7	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm	
8	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm	
9	Arches	As per requirement	42 mm OD	2 mm	
10	Column- side	3m	60 mm OD	2 mm	

Other parts of the structure:-

Sl. No.	Particulars	Present or Not
1	Shade net OR Insect Net	
2	Shade Net (On top underneath top net)	
3	Aluminum Profiles	
4	Spring Insert	
5	Foundation work	
6	Top purlins	

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sl. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	1.2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Bricks flooring with plaster 15 mm thick	

Check list for MI Component of Shade Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with	Nos.	82	125	280	585	

	HP LPD						
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filtration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m3/hr	Nos.	0	0	0	1	
2	Disc filter 40 m3/hr	Nos.	1	1	0	0	
3	Sand filter 10 m3/hr	Nos.	1	1	0	0	
4	Sand filter 25m3/hr	Nos.	0	0	1	0	
5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

Check list for Shade net House/Insect Net House (Top Flat)

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thicknes s in mm	Present or Not
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm	
2	Net house column	4 m	60 mm OD	2 mm	
3	Top purlins	4 m and 6 m	42/43 mm OD	2 mm	
4	3/4/5 way	200 mm each side	43 mm OD	2 mm	
5	Clamps and nut bolts	As per requirement			
6	Corridors	2.0 m	48 mm OD	2 mm	
7	Horizontal members	1 to 1.5 m	42 mm OD	2 mm	
8	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm	
9	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm	

Other parts of the structure:-

Sl. No.	Particulars	Description	Present or Not
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum/GI profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)	
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or Pulleys with nylon rope. Shade Nets 40/50/75 % based on crop requirement of any color.	
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m	
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action. The net is to be fixed at every 4 m on top purlin.	
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.	
6	Top purlins	To be fixed on each column on top (6 m x 4 m)	
Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sl. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	1m x 2 m : Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Bricks flooring with plaster 15 mm thick	

Check list for MI Component of Poly houses/Net Houses

Sl.No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Sub main Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585	
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filteration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m ³ /hr	Nos.	0	0	0	1	
2	Disc filter 40 m ³ /hr	Nos.	1	1	0	0	
3	Sand filter 10 m ³ /hr	Nos.	1	1	0	0	
4	Sand filter 25m ³ /hr	Nos.	0	0	1	0	

5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

ORGANIC FARMING

A. ADOPTION OF ORGANIC FARMING & CERTIFICATION

Assistance:

- a) For adoption 50% assistance of Rs.10,000/- per Ha. over a period of three years i.e.,
- | | | |
|----------------------|------|------------|
| 1 st year | | Rs.4,000/- |
| 2 nd year | | Rs.3,000/- |
| 3 rd year | | Rs.3,000/- |
- b) For certification – Rs.5.00 lakhs for a cluster of 50 Ha. over a period of three years to meet the cost of documentation, training and internal control system and certification charges i.e.,
- | | | |
|----------------------|------|---------------|
| 1 st year | | Rs.1.50 lakhs |
| 2 nd year | | Rs.1.50 lakhs |
| 3 rd year | | Rs.2.00 lakhs |

Preparation & Submission of Project Proposal:

- 1) The ADH shall identify a crop of commercial importance for promotion of Organic Farming.
- 2) The minimum area should be 50Ha. of contiguous area for adopting the organic farming.
- 3) To make it clear that the land has to be developed / converted into organic rather than individual crop.
- 4) Organic farming should exclusively be promoted on area basis instead of crop centric, for which an entire identified area of at least 50 Ha. per cluster be treated as organic rather than individual crop.
- 5) Considering the conversion periods, certification procedures etc. the identified organic production clusters should be **assisted at least for a period of three years.**
- 6) Before taking up the organic farming project, the districts should make the arrangements for the marketing of the organic produce.
- 7) The ADH should clearly identify the service providing agency / NGO having experience & expertise in NPM / Organic Farming, which will be responsible for the documentation,

training of farmer and Internal Control System and also the certifying agency accredited by the APEDA well in advance before submitting the proposal.

- 8) NGO shall be selected through the District Committee headed by the Joint Collector, ADH concerned, JD (Agri.), P.D., DRDA, P.D., DWMA, and DFO (Tech).
- 9) The Assistant Director of Horticulture should prepare the proposals along with NGO & Submit to the State Horticulture Mission with consideration of following points for approval.
 1. NGO's activity and experience in organic farming in horticulture crops.
 2. Selection of crop with justification for adoption of organic farming.
 3. Proposed area, list of farmers along with details and map of the location etc.
 4. Marketing facilities for organic produce.
 5. Proposed certifying agency for certification.
 6. Cost of the project.
 7. Approval from District Horticulture Mission.

Implementation of Project:

The implementation to be started in the district after sanction from SHM

- 10) Projects to be implemented as per the standards for organic production and accreditation system laid down by the National Standards on organic product (NOSP).
- 11) The ADH may enter into a Memorandum of Understanding (MoU) with service providing agency as per mutual convenience and understanding to ensure effective implementation of the project.
- 12) Infrastructure facilities for input production have to be created with the participating farmers and farmers have to be trained for upgrading their skills and for input production and its use. Assistance provided under NHM scheme should be utilized for strengthening of infrastructure for production of organic manures such as Vermi compost, NADEP compost, bio-dynamic compost, microbe mediated compost including promotion on the used inputs such as bio-enhancers, bio-agents, bio-pesticides, etc. for better nutrient supplement and for effective management of pests and diseases.
- 13) Purchase of inputs like bio-fertilizers to be minimized and discouraged. The inputs being provided to the farmers shall be approved by the certification agency. The rates of the inputs should be lower than the prices approved by AP Agros. Distribution of Liquid bio-fertilizers & pesticides is strictly not allowed.

- 14) Encourage to plant trees, shrubs, bushes at the farm boundaries, vacant places for habitat development and harnessing nitrogen from atmosphere.
- 15) To prepare cropping plan as per the farmers need and principles of organic farming and to select local varieties which are well adopted to the environment and to produce their own seeds / plants.
- 16) Encourage and build confidence in farmers for value addition and marketing of produce.
- 17) Assistance for Adoption and Certification of organic farming should be given in three years installments to obtain the C-III certificate.
- 18) **Payment Details:**
 - a) 100% amount towards Group formation, trainings & ICS will be released after completion.
 - b) 50% amount towards the cost of distributed inputs will be released to service providing agency after completion of distribution
 - c) Remaining 50% balance will be paid after 3rd party verification.
 - d) Amount earmarked for certification will be released as per the terms & conditions between the department and selected certification agency.
 - e) The particulars of the registered groups along with their bank details and IFSC code should be uploaded in Hortnet. **assistance will be provided to the end beneficiaries through online transfer from the State Head quarters through HORTNET in CFMS mode.**

Inspection & Certification:

- 19) All the project areas taken up for organic production should invariably be got certified by the competent agency within the stipulated time.
- 20) The service obligation of the organic certifying agency is to act as 3rd party independent assessor that would verify the system and processes involved in implementation of organic production by employing qualified auditors / field inspectors for regular inspection of the fields.
- 21) The certifying agency will verify the claims by implementing agency under parameters of NPOP and guideline issued by APEDA in various aspects that include:
 - a) Organic adoption with standards prescribed by National Agency to create an acceptance as unique brand.

- b) Record keeping reflecting actual implementation of standards.
 - c) Authenticity of records in terms of accuracy and correctness.
 - d) Office audit and field assessment report. All reports to this effect are to be documented and prepared on periodic basis during the project duration.
- 22) The ADH should ensure that the following procedure for inspection and certification is adhered to by the service provider agency and certifying agency:

The inspection and certification systems should be used to verify the labeling of and claim for organically produced foods. There are sets of norms to be compiled with, followed by inspection by the certifying agency before certification. The inspectors carry out inspection of land and maintain records as per specified formats and also carry out periodic site inspection. Based on the compliance to the standards and programme, accredited inspection and certification agencies will certify the organic status of products and operations, indicating their conditions along with their recommendations. The inspection includes:-

- Interview with persons responsible for production.
- Physical inspection of fields, premises, processing equipment, storage area etc. inspection of paper work, book keeping etc.
- Testing for residue analysis is carried out.
- After fulfilling the necessary inspections, the agency provides the report of inspection and testing. Based on the findings of the report, the agency decides whether or not to grant a certification.
- If certification is not granted, then the agency provides the reasons for rejection. If only certain parts of the business can be certified, the agency does so, providing the producer with certain recommendations for the remaining parts of the business which could not be certified.
- Each year following the official certification, the agency performs inspections to determine whether the requirements for certification are still met.

Monitoring:

- 23) The ADH shall ensure that National Centre for Organic Farming (NCOF), Dept. of Agri & Coop. Govt., visits the project area periodically at least once in 6 months, to inspect the implementation status of the project and submit the report to SHM.
- 24) The process of implementation will be supervised by the concerned ADH.

- 25) The ADH should submit the report in the prescribed format and to ensure regular monitoring of the conditions / requirements of project implementation, especially certification and submit the report to SHM.

DO's AND DONT's WITH REGARDS TO ORGANIC FARMING

DO's

- Only such crops should be taken up for organic farming, which would fetch premium price to the farmer.
- Market linkage for the organic produce should be ensured before venturing into organic farming.
- Adoption of organic farming should be in conjunction with organic certification by accredited agencies.
- Organic farming invariably be linked with generation of on farm organic input material.

DONT's

- Organic farming should not be taken up in isolated patches.
- Organic farming should not get limited to procurement and supply of organic inputs.

Role of NGOs in Organic Farming under State Horticulture Mission

Organic Agriculture is basically production of crops without external inputs such as chemical fertilizers and pesticides, and only permitted inputs which are organic, eco friendly in nature are used, hence while implementing the Organic Farming interested NGOs at the field level may be involved.

1. NGO role begins with identification of cluster crop and the farmers in coordination with AD(H). Besides they should organize the farmers in a particular cluster into a common interest group with a minimum area 50 Ha in a block/ cluster.
2. To provide greater stake in project implementation, a sub-committee with 5 persons will be constituted from among the farmers in the cluster who will coordinate with NGO and HO at frequent intervals.
3. The NGO should make it clear to all the farmers that the land has to be developed organic not individual crop, hence once it is put under organic production it has to be continued activity in subsequent years.

4. The NGO should ensure proper education of the farmers to take up farming on their own instead of leasing the gardens, the NGO should map the contiguous areas, list out all the farmers, make them properly understand the concept, make them sufficiently convinced and come voluntarily. And encourage the farmers to arrange at least one cow per 4 Ha of organic area and also to plant trees, shrubs, bushes at farm boundaries and vacant places for proper habitat development. It shall also ensure that no third degree practices of luring the farmers by promising that subsidies would be given or by force or by deception etc.
5. The NGO shall train all the farmers at their nearest place in local language by the accredited certifying agencies/state Universities / Any competent professional mutually agreed etc by involving the local departmental officials/Assistant Director of Horticulture/HO.
6. In order to encourage participatory initiatives, NGO to organize inputs, to the extent possible by locally processing, involving beneficiaries (like Vermicompost, Neem Powder, Trichoderma viridae) and arrange to supply the inputs to the farmers in the cluster and ensure their utilization.
7. The NGO shall ensure submission of monthly and quarterly progress reports and any other reports as and when required and as designed by state Horticulture Mission.
8. The NGO shall maintain all the records which are to be maintained at farmer level and cluster level as required by the certification agency and make available all of them to the inspecting officers of the concerned and involve certification agency from initiation of organic activity so that if there are any apprehensions these can be clarified in the beginning.
9. As per National Horticulture Mission guidelines Organic Farming has to be linked with certification. Hence the package of practice we adopt has to be in compliance to the established norms of the Certifying agency and the NGO shall be well versed with Internal Control System (ICS) and follow the same for getting organic certification.

10. The NGO shall make all arrangements and requirements for inspection and certification by the accredited certification agency and ensure to obtain the organic certificate for the total area the project is being undertaken. The NGO should take full responsibility for certification.
11. After confirmation of input distribution & usage by the concerned HO and the Committee and a resolution to the effect from all the farmers in the cluster, the AD(H) will release funds to the NGO towards input cost.
12. NGO should circulate details of inputs distributed along with the cost to the farmers once in every 3 months for the purpose of transparency and social audit.
13. Land preparation & labour component involved in the process will be taken as beneficiary contribution.
14. Regional DDH will be regular scrutiny & monitoring the implementation.
15. The NGO shall be necessary to take prior approval from the concerned departmental officials before making any change in the bye laws, address or in the membership of the Governing body, Executive Body or signatory of their organization with respect to the present programme.
16. The NGO shall identify the organic product traders and shall sell/ arrange to sell the produce to the one who offers maximum price to the farmer, more remunerative price and it shall take up the process of selling with the approval of farmers committee formed for the purpose duly involving the departmental officials and also they should assure to get premium price to the produce @ 10 % more in first year, 15% more in second year and 20 % more than the prevailing market price.

Proposed Pattern Assistance for Adoption of Organic Farming - Certification under SHM for 3 years from 2014-15				
S.No	Year	Components	Amount / Ha (Rs.)	Amount / cluster (Rs.)
I	Adoption			
1	1 st Year	Organic Inputs	4000	200000
2	2 nd Year	Organic Inputs	3000	150000
3	3 rd Year	Organic Inputs	3000	150000
II	Certification		10000	500000
1	1 st Year	Group Formation	200	10000
		ICS	800	40000
		Maintenance of Records	200	10000
		Trainings	400	20000
		Exposure visit for 20persons	2500	50000
		Certification agency charges	400	20000
		Total		150000
2	2 nd Year	ICS	1000	50000
		Maintenance of Records	200	10000
		Trainings	200	10000
		Exposure visit for 20 persons	2500	50000
		Certification agency charges	400	20000
		Soil analysis (Actual)	200	10000
		Total		150000
3	3 rd Year	ICS	1200	60000
		Maintenance of Records	200	10000
		Trainings	200	10000
		Exposure visit for 20 persons	2500	50000
		Certification agency charges	400	20000
		Soil analysis (Actual)	600	30000
		Marketing Facilities & Others	400	20000
		Total		200000
		Grand Total	10000	500000

ఆంధ్రప్రదేశ్ ఉద్యాన మిషన్
సేంద్రియ వ్యవసాయం

ఒప్పంద/ అంగీకార పత్రము

తేది: _____, రోజున _____ గ్రామము

_____ జిల్లాలో ఈ ఒప్పంద పత్రము వ్రాయడము జరిగినది.

ఆద్యాయము - 1.

ఈ ఒప్పంద పత్రములోని భాగస్వామ్య వ్యక్తులు

- 1.1 ఉద్యాన సహాయ సంచాలకులు / ప్రాజెక్టు ఉద్యాన అధికారి _____ జిల్లా గారు మొదటి వ్యక్తి.
- 1.2 _____ సంస్థ. ఈ కార్యక్రమములో ప్రధాన సేవలు అందించు వారు రెండవ వారు.
- 1.3 రైతు పేరు _____, గ్రామము _____, జిల్లా _____ సేంద్రియ వ్యవసాయమును నిరాటంకముగా మూడు సంవత్సరములు చేయుటకు అంగీకరించినవారు మూడవ వ్యక్తి.

ఆద్యాయము - 2.

పూర్వ సమాచరము

- 2.1 సేంద్రియ వ్యవసాయము అనగా రసాయన ఎరువులు మరియు క్రిమి సంహారక మందులను వాడకుండా సేంద్రియ లేక జీవన ఎరువులను వాడి వ్యవసాయ పంటలను పండించుట.

ఆద్యాయము - 3.

అంగీకార పత్రము వ్యవధి

- 3.1 మొదటగా ఈ అంగీకార పత్రమును తేది: _____ నుండి మూడు సంవత్సరముల వరకు వ్రాయడము జరిగినది. ఇందులోని వ్యక్తులు అంగీకరించినచో దీనిని తర్వాత సంవత్సరములో పొడిగించబడును.

ఆద్యాయము - 4.

ముఖ్య ఉద్దేశ్యము

- 4.1 భూసారమును అభివృద్ధి చేయుట
- 4.2 సుస్థిరమైన వ్యవసాయమును ప్రోత్సహించుట
- 4.3 రసాయన ఎరువులు మరియు క్రిమి సంహారక మందులు వాడకుండా వ్యవసాయ ఖర్చులను తగ్గించి, రైతులకు అధిక ఆదాయము చేకూర్చడము.
- 4.4 నాణ్యత మరియు దిగుబడి పెంచడము.
- 4.5 సమాజమునకు ఆరోగ్యము మరియు ఆహార భద్రత కల్పించడము.

ఆగ్గానిక్ సర్టిఫికేషన్ చెయు సంస్థల నుండి రైతుల ఉత్పత్తులకు ఆగ్గానిక్ సర్టిఫికేట్ ఇప్పించడము.

4.6 రైతు పండిచిన ఉత్పత్తులకు ప్రీమియం రేటు వచ్చుటకు ప్రయత్నించడం.

ఆద్యాయము - 5.

మొదటి వ్యక్తి (ఉద్యాన సహాయ సంచాలకులు / ప్రాజెక్టు ఉద్యాన అధికారి)యొక్క బాధ్యతలు :

- 5.1 జాతీయ ఉద్యాన మిషన్ వారి నిబంధనల ప్రకారము రైతుల వ్యవసాయ ఖర్చులో సబ్సిడీ ఇవ్వడము, ఉత్పత్తులను దృవీకరించడము మరియు శిక్షణ ఇచ్చుట కొరకు ఖర్చులను భరించడము.
- 5.2 ఉద్యాన సహాయ సంచాలకులు / ప్రాజెక్టు ఉద్యాన అధికారి లేక ఉద్యాన అధికారులు గాని ఈ కార్యక్రమమును తరచుగా పర్యవేక్షించి నిబంధనల ప్రకారము పనులు చేస్తున్నారో లేదో జాగ్రత్తగా పరిశీలించుట మరియు సంస్థకు తోడ్పాటునందించడం.
- 5.3 ఏవైన బలమైన కారణాలున్నచో ఈ అంగీకార పత్రమును రాష్ట్ర ఉద్యాన మిషన్ అనుమతిపై మార్చడం లేక రద్దు చేయడం గాని చేయవచ్చును.

ఆద్యాయము - 6.

రెండవ వ్యక్తి లేదా సంస్థ యొక్క బాధ్యతలు:

- 6.1 సంస్థ వారు సేంద్రీయ వ్యవసాయము చేయు ప్రాంతములో వారి కార్యాలయమును ప్రారంభించాలి.
- 6.2 రైతుల ఎంపిక కోసము ఉద్యాన సహాయ సంచాలకులు/ప్రాజెక్టు ఉద్యాన అధికారి ఆద్యరంగంలో సర్వే, రైతులు తమ స్వంత పొలములో పండించే వారిని ఎంపిక చేసి, చిన్న చిన్న గ్రూపులుగా చేయాలి.
- 6.3 సేంద్రీయ వ్యవసాయము గురించి అనుభవము, మరియు నేషనల్ స్టాండర్డ్స్ ఆఫ్ ఆగ్గానిక్ ఫార్మింగ్ వారి నిబంధనల ప్రకారము వీటిలో ఉపయోగించే పదార్థాల గురించి తెలిసి వుండాలి.
- 6.4 వీరు రైతు గ్రూపులతో సాంకేతిక సలహా నిపుణుల బృందం సభ్యులతో మరియు ఉద్యాన శాఖ లేక ఐ.టి.డి.ఏ సిబ్బందితో కలిసి పని చేయవలసి వుంటుంది.
- 6.5 ఇన్పుట్స్ అనగా సేంద్రీయ ఎరువులు క్రిమి సంహారక కషాయాలు మొదలగునవి తయారు చేయుటలో మెళుకువలు రైతులకు శిక్షణ ద్వారా తెలియజేసి సాధ్యమైనంత వరకు క్షేత్రస్థాయిలో వాటి తయారీని ప్రోత్సహించాలి. అలా వీలుకాని ఇన్పుట్స్ను గుర్తింపు పొందిన సంస్థల నుండి పొరదర్శక విధానంలో కొనుగోలు చేయాలి.
- 6.6 సేంద్రీయ వ్యవసాయమునకు కాలవసిన ఇన్పుట్స్లను రైతులకు సరఫరా చేసి/రైతులకు వాడిన తరువాత దీనికి అయ్యే ఖర్చును లేక పదార్థముల పరిమాణమును గ్రూపు సభ్యులతో తీర్మాణము చేసి, దానిని సంబంధిత ఉద్యాన అధికారి చేత దృవీకరించి, ఉద్యాన సహాయ సంచాలకుల వారికి డబ్బు చెల్లించుట కొరకు పంపించవలెను.
- 6.7 సామాజిక తనిఖీ కోసం ప్రతి రెండు నెలలకొకసారి రైతులతో సమావేశము ఏర్పాటు చేసి పంపిణీ చేసిన ఇన్పుట్స్ వాటి పరిమాణము మరియు విలువ వ్రాత పూర్వకముగా తయారు చేయాలి.
- 6.8 యుటిలైజేషన్ సర్టిఫికేట్ మరియు ఇతర లావాదేవీల వివరాలను అడిగినప్పుడు సంబంధిత అధికారులకు పంపించవలెను.
- 6.9 సేంద్రీయ వ్యవసాయ పద్ధతులు, ఉద్దేశ్యము మరియు ఉపయోగించదగిన ఇన్పుట్స్ పై రైతులకు క్షేత్రస్థాయిలో తగిన శిక్షణ ఇవ్వాలి.

- 6.10 రెండవ భాగస్వామి సర్టిఫికేట్ చేయించుట కొరకు సేంద్రీయ వ్యవసాయములో చేసిన పనుల , ఉపయోగించిన పదార్థాల వివరాలను రైతు స్థాయిలో అన్ని రికార్డులు తయారు చేసి కావలసినప్పుడు అధికారులకు చూపించవలెను. సర్టిఫికేట్ ఇచ్చే సంస్థ ద్వారా రైతులు పండించిన ఉత్పత్తులను తప్పని సరిగా సర్టిఫై చేయించాలి.
- 6.11 ఈ కార్యక్రమము అమలు చేయుటకు తగినంత సిబ్బంది ఉండాలి.
- 6.12 సేంద్రీయ వ్యవసాయముతో పండించిన పంటలను అమ్మే/కొనే వారు వారిని గుర్తించి, ఈ పంటలనురైతులు ఎక్కువ ధరకు అమ్మేవిధంగా చర్యలు తీసుకోవాలి.
- 6.13 ఈ కార్యక్రమములో ఏదైన విభేదాలు ఎదురైనప్పుడు మిషన్ డైరెక్టరు/హార్టికల్చర్ కమీషన్ గారిని సంప్రదించాలి
- 6.14 ఈ కార్యక్రమము కొరకు తీసుకున్న డబ్బు సక్రమంగా/నిబంధనల ప్రకారము ఖర్చు చేయని యెడల/ఇతర అవసరాలకు వాడినచో ఆ మొత్తము డబ్బును సంస్థ నుండి తిరిగి రాబట్టి వారిని చట్ట పరంగా చర్యలు తీసుకొనబడును.
- 6.15 ఏదైన కారణాల వలన సంస్థ ఈ కార్యక్రమము నుండి విరమించుకో దలచినచో మూడు నెలల ముందుగా నోటీసు ఇచ్చి అప్పటి వరకు జరిగిన ఆర్థిక లావాదేవీలను సంబంధిత అధికారులకు అప్పగించవలెను. లేని పక్షములో ఆ సంస్థ పై చట్ట ప్రకారం చర్యలకు బాధ్యులగుదురు.

అధ్యాయము - 7.

మూడవ వ్యక్తి (రైతు) యొక్క బాధ్యతలు

- 7.1 సేంద్రీయ వ్యవసాయము చేయుటలో ఉత్సాహము కల్గి వుండి, మూడు సంవత్సరముల వరకు ఏ ఇతర రసాయన ఎరువులు వాడకుండా పంటలు పండించాలి.
- 7.2 సంస్థ లేదా ఉద్యాన అధికారులు ఇచ్చిన సలహాల మేరకు వ్యవసాయము చేయవలెను.
- 7.3 సూచించిన లేదా నిర్దేశించిన పదార్థాలను కాకుండా ఏ ఇతర రసాయన ఎరువులు లేదా క్రిమి సంహారక మందులను అధికారుల అనుమతి లేకుండా వాడరాదు.
- 7.4 కావలసిన సేంద్రీయ లేక జీవన ఎరువులను సంబంధిత సంస్థ ద్వారా లేక రైతులే స్వయంగా తయారు చేసుకోవాలి.
- 7.5 దీనిని అయ్యే ఖర్చులో ప్రభుత్వ రాయితీ పోను మిగిలిన డబ్బును రైతులే భరించాలి.
- 7.6 ఈ దిగుబడిని రైతులు నేరుగా లేదా సంస్థ ద్వారా ఎక్కువ ధరకు అమ్ముకో వచ్చును.

ఆద్యాయము - 8

విభేదములు / సమస్యల పరిధి

- 8.1 ఏదైన విభేదములు/సమస్యలు ఏర్పడినప్పుడు హైదరాబాదు పరిధిలో మాత్రమే పరిష్కరించబడను.

ఆద్యాయము - 9

నోటీసు

- 9.1 అన్ని నోటీసులు, అభ్యర్థనలు మరియు ఇతర సమాచారమును రిజిస్టర్డ్ పోస్టు/ కోరియర్ /వ్యక్తిగతంగా సంబంధిత వ్యక్తులకు పంపించబడును.

VERMICOMPOST UNITS

- The Vermicompost units should be established in the orchards owned by the beneficiaries. Wherever, the beneficiaries come forward to construct these units next to their houses, owned by them, for effective monitoring, they can be sanctioned at such places as a special case. But it has to be ensured that such beneficiaries are genuine & interested farmers and will use Vermicompost units for their farms. This will be done as a special case duly taking the DMC approval.
- These units may be constructed wherever sufficient land, cattle and irrigation sources are available duly owned by the beneficiary concerned in the same village where the garden is situated for better management (as per NIRD Model).
- The standard size of each heap will be 50' x 3' and a unit consisting 4 or 3 heaps of 40' x 5' each or 3 beds of 50' x 4'. Accordingly the place should be available with farmer for construction of the unit and the volume should be 600 cft.
- The beneficiaries are permitted to take up thatched shed or permanent structures like Asbestos, or Mangalore tiles etc covering the roofs with hay to protect from heat. The shape of the shed must be as inverted "V" shape with appropriate height of 8' and ensure that the shed covers all the beds in the unit properly. All the beds must and should be covered with shade.
- If any farmer is interested to construct small unit without deviating guidelines, the subsidy should be paid on proportionate basis.
- If the farmers invest more amount on permanent structures like Asbestos (or) Mangalore tiles instead of thatched shed, the additional cost over and above the subsidy of Rs.50,000/- has to be borne by the farmer.
- In all the cases the Horticulture Officer concerned should personally inspect and certify the measurement of beds and shape etc. before recommending the subsidy. The concerned H.O. should submit the photograph of units along with farmer to ADH/DDH along with subsidy claim. The ADH should inspect at least 50% of the units sanctioned and satisfy himself before release of subsidy.
- The name of the farmer, amount of subsidy given by the Department of Horticulture, name of the scheme and year should be invariably displayed on the unit.
- The Vermicompost units should not be taken up in the old thatched sheds cattle sheds and poultry sheds etc.

- Trainings should be given to selected farmers on the concept, process of erection and maintenance of Vermicompost units.
- The farmer should be produced continuously Vermicompost at least 5-6 years.
- As it is observed that few units are not functioning after their establishment, ADH to give follow support to such units and ensure they continue to function properly.
- The ADH shall compile the list of the beneficiaries and place before district level committee under SHM and obtain approval of the District Mission Committee.
- The farmer should give a declaration that he has not availed any subsidy from any Govt. or NGO for this component.
- After approval of DMC, preliminary sanction along with specifications i.e. shed size, heap/bed size duly mentioning the eligible assistance has to be issued to the farmer with the directions for completion of the unit within 60 days with model layout photograph.

Pattern of Assistance:

50% cost as assistance max. of Rs. 50,000 - per unit is provided on the total cost of construction on the following components to a max ceiling of 2 units per beneficiary.

The estimated cost of one unit of 600 cu. ft is as follows.

S.NO.	Component	Total Cost in (Rs.)	Departmental share in (Rs.)	Farmers Share in (Rs.)
1	Construction of Thatched shed	58000	29000	29000
2	FYM (15 Tons)	15000	7500	7500
3	Earth Worms (72 Kgs.)	6000	3000	3000
4	Equipment for collection of Vermi wash	3000	1500	1500
5	Containers for Azolla (4 Nos.)	1600	800	800
6	Sieving Equipment	8000	4000	4000
7	Operational Expenses	8400	4200	4200
Totals		100000	50000	50000

Mode of disbursement:-

- After successful completion of the unit the HO shall take up 100 % physical verification and the ADH shall take up 50 % physical verification. ADH shall submit inspection report with due recommendation for release of assistance.
- Assistance will be disbursed to the beneficiary in two installments, 1st installment (75% of the assistance) after successful completion of the unit and after its physical verification by the HO and submission of inspection report.
- **The assistance will be provided to the beneficiaries through online transfer from the State Head quarters through HORTNET in CFMS mode.**
- 2nd installment (balance 25% of assistance) will be released to the farmer in the successive year, if the unit is operational and producing Vermicompost after completion of one year.

HDPE VERMIBEDS

- The farmer is given choice for procurement of HDPE Vermibed as per the standards from any company of his choice.
- Provision of shade by providing thatched shed is compulsory.
- Farmers having existing thatched shed are also eligible.
- Farmer to install the vermibed and should procure the components required for preparation of Vermicompost.
- Board showing details of the farmer and assistance provided should be displayed at the unit which is mandatory under MIDH schemes.
- List of farmers along with photographs showing the vermibeds installation in the farmers gardens should be furnished to this office.

Specification: 12X4X2 Ft. of Agro Textiles- HDPE Woven beds with BIS standards (IS 15907:2010)

Total Cost: The total cost for HDPE Vermibed including material is Rs. 16000/-

Assistance: 50% assistance i.e. Rs.8000/-

Sl. No.	Component	Total Cost in (Rs.)	Departmental Share in (Rs.)	Farmers Share in (Rs.)
1	HDPE Vermibed	5600	5600	0
2	FYM (2 ½ Tons)	2400	1200	1200
3	Earth Worms (12 Kgs.)	960	400	560
4	Installation Cost	1600	800	800
5	Provision of Shade	5440	0	5440
Totals		16000	8000	8000

Eligibility:- One vermibed per beneficiary.

Disbursement of Assistance:-

- 100% physical verification by the Horticulture Officer concerned and 50% of the units in each Horticulture officers jurisdiction should be inspected by the ADHs before release of assistance.
- After ensuring the installation of the units in all aspects, the **assistance will be provided to the beneficiaries / agency / firm through online transfer from the State Head quarters through HORTNET in CFMS mode.**

INTEGRATED POST HARVEST MANAGEMENT GUIDELINES – 2014-15

Specific programmes which would be taken up under MIDH would include establishment of pack houses, pre-cooling units, mobile pre-cooling units, cold storage units, Controlled (CA) Storage/Modified Atmosphere (MA) Storage/supply of refrigerated vans/containers, primary/mobile processing units, ripening chambers, evaporative/low energy cool chambers, preservation units, onion storage units and zero energy cool chambers. All these projects will be entrepreneur driven through commercial ventures for which Governmental assistance will be credit linked back-ended.

Subsidy in accordance with the cost norms given in Annexure-I PSUs and State Government agencies, Cooperatives, growers' association, farmers group, self-help groups, women farmers groups, recognized/registered by the DMCs, having at least 25 members, will also be entitled to avail assistance for such activities to the same extent. However, assistance will not be credit linked for such agencies but would be back ended subject to condition that they are able to meet their share of the project cost.

Assistance for setting up of new cold storage/ CA Storage/ MA storage will be available only to multi-chamber cold storage units with latest/new technologies, which are energy efficient with provision for insulation, humidity control, advanced cooling systems etc., having specifications and standards approved by the Ministry as detailed in the website. www.nhm.nic.in / www.midh.gov.in -> revised guidelines -> technical standards for cold storages.

A) STEPS TO BE FOLLOWED IN GENERAL:

1) At the time of receiving the proposal from promoter at the ADH office .

- 1) Application along with synopsis should be in prescribed format duly signed by the promoter.
- 2) The documents to be submitted for that particular component are to be verified as per the check list.
- 3) All the project proposals should be numbered in print / ink with index showing the contents as mentioned in check list.
- 4) Issue of acknowledgement to the promoter.

2) Verification in ADH office.

- 1) Application should be verified that all the columns are properly filled with the signature of the promoter.
- 2) The documents are to be verified as per the check list and the check list should be duly signed by the ADH for onward submission to State cell.
- 3) If any documents are missing the promoter should be asked to submit the pending documents within one week.
- 4) After receipt of all documents DHM approval has to be obtained.
- 5) Farmer/entrepreneur registration should be done in Hortnet.
- 6) The ADH should forward the project proposals in 3 sets (Cold Storages / Ripening Chambers / Primary Processing units / Reefer Vans) along with the check list duly signed by the ADH. If any documents are not required proper justification has to be given for not submitting the documents.
- 7) As the bank consent letter, bank appraisal report and affidavit are most essential documents, the ADH should verify this documents with originals and ADH should attest the duplicate copies before submitting the project proposals to this office.

3) After Issue Of Administrative Sanction And Execution Of The Project

- 1) Preliminary inspection report in the prescribed format has to be submitted by ADH along with bank disbursement statement to state cell for release of subsidy.
- 2) Preliminary inspection report and field photos should be uploaded in Hort net.
- 3) Periodical inspection at different stages of execution.
- 4) ADHs have to give confirmation regarding the suggestions / remarks given by the technical consultant in techno economic viability report.
- 5) ADHs to inform the promoters for taking up of energy audit after the unit is completed. Energy audit should be taken up by the certified energy auditors by Bureau of energy efficiency Ministry of Power (GOI)
- 6) ADH has to forward the energy audit report to State cell and should recommend for constitution of joint inspection team.

4) Joint Inspection

- 1) It is the responsibility of the ADH to coordinate with all the members as constituted in the team for conducting joint inspection.

- 2) The relevant proformas should be properly filled and subsidy has to be recommended for release.

5) **MONITORING**

- 1) The ADH should periodically visit and inspect the unit to see that whether the unit is being utilized for the purpose for which it is sanctioned.

6) **Time Frame For Implementation Of PHM Projects**

Sl.No.	Component	No. of days
1.	Verification of project proposal with check list	10 days from the date of receipt of proposal
2.	Intimation to the promoter if all documents are not submitted	
3.	Inspection by HO / ADH	
4.	Obtaining required documents from if any promoter as per check list	Within 7 days after verification of the application
5	Application form filing in hortnet	With in 7 days after getting application form with full details
5.	Obtaining DMC approval	
6.	Forwarding to State cell	Within 2 days after obtaining DMC approval
7.	Techno Economic Viability Study by the Technical consultant	Within 15 days
8.	After obtaining Techno Economic Viability Report – Project to be placed in EC of State MIDH cell.	
	After the project is approved in EC of State cell & MIDH and after issue of Administrative sanction	
9.	Preliminary inspection report uploading in Hortnet recommending release of 1 st installment	Within one week after issue of administrative sanction
10.	Periodical inspection by ADH	Monthly intervals
	After completion of the project (After the promoter has taken up all suggestions given by technical consultants in techno economic viability report and after the energy audit is completed)	
11.	ADH to recommend for constitution of joint inspection	Within 3 days after completion of the project in all aspects
12.	After joint inspection team is constituted ADH to coordinate with all the members and arrange for joint inspection	Within 7 days after constitution of joint inspection.
13.	Submission of joint inspection report	Within 3 days after completion of joint inspection
14	Uploading the bills and photos in hort net for release of subsidy	Within 3 days after completion of joint inspection

B) STEPS TO BE FOLLOWED (PROJECT WISE):

1) Cold storages / Ripening chambers

The project proposals should be in accordance with technical standards of MIDH www.nhm.nic.in/ www.midh.gov.in -> revised guidelines -> technical standards for cold storages.

The Assistant Director concerned shall submit the project proposal in 3 sets (one in original and two sets in duplicate) with all the documents as per check list (annexure – I) along with application as prescribed by the MIDH (Format – I) along with his recommendations (Format – IX(A)/CS / RC) for placing the project proposal in the SLEC meeting for approval.

The project proposal should be numbered in print / ink with index showing the contents as mentioned in check list (Annexure – I).

The application form should be filed in HORTNET.

The ADHs shall ensure that promoter should submit the bank consent letter within 3 months from the date of submission of application. The ADH shall also ensure that the application / basic data sheet and affidavit are signed by the promoter.

Bank appraisal is different from bank consent letter, wherein the project is discussed and appraised in a more detailed manner for sanction of loan amount. Each bank will be having its own proforma of appraisal.

As per the directions of the MIDH the projects shall be recommended as per the following component wise cost.

Sl.No.	Item	% of the project cost (range)
1	Civil construction	50-55
2	Thermal insulation	10-15
3	Refrigeration system	20-25
4	Electrical system	10-15

The ADH shall obtain the coefficient of performance sheet in respect of electricity / refrigeration load from promoter and submit the same to State cell for conducting energy audit by the technical consultant and also ADH shall see that data logger / PLCs are installed by the promoter as mentioned in technical standards

- As the following documents are mandatory the ADH shall obtain the same for seeking techno viability advice before placing the project in SLEC:
 1. Heat load calculation sheet during loading period, pull down period, holding period in accordance to technical standards and guidelines duly certified by the engineer.
 2. Detailed coefficient performance sheet during peak load, holding period and lean period duly certified by the engineer.
 3. Layout of the proposed cold storage unit in accordance to the statutory building by laws and building codes and standards duly approved by a registered architect and structural engineer.
 4. Technical data sheets of each equipment namely compressors, condensers, cooling towers, Air cooling units giving general layout, dimensions, material of construction, rated capacity, operating parameters and COP duly certified by respective equipment manufactures with respect to relevant codes and standards.
- The ADH shall also see that additional compressors and humidifiers are installed in multi chambered Cold Storage to have at least 10% of space for storage of Fruits & Vegetables, as most of the cold storages are proposed for storing chillies, tamarind and agriculture produce. The non-providing of space in cold storage for storage of fruits & vegetables is being pointed out in almost all Techno. Economical Viability Study reports.
- The project proposal received in State cell from the ADH with all the above required documents shall be forwarded to the technical consultants for Techno economic Viability study.
- The project proposals that are economically and technically viable shall be placed before the SLEC for approval.
- The project proposals that are approved by the SLEC shall be forwarded to the MIDH for placing in the EC for approval.
- In principal Sanctions shall be issued to the projects that are sanctioned by the EC.
- The ADHs after receiving the In principal sanctions, shall inspect the site and submit the preliminary report in the (Format-IX (B)/CS/RC) mentioning the status and progress of the project work duly recommending for the release of 1st installment subsidy to the concern bank.
- ADH should also upload the preliminary report and photos in Hortnet for release of credit linked back ended subsidy.
- Basing on the preliminary report of the ADH concerned the State cell shall release 1st installment subsidy to the concerned bank of the promoter through HORTNET.

- After completion of the project and energy audit, the ADH shall recommend through a letter for joint inspection of the project along with bank disbursement statement / completion letter from Banker duly enclosing the energy audit report.
- After obtaining permission from state office, the ADH shall conduct Joint Inspection with the following committee members:
 - ED / Sr. Officer from Commissionerate / Project Director, MIP / DDH of the concerned district.
 - Assistant Director of Horticulture concerned.
 - Horticulture officer concerned.
 - Promoter
 - Banker

The committee shall submit Joint inspection report in the prescribed Format for Cold Storage (XI, XII, XIII, XIII(A)) and for Ripening Chamber (XIV, XV, XVI & XVII) along with the original company bills of purchase of the project machinery.

ADH shall upload the bills and photos in HORTNET for release of 2nd installment of subsidy.

- Based on the recommendations of the Committee, the final installment of the subsidy shall be released to the concerned bank of the promoter.

2) Reefer Vans:

In order to establish cold chain there is need to promote reefer vans to prevent post harvest losses. The application (Format – I) with detailed project report along with all required documents as per the check list (Annexure-II) has to be forwarded to State cell. ADH should fill the application form in hortnet. In case of refer vans and containers following documents needs to be attached to the application form to be send along with the joint inspection report as detailed below.

- (a) Copy of proforma invoice of chassis, body and refrigeration units of the vehicles duly confirmed by the lending bank (to be attached to the project proposal).
- (b) Copy of the payment receipts of chassis, body and refrigeration unit etc. of the vehicles duly confirmed by the lending bank (to be send along with joint inspection report).
- (c) Copy of the delivery challans of the body and chassis of the vehicles (to be send along with joint inspection report).

The ADH has to recommend for the joint inspection of the reefer van after completion of the following:

- i) Fabrication of the van is to be completed
- ii) The van should be painted with logo of MIDH and assisted by department of horticulture and MIDH.

The ADH shall conduct joint inspection with the members constituted by this office and the joint inspection reports have to be submitted in format (RV-XVIII & XIX). ADH should upload the bills/invoices and photos in hortnet for release of subsidy. Based on the recommendations of the Committee, the final installment of the subsidy shall be released to the concerned bank of the promoter through HORTNET.

3) Primary Processing Units

Processing of horticultural produce and value addition is an important activity. While primary / minimal processing units are promoted under MIDH, large scale processing units are promoted by Ministry of Food Processing Industries (MFPI), out of their ongoing Schemes.

Application form (format – I) along with all required documents as per the check list (Annexure-III) has to be forwarded to State cell for taking approval from SLEC. ADH should see the registration of the farmer should be done in Hortnet. After receiving of administrative sanction, ADH has to submit preliminary inspection report in Format – IX. After the unit is completed ADH has to recommend for joint inspection of the unit.

The ADH shall conduct joint inspection with the members constituted by this office and the joint inspection reports have to be submitted in format (PP-XX, PP-XXI, PP-XXII & PP-XXIII). ADH should upload the bills/ invoice and photos in Hortnet for release of subsidy. Based on the recommendations of the Committee, the final installment of the subsidy shall be released to the concerned bank of the promoter through Hortnet.

4) Pack House

WORK FLOW FOR PACK HOUSES

S.No.	Steps	Action to be taken	Format in which information to be furnished
A	Before Sanction		
1	Obtaining Project proposals from farmers	ADH	Format – III
2	Scrutiny of the proposal as per check list	ADH	Annexure – V
3	Application filing in hortnet	HO	
4	Obtaining DMC approval	ADH	
5	Forwarding DMC approval along with prescribed format to State cell along with preliminary inspection report	ADH	Format X (PH)
6	Obtaining SLEC approval	State cell	
B	After Sanction		
7	Issue of administrative sanction	State cell	
8	To monitor the completion of the Pack House within 6 months		
9	Obtaining the required bills and scrutiny	ADH	
10	Constitution of Joint inspection team for inspecting the Pack House obtaining photographs depicting all the components of pack house with joint inspection team.	ADH	
11	Sending proposal along with joint inspection report to State cell for release of assistance	ADH	Format XXV & XXVI
12	Uploading the bills and photos in Hortnet	HO/ADH	
13	Release of assistance to farmers through Hortnet	State cell	

In respect of the Joint inspection, the ADH shall organize Joint inspection of the Pack House in presence of promoter duly constituting a committee with the following members with DMC approval:

- 1) Assistant Director of Horticulture (concerned)
- 2) Horticulture Officer
- 3) Banker (in case of credit linked back ended subsidy)

The joint inspection report should be sent in format- XXV & XXVI with all necessary certifications.

The regional DDHs shall take up 10% random inspection of the established Pack Houses and also shall monitor the status of pack houses sanctioned.

The ADHs are requested to scrutiny the project proposals of pack houses at their level and maintain the proposals for record purpose in their office and need not forward to State cell. They are requested to obtain the DMC approval and send copy of DMC approval duly attesting along with details in format X (PH) and forward to this office for obtaining SLEC approval at State cell.

PATTERN OF ASSISTANCE

Sl. No.	Component	Unit cost	Pattern of Assistance
1	Functional Pack house / on farm collection Unit	Rs. 4.00 lakh/unit with size of 9Mx6M	50% of the capital cost.
2	Integrated pack house with facilities for conveyer belt, sorting, grading units, washing, drying and weighing.	Rs. 50.00 lakh per unit with size of 9Mx18M	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs
3	Pre-cooling unit	Rs. 25.00 lakh / unit with capacity of 6 MT.	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs
4	Cold room (staging)	Rs. 15.00 lakh/ unit of 30 MT capacity	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas
5	Cold Storage (Construction, Expansion and Modernization)		
	i) Cold storage units Type 1 - basic mezzanine structure with large chamber (of >250 MT) type with single temperature zone	Rs. 8,000/MT, (max 5,000 MT capacity)	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs.
	ii) Cold Storage Unit Type 2 – PEB structure for multiple temperature and product use, more than 6 chambers (of < 250 MT) and basic material handling equipment.	Rs. 10,000/MT, (max 5,000 MT capacity)	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs.
	iii) Cold Storage Units Type 2 with add on technology for Controlled Atmosphere	Additional Rs. 10,000/MT for add on components of controlled atmosphere technology. Details are in Appendix-II	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs.

Sl. No.	Component	Unit cost	Pattern of Assistance
6	Refrigerated Transport vehicles	Rs. 26.00 lakh for 9 MT (MIDH & HMNEH)	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas for individual entrepreneurs.
7	Primary / Mobile/ Minimal processing unit	Rs 25.00 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of Hilly & Scheduled areas.
8	Ripening chamber	Rs. 1.00 lakh/MT.	Credit linked back-ended subsidy @ 35% of the capital cost of project in general areas and 50% in case of Hilly & Scheduled areas for a maximum of 300 MT per beneficiary.
9	Evaporative / low energy cool chamber (8 MT)	Rs. 5.00 lakh/unit	50% of the total cost.
10	Low cost onion storage structure (25 MT)	Rs. 1.75 lakh/per unit	50% of the total cost.

CHECK LIST FOR PROJECTS FOR COLD STORAGE & RIPENING CHAMBER

Sl. No.	DESCRIPTION	REMARKS
1	Application Form (Format – I)	
2	Basic Data Sheet with Complete Technical Specifications (Format – VI)	
3	Detailed Project Report as Per MIDH Guidelines	
4	Partnership Deed	
5	Firm Registration Certificate	
6	Bank Sanction Letter	
7	Bank Appraisal Letter	
8	Approval from Gram Panchayat	
9	Approval from Pollution Control Board	
10	SSI registration certificate	
11	Fire Department approval with Drawings	
12	Pan Card Xerox Copy	
13	Electricity approval	
14	KYC documents of all the partners	
15	VAT / CST REGISTRATIONS	
16	Land Conversion	
17	DMC Approval (District Mission Committee)	
18	Affidavit (Format – VII)	
19	Land Documents (Sale Deed / Lease Deed)/ Pattadar pass book copy	
20	Declaration by Engineer (Format – VIII)	
21	NOC from NABARD / NHB/ APEDA/ DIC / SFC and MFPI	

CHECK LIST FOR PROJECTS FOR REEFER VANS

Sl. No.	DESCRIPTION	REMARKS
1	Application Form (Format – I)	
2	Detailed Project Report as Per MIDH Guidelines	
3	Bank Sanction Letter	
4	Bank Appraisal Report	
5	DMC Approval (District Mission Committee)	
6	Affidavit (Format – VII)	
7	Driving license	
8	Copy of proforma invoice of chassis, body and refrigeration units of the vehicles duly confirmed by the lending bank	
9	After issue of administrative sanction and for recommending final release	
a)	Copy of the payment receipts of chassis, body and refrigeration unit etc. of the vehicles duly confirmed by the lending bank.	
b)	Copy of the delivery challans of the body and chassis of the vehicles.	

Annexure-III**CHECK LIST FOR PROJECTS FOR PRIMARY PROCESSING UNITS**

Sl. No.	DESCRIPTION	REMARKS
1	Application Form (Format – I)	
2	Detailed Project Report as Per MIDH Guidelines	
3	Partnership Deed	
4	Firm Registration Certificate	
5	Bank Sanction Letter	
6	Bank Appraisal Report	
7	Approval from Pollution Control Board	
8	SSI registration certificate	
9	Fire Department approval with Drawings	
10	Pan Card Xerox Copy (on firm name)	
11	Electricity approval	
12	KYC documents of all the partners	
13	Land Conversion	
14	DMC Approval (District Mission Committee)	
15	Affidavit (Format – VII)	
16	Land Documents (Sale Deed / Lease Deed) or Pattadar pass book copy	

Annexure - IV**CHECK LIST FOR DOCUMENTS TO BE SUBMITTED TO PACK HOUSE**

Sl.No.	Description
1	Application – (Format – III) (to be retained at ADH office)
2	District Mission Committee Approval
3	Affidavit (Format – VII) (to be retained at ADH office)
4	Pattadar Pass Book Copy (to be retained at ADH office)
5	Bank Consent Letter (to be obtained if credit linked back ended subsidy and to be retained at ADH office)

APPLICATION FORMAT

Cold Storage / Ripening Chamber

**FORMAT FOR SUBMISSION OF PROJECT BASED PROPOSALS POST HARVEST
MANAGEMENT BY PRIVATE SECTOR UNDER MIDH**

1. Name of Project :

2. Type of Activity :

3. Objectives :

4. Purpose (Details of crops stored in cold :

Storages / Ripening Chamber are also to be given)

5. Location of the project with address :

a) Address for correspondence :

b) General area :

c) Hilly/Tribal area :

6. Constitution :

(Date of incorporation and relevant law alongwith a copy of articles and memorandum of association, bylaws, partnership deed and registration certificate which ever is applicable. Documentary proof regarding authorized / paid up capital and promoters contribution.)

(a) Public Ltd. Company :

(b) Private Ltd. Company :

(c) Registered Society :

(d) Association :

(e) Federation :

(f) Producer Company :

(g) Proprietorship firm :

(h) Partnership concern :

7. Management :

8. Brief background of promoters :

a) Category / Caste :

b) Bank name & branch and date of sanction :

9. Cost of Project Rs in lakhs :

(a) Land- (if purchased new along with documentary proof)

(b) Building :

(c) Plant & Machinery :

(d) Contingencies :

(e) Miscellaneous fixed assets :

(f) Working Capital margin :

(g) Pre operative exp. -----

Total : -----

10. Means of Finance

(a) Promoter Share :

(b) Bank Term loan :

(c) Subsidy :

(d) Quasi equity :

(e) Unsecured loan :

Total : -----

11. Details of Cost of Plant & Machinery/equipment supported by quotations.

12. Details of the Building construction and the cost duly certified.

13. Area of Operation with special reference to MIDH Districts to be covered.
14. Availability of raw material, name of the cluster and District along with the major crops.
15. Backward linkages with farmers with reference to either providing services or purchase of raw material.
16. Forward linkages -Analysis of domestic and export markets, tie up made for sale of Produce and branding aspect.
17. No. of farmers/ orchardist to be benefited.
18. SWOT Analysis.
19. Financial Analysis – IRR, NPW, Cost benefit Ratio, Break even point, DER, DSER, Projected balance sheet etc.
20. Insurance of the fixed assets
21. Certificate from Pollution Control Department.
22. Name of the sponsoring bank along with the details of Techno-economical appraisal reports, copy of sanction letter and Detailed Project Report (DPR) as submitted to bank.
23. Affidavit of Rs. 100/- regarding Non-availing of subsidy from any other Central/State Govt. Departments.
24. Social benefits with special reference to employment generation.
 - (a) Direct employment
 - (b) Indirect employment
 - (c) Women/S.T./S.C. employment
25. Details of the sustainability of the project with special reference to its capacity to generate income since only one time grant is admissible.

26. Implementation schedule.
27. Amount of subsidy sought.
28. Production cluster should be identified near the existing infrastructure for pre harvest and post harvest, market and processing, Agri Export Zones (AEZ).
29. Linkages with infrastructure created by the private/ corporate sector in and around the clusters. A write up on the initiatives of the linkages between MIDH clusters and private sector initiative to be brought out.
30. Marketing arrangements for surplus produce inside and out side State/Country to be indicated.
31. List of machinery and equipment.

Signature of the promoter

Recommendations of the Asst. Director of Horticulture _____.

Asst. Director of Horticulture

Note: Synopsis to be enclosed (Format – I / b)

PROPOSALS FOR ESTABLISHMENT OF _____
AT _____ DISTRICT _____

SYNOPSIS

1) Name of the Component & :

a) Sub-Component Applied for :

2) Title with Firm Details :

3) Purpose :

4) Name of the Proprietor/ Promoter/ :
Partnership/ Pvt. Ltd. Company/
Society

5) Details of Project Cost:

a) Bank Term Loan : Rs. Lakhs

b) Other Loan : Rs. Lakhs

c) Capital : Rs. Lakhs

Total Project Cost : Rs. Lakhs

6) Status of the Project:

a) Completed/ Under Construction :

b) If Under Construction Stage

Date of Commencement :

Probable date/ month of completion:

7) Breakup of the Project Cost:

a) Civil Works	:	Rs.	Lakhs
b) Plant & Machinery & Other	:	Rs.	Lakhs

Total	:	Rs.	Lakhs

8) List of Documents:

- a) Approval of the DHM (Dist.Collector) :
- b) Detailed project report (5copies) :
- c) Bank Approval Memorandum :
- d) Affidavit :
- e) Quotations for Supply of Plant & Machinery :
- f) Details of Civil & Technical Works :
Certified by Chartered Engineer
- g) Photos of unit :

9) Details of Estimated Cost & Subsidy as Per MIDH Norms:

- a) Estimated cost : Rs. Lakhs /Unit
- b) Subsidy : Credit linked back ended subsidy @ 25% of the capital cost i.e., Rs. Lakhs/Unit.

Signature of the Promoter

BASIC DATA SHEET

Format - VI

A. Identification

Name of Cold Storage			
Location of Cold Storage	Area / Village	Town	
	District	State	
Name of Promoter Company / Owner			
Type of company (Proprietorship / Partnership / Pvt. Ltd / Ltd)			
Postal address of Promoter			
	Tel / Fax	Mob. No	E-mail
Present activity in brief			
Name of CEO / MD			
Name of Manager / Contact Person		Phone / Mobile No	

B. Basic Cold Store Design Considerations

i) Commodity Storage Requirements

Type of Commodities/Produce		
Ideal / Recommended Storage Conditions – Temperature (DB in °C) – Humidity RH (%) Range – Air Circulation (CMH/MT of Produce) – Ventilation (Air Changes/Day) – CO₂ Range (PPM) Produce Cooling Rate (°C/day) Freezing Point °C – Others		
Cold Chamber Dry bulb (DB in °C)		
Cold Chamber RH (%)		
Max Storage period (months)		
Max product temp (°C) – at the time of loading		
Daily loading rate (MT/day) – in each cold chamber		
Loading Period (months)		
Pull down rate (°C / day)		
Unloading Period (months)		
Daily unloading rate (MT/day) – from each cold chamber		
Ante Room Conditions (T °C & RH %)		
Sorting & Grading Area (T °C & RH %)		
Special Provisions CIPC treatment for Process Potatoes		
Special Provisions – MA / Ethylene Control / Fumigation/ Fresh Air etc		

ii) Fresh Air / Ventilation System

Brief Description of CO ₂ Extraction / Ventilation System	
CO ₂ Concentration Control Range (PPM)	
Monitoring & Control Instrument – Type – Accuracy	
Ventilation Capacity (Max Air Changes/Day)	
Design Considerations for Energy Recovery and Preventing Wetting of Produce	

iii) Cold Store Chamber Sizing and Capacity

No. of chambers:

Type : Mezzanine/ Palletized

Max Height of Building

Details	CSC 1	CSC 2	CSC 3	CSC 4
Total Capacity of Each Cold Store Chamber (MT)				
Internal Chamber Dimensions L x B x H (m)				
No. of mezzanine floors X Height (m) per floor				
Size &Weight of Bags or Boxes being stored				
Total number of Bags/Boxes stored in each Cold Store Chamber				

iv) Ante Room & Process Areas

Details	Length (m)	Width (m)	Height (m)
Ante Room			
Sorting & Grading Area			
Loading / Unloading dock			

v) Machine Room & Utility Areas

Details	Length (m)	Width (m)	Height (m)
Machine Room			
Office Area			
Toilets & Changing rooms			
Any other			

vi) Building & Construction Details

Type of construction: Civil/ Pre-engineered Building

Type of External walls of cold chambers	
Type of Internal / Partition walls	
Type of Roof / Ceiling	
Type of Internal structure / Racks	
Type of mezzanine grating	
Types of Lighting fixtures in cold Chambers	
Types of Lighting fixtures in Process & Other Areas	

vii) Insulation and Vapor Barrier

Type of Insulation: Insulating Sheets / Metal Skin Composite panels

Type of Insulation	Wall		Ceiling / Roof	Floor
	External	Internal		
Type of material EPS / Metal Skin PUF Composite Panels / XPS/ PUR, Others				
Relevant IS Code				
Density (kg/m ³)				
Thermal Conductivity at +10 °C k value (W/m.K)				
Thermal diffusivity m ² /h				
Water vapour transmission rate, ng/Pa.sm, Max.				
Water absorption after 24h immersion, percentage by mass.				
Relevant IS Code of Practice for Thermal Insulation of Cold Store				
Total Insulation Thickness (mm)				
No. of layers & Thickness / layer (mm)				
Type of vapor barrier & thickness (microns)				
Type of Bituminous/Sticking Compound				
Type of Cladding / Covering/External Finish				
Locking/Fixing & Sealing System in case of Metal Skin Composite Panels				
Any other info				

viii) Cold Store Doors & Air Curtains

Type of Insulation	Details
No. of Insulated doors	
Type hinged / sliding	
Insulation Material EPS / PUF / Others	
Thickness of Insulation (mm)	
Type of cladding	
Size of door opening	
Provision of Strip curtains – nos. & overlap %	
Air curtains, if any	
Others	

ix) Material Handling

Proposed Practice: Manual / Semi Automated /Automated

Procedure	Brief Description
Material Handling Procedures & Equipments	
Cap of Electric Elevator Rating of motor (kW)	
Any other device	

x) Grading, Sorting Washing & Packing Line (optional)

Proposed Practice: Manual / Semi Automated /Automated

Procedure	Brief Description
Process Line	
Total Connected Load (kW)	

Please attach a Plan & Layout of the proposed Cold Store unit in accordance to the Statutory Building By-Laws and BIS Building Codes & Standards duly approved by a Registered Architect and Structural Engineer. The drawings should detail out insulation type, thickness and fixing methodology in sectional details.

C. Heat Load Calculation of Cooling System – Summary

Ambient Conditions	Summer	Monsoon	Winter
Dry Bulb Temperature (°C)			
Wet Bulb Temperature (°C)			

Refrigeration Load		During Loading (kW)	During Pull Down (kW)	During Holding (kW)
Transmission Load				
Product Load				
Internal Load	Lighting load			
	Occupancy load			
Infiltration Load				
Ventilation/ Fresh Air Load				
Equipment Load - Fan motors etc.				
Total Load (kW/24 hrs)				

Compressor Operation Hours/Day	Loading Period		
	Pull Down Period		
	Holding period		
Multipliers	Safety Factor		
	Defrost Period		
Total Refrigeration Load	Peak Period	Holding Period	Lean Period
Total Load (KW)			

Please attach detailed heat load calculation sheets of the proposed cold store unit in accordance to the prescribed Technical Standards and Guidelines duly approved by a Qualified Engineer.

Cooling System Design & Equipment Selection

Cooling System Configuration

Type of Refrigerant	Ammonia / Freon / Others
Type of System	Direct Exp / Gravity Feed / Overfeed
Type of compressor	Reciprocating / Screw / Scroll / Others
Type of capacity control	Automatic In steps / Step less
Type of condenser	Atmospheric / Evaporative / Shell & Tube / Plate Heat Exchanger / Other
Cooling Towers (if applicable)	FRP Induced Draft / Others
Type of cooling coil	Ceiling suspended / Floor Mounted / Others
Type of defrosting	Air / Water / Electric / Hot gas
Humidification System & Control (Brief Description)	

Compressor Detail

Compressor Make & Model	Nos.	Comp. RPM	Operating Parameters Evap. SST. / Cond. Temp (°C)	Refrigeration Capacity (KW)	Motor Rating. (KW)	Total Electric Power. (BkW)	Remarks Working /Standby

Condenser Details

Condenser Make & Model	Nos.	Operating Parameters Cond.Temp.(SDT)/ in/out water temp(°C) & flow (lps)	Condens er Capacity (kW)	Electric Fan /Pump Motor Rating (kW)	Total Electric Power (BkW)	Remarks Working /Standby

Cooling Tower Details (if applicable)

Cooling Tower Make & Model	Nos.	Operating Parameters DB & WB Temp, in/out water temp($^{\circ}\text{C}$)	Cooling Tower Capacity(KW)	Fan & Pump Capacity (CMH/LPS) & Motor (kW)	Total Electric Power (BkW)	Remarks Working /Standby

Air Cooling Units (ACU)

ACU Make & Model	Nos.	Operating Parameters Evap. (SST) & TD* ($^{\circ}\text{C}$)	Cooling Capacity (kW)	Air Flow (CMH) & Face Velocity (M/S)	Material of Coil Tubes & Fins	Fin pitch (mm)	Total Fan Electric Power (BKW)

(*) TD – Temperature difference between Evap. (SST) $^{\circ}\text{C}$ & Return Air (at coil inlet).

Please attach Detailed Technical Data Sheets of each equipment namely Compressors, Condensers, Cooling Towers, Air Cooling Units giving General Layout, Dimensions, Material of Construction, Rated Capacity, Operating Parameters and COP (please note that the Air Cooling Unit data sheet should include heat transfer area, fin spacing, no. of rows, air flow, face velocity, fan static, air throw, Fan Motor BKW/KW, fin spacing, etc) duly Certified by the respective equipment manufacturers with reference to the Relevant Codes & Standards.

Electrical Instillation

Total Connected load (kW)	
Estimated power requirement at Peak Load Period (BkW)	
Estimated power requirement at Holding Load Period (BkW)	
Estimated power requirement at Lean Load Period (BkW)	
Capacity of Transformer (KVA) (proposed)	
Size of Capacitor for power factor correction & their operation	
Make & Capacity of standby D.G.Set (KVA)	

Safety Provisions

Details of Fire Fighting equipment	Dry	
	Water based	
Handling Refrigerants & Leaks	Leak Detection	
	Handling measures	
Safety devices – LP/HP cutouts, safety valves, shut off valves etc.		
Details of Emergency alarm system & push button system in cold chambers		
Emergency lighting in Cold chambers & other areas		
Lightening arrestors		
Any other safety provisions		

Codes & Standards Followed

Building Design & Structure	
Construction Materials	
Thermal Insulation & Application	
Refrigeration Equipment & Systems	
Electrical & Mechanical Systems	
Food Safety	
Others	

Energy Saving Equipment & Measures

Details of Energy Saving devices	Brief Description and Savings
Light Fixtures CFL/LED	
Natural Lighting for general areas	
VFD for fans / compressors	
Refrigerant Controls and Automation	
Air Purger	
Power Factor Controller	

Energy recovery heat-exchanger for Ventilation System	
Renewable/ Solar Energy e.g. PV lighting	
PLC Control, & Data Acquisition	
Any other features e.g. water recycling, rain water harvesting	

Operation & Maintenance

Description	Nos. / Details
Proposed staff for Operation & Maintenance	
Proposed Annual Maintenance Contracts (if any)	
Training & Preventive Maintenance procedures	
Sanitation & Hygiene practice	
Pollution Control	

Estimated Performance Parameters of Proposed Cold Store

Parameters	Peak Period	Holding Period	Lean Period
Coefficient Of Performance (COP) Of the Cold Store Unit			
Power Consumption (KWH/Day)			
Total Electricity Cost (Rs/Day)			
Electricity Cost towards Storage (Rs/ MT /Day)			

Other Information

Place

Date

Signature and

Name of Applicant with seal

AFFIDAVIT (Rs. 100/- Stamp Paper)

I / We _____ (Name of the Promoter / Director) son of _____ (Father's Name) resident of _____ (residence address) do hereby solemnly affirm and declare here under.

1) That I am the director of _____, (name of the beneficiary) having its registered office at _____, (office address of beneficiary) and am fully aware of the facts relating to the setting up the project at _____ (location of the project) for _____ (activities to be undertaken by project) and the application made to MIDH for availing assistance under Developmental Schemes - _____

2) That the terms and conditions of the scheme of MIDH under which an application has been made by the applicant have been properly read and understood by me and I affirm that the project / proposal / scheme comply with the terms and condition of MIDH and the application has been made in the correct applicable scheme.

3) That the proposed activities to be undertaken by the project / proposal / scheme are covered under the above scheme of MIDH 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.

4) That the information provided in the application for availing assistance under developmental schemes - _____ is true and correct to the best of my knowledge and belief. The estimates of the cost of project / proposal / scheme, financial viability and operating results have been worked out / computed as per the rule and generally accepted principles and norms in this regard.

5) No Subsidy / grant – in – aid has been availed by the promoters / directors / partners / proprietors for this new project and component thereof from central Govt. or any its agencies.

6) I / We also solemnly affirm that the proposed activity in the application for availing assistance under development schemes - _____ is a completely new activity and not a pre – existing activity or any component thereof and further I assure that the unit will be utilized for the same activity for which the assistance is sought from the MIDH through State MIDH Cell of Telangana Govt for the economic period of 15 years. In case, if the unit is misused I am liable for any action deemed to be fit by the Govt. of Telangana including recovery of the assistance amount extended. The information furnished in the application dated _____ is true to the best of my knowledge and belief and nothing material has been concealed.

7) In case of concealment of any facts in this regard, the MIDH would have right to cancel my application out right at any stage.

8) I will display a sign board depicting “Department of Horticulture” (MIDH, Assisted Project).

9) The release of subsidy is subject to actual expenditure, receipts, inspection, MIDH norms etc., In case of any discrepancy / dispute the decision of the Mission Director & Director of Horticulture is final.

10) I agree and resolve that the department reserves the right to modify, add or delete any term/ condition without assigning any reason thereof and shall also have right to pre and post inspect / monitor the project and verify the related records at any time during the economic life of the project by the concerned officers.

DEPONENT VERIFICATION

Verified on solemn affirmation at _____ that the content of the above affidavit are true to the best of my knowledge and belief and nothing material has been concealed.

DEPONENT / COMPETENT AUTHORITY

(to be Signed by Notary with seal)

DECLARATION

I _____, R/o. _____ - **certify that:**

1. That I am a graduate engineer and have adequate experience / expertise in designing, Constructing and commissioning cold stores, insulation & cooling system and cold chain infrastructure equipment.
2. That a copy of my graduation / post graduation certificate of B.E. / B. Tech / M. Tech is enclosed and shall form part of my certification and declaration.
3. That I am the project / Technical Consultant and have been hired by the project promoter of M/s. _____ to design, conceptualize and prepare the project DPR bearing Ref. No.____.
4. That I am fully conversant with relevant codes and standards applicable to the cold chain infrastructure and affirm invariable compliance of the project to the above mentioned prescribed Technical Standards.
5. That I have thoroughly examined notification F. No. 45-64/2010-Hort dated 25.02.2010 for prescribed technical standards w.e.f. 01.04.2010.
6. That I certify that the components of insulation and refrigeration systems in the prescribed format of the technical data sheet conform the ratings and performance of selected equipments and proposed design as per the prescribed Technical Standards w.e.f. 01/04/2010 vide notifications F. No. 45-64/2010-Hort dated 25.02.2010.
7. That I undertake to adhere to the requirements of confidentiality and non-compete with respect to proprietary information entrusted to me by the promoter/manufacturer of equipment / the Board.

8. That I will assist the Government inspection and regulatory agency during stage inspection of the project and provide any/or all technical clarifications as and when required.
9. That I will furnish a certificate of satisfactory commissioning of the cooling system in conformance to the performance indicators as per the prescribed standards.
10. That in case of any concealment of facts by me in the DPR with respect to invariable compliance to Technical Standards or on any instance of false declaration / certification by me or any part of my declaration is found to be incorrect, the Board may, in its discretion, take any actions (including legal action) against me as deemed fit and proper.

IN WITNESS WHEREOF, the consultant has signed this declaration and certification on this ____ Day of _____ 2014 in the presence of the following witnesses;

WITNESSES:

1.

(Sign of the Consultant)

Preliminary (Inspection Report) while submitting project to State MIDH Cell.

Date of Inspection:

- A Component :
- B **Details of Project** :
- (i) Name of the project :
- (ii) Address for communication :
- with telephone No. :
- C **Project Location with Address** :
- (i). Survey No :
- (ii). Village :
- (iii). Mandal :
- D Constitution (Individual/ Joint :
- Individual/Partnership Firm/ :
- Company. :
- E (i). Proposed Activity : Cold Storage
- (ii). Type :
- (iii). Proposed type of cooling :
- system
- F Name of the Promoter :
- G **Present physical status of the project :**
- I. Construction started or not :
- (i) Land development :
- status/boundary/road :
- (ii) Connecting road to the plot :

- (iii) Stage of cold store building :
civil/pre engineered as on
inspection date :
- (iv) Type of produce to be
stored

Promoter

HO

Asst. Director of Horticulture

PRELIMINARY REPORT (Release of First Installment)

- A Component :
- B **Details of Project** :
- (i) . Name of the project :
- (ii). Address for communication :
with telephone No. :
- C **Project Location with Address** :
- (i). Survey No :
- (ii). Village :
- (iii). Mandal :
- D Constitution (Individual/ Joint :
Individual/Partnership Firm/ :
Company. :
- E (i). Proposed Activity : Cold Storage
(ii). Type :
(iii). Proposed type of cooling :
system :
- F Name of the Promoter :
- G **Present physical status of the project :**
- I. **Construction started or not** :
- (i) . Land development :
status/boundary/road :
- (ii). Connecting road to the plot :
- (iii). Stage of cold store building :
civil/pre engineered as on :
inspection date. :
- (iv). Type of produce to be
stored

H **Bank Details :**

1. Bank Name :
 2. Branch :
 3. Bank Sanction Date :
 4. Loan Account No :
 5. Bank disbursement :
statement with A/c. No. :
 6. Letter from Banker :
- (Subsidy Account no. given by
bank)

It is recommended to release 1st installment Rs. _____
(Rupees. _____ only) as credit linked back ended subsidy as the construction of
the unit was started.

HO

Asst. Director of Horticulture

COMPONENT WISE RELEASES MADE BY THE BANKER FOR COLD STORAGE

Name of the Firm :

District:

Place :

Account No & IFSC Code :

(Rs. In Lakhs)

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
1.	Cost on Land					
2.	Civil Works					
3.	Cost on Building					
4.	Cost on Plant & Machinery					
5.	Ethylene Gas Generation System					
6.	Plastic Crates					
	Total:					

Bank Manager /
Representative (Field Officer)
With Seal

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION BY THE COMMITTEE FOR COLD STORAGE UNDER POST HARVEST MANAGEMENT COMPONENT OF MIDH, TELANGANA.

Name of the Firm:

District:

Place:

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
I.	Means of Finance					
1.	Capital					
2.	Term Loan from Bank					
3.	Subsidy / Margin Money / Un-Secured Loans					
	Total:					
II.	Assessment					
1.	Cost on Land					
2.	Cost on Building					
3.	Cost on Plant & Machinery					
	Total:					

Note: A certificate from CA may be obtained

Recommended for release of subsidy of Rs. _____ Lakhs (Rupees in words)

- The promoter has fulfilled all the observations made in the technical report.

Promoter

TSG Member

Banker

HO

ADH

Sr. Officer

If the capacity is less than 5000 MT actual cost and capacity is considered for calculation.

Certificates:

1. This is to certify that the promoter has established cold storage as per the norms of the MIDH.
2. This is to certify that the promoter has fulfilled all the observations made in the tech. viability report.
3. This is to certify that the project is eligible to avail subsidy of Rs. _____
4. An amount of Rs. _____ may be released as II spell.

Promoter

HO

Banker

TSG member

ADH

Sr. Officer

SUBSIDY CALCULATION SHEET

Name of the Cold Storage:

Total No. of Chambers:

Number of Floors:

Chamber – I						Chamber – II					
Particulars	Length	Width	Height	Volume in Cubic Meters		Particulars	Length	Width	Height	Volume in Cubic Meters	
A.Cellar						A. Cellar					
Less - Machine Room						Less - Machine Room					
Net Volume						Net Volume					
B. Ground Floor						B. Ground Floor					
Less Machine Room						Less Machine Room					
Less Office Space						Less Office Space					
New Volume						New Volume					
C. Floors						C. Floors					
Less Machine Room						Less Machine Room					
Net Volume						Net Volume					

D. Total Net Volume (A+B+C)						D. Total Net Volume (A+B+C)					
E. Total Area											
Chamber – I											
Chamber – II											
F. Capacity in terms											
Total volume / 3.4				MT	Maximum allowed (MT)		5000				
Total Cost of the Project				Lakh							
Cost per MT					Maximum allowed (Rs.)		6000				
Total Eligible Subsidy (40% of cost)					40% of (Capacity X per MT)						

If the capacity is less than 5000 MT actual cost and capacity is considered for calculation.

Certificates:

5. This is to certify that the promoter has established cold storage as per the norms of the MIDH.
6. This is to certify that the promoter has fulfilled all the observations made in the tech. viability report.
7. This is to certify that the project is eligible to avail subsidy of Rs. _____
8. An amount of Rs._____ may be released as II spell.

Promoter

HO

Banker

TSG member

ADH

Sr. Officer

FORMAT XIII-A(CS)

Detailed Report on Cold Storage at the time of final and Joint Inspection

Date of Inspection:

		Information at the time of Inspection	Remarks
1.	(i)Name of the project (ii)Address for communication with telephone No. (iii) Project location with address (iv) Constitution (Individual/ Joint Individual/Partnership Firm/ Company.		
2.	Proposed Activity Type Proposed type of cooling system	Cold Store	
3.	Name of the Promoter		

	(x) Size of each Chamber (xi) Chamber-1 in ft (xii) Chamber-2 (xiii) Chamber-3 (xiv) Chamber-4 (xv) Size of Machinery Room		
5	Technical Details		
	Type of Compressor		
	Make /Model No./ Make Serial No.		
	Motor Type Capacity of the Motor in H.P Make		
	Refrigeration Capacity in Kw/TR		
	Total No. of Compressors Installed		
	Total No. of Motors Installed		
.	Total Capacity of Motors in HP		
	Type of Evaporative Coils		
	Total No. of AHU's Installed		

	No. of Fans per Unit		
	Capacity of AHU in Kw/TR		
	Total Capacity of AHU's In TR		
	Type of Condenser		
	Capacity of Condenser in TR		
6	1.Humidifiers : Present / Not present 2.Make / Model No. 3. Type of Humidifiers	:	
7	Type of Doors		
A	Thickness of Insulation		
B	Insulation Material Used for the Door With Density		
8	Generator Make Model No. Capacity in KV		
9	Material Handling Lift Capacity		
10	Thickness of the Walls		
11	Type of Insulation used for walls Wall insulation Thickness/ Density		

	Vapor Barrier used –Details		
12	Floor Insulation Type Thickness		
13	Ceiling Insulation Material used Thickness Recommendation of Pre Inspecting Officer		
14	Capacity of Transformer		
15	Fire Safety Devices installed or not		
16	Type of Commodities Stored		
17	Brief info on the Market Potential		
18	Any other Information		

Promoter

HO

ADH

Technical Consultant

Senior Officer

Format –IX (A) (RC)

Preliminary (Inspection Report) while submitting project to State MIDH Cell.

Date of Inspection:

- A Component :
- B **Details of Project** :
- (i) Name of the project :
- (ii) Address for communication :
with telephone No. :
- C **Project Location with Address** :
- (i). Survey No :
- (ii). Village :
- (iii). Mandal :
- D Constitution (Individual/ Joint :
Individual/Partnership Firm/ :
Company. :
- E (i). Proposed Activity : Ripening Chamber
- (ii). No of Chambers :
- F Name of the Promoter :

G **Present physical status of the project :**

- I. Construction started or not :
- (i) Land development
status/boundary/road
- (ii) Connecting road to the plot :
- (iii) Stage of Ripening Chamber
building civil/pre engineered
as on inspection date :
- (iv) Type of produce to be
Ripened :
- :

Promoter

HO

Asst. Director of Horticulture

PRELIMINARY REPORT (Release of First Installment)

- A Component :
- B **Details of Project** :
- (i) . Name of the project :
- (ii). Address for communication :
- with telephone No. :
- C **Project Location with Address** :
- (i). Survey No :
- (ii). Village :
- (iii). Mandal :
- D Constitution (Individual/ Joint :
- Individual/Partnership Firm/ :
- Company. :
- E (i). Proposed Activity : Ripening Chamber
- (ii). Type :
- (iii). Proposed type of cooling :
- system
- F Name of the Promoter :
- G **Present physical status of the project :**

I. Construction started or not

(i) . Land development :

status/boundary/road

(ii). Connecting road to the plot :

(iii). Stage of cold store building :

civil/pre engineered as on :

inspection date.

(iv). Type of produce to be :

stored

H Bank Details :

1. Bank Name :

2. Branch :

3. Bank Sanction Date :

4. Loan Account No :

5. Bank disbursement :

statement with A/c. No.

6. Letter from Banker :

(Subsidy Account no. given by :

bank)

:

It is recommended to release 1st installment Rs. _____
(Rupees. _____ only) as credit linked back ended subsidy as the
construction of the unit was started.

HO

Asst. Director of Horticulture

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION BY THE COMMITTEE UNDER POST HARVEST MANAGEMENT
COMPONENT OF MIDH, TELANGANA

RIPENING CHAMBER

Format RC – XIV

Name of the Firm:

District:

Place:

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
I.	Means of Finance					
1.	Capital					
2.	Term Loan from Bank					
3.	Subsidy / Margin Money / Un-Secured Loans					
	Total:					
II.	Assessment					
1.	Cost on Land					
2.	Cost on Building					
3.	Cost on Plant & Machinery					
	Total:					

Note: A certificate from CA may be obtained

Recommended for release of subsidy of Rs. _____ Lakhs (Rupees in words _____)

The promoter has fulfilled all the observations made in the technical report.

Certificates:

- 1) This is to certify that the promoter has established cold storage as per the norms of the MIDH.
- 2) This is to certify that the project is eligible to availed subsidy of Rs.
- 3) An amount of Rs. _____ May be released as II spell

Promoter

Banker

HO

ADH

TSG (Member)

Sr. Officer

RIPENING CHAMBERS**Format - XV****Name of the Firm:**

Sl. No.	Component of cost	Quantum	Unit
1.	Land		Sft
2.	Building		Sft
3. A	No of Chambers		
3. B	Chamber Size		
	a. Length		Ft
	b. Width		Ft
	c. Height		Ft
	d. Crates that can be accommodated of size 1.77'x1.28x1.08' (540x390x340 mm) at 10 crates longitudinally, 3 rows on either side of isle and 8 columns i.e. (10x3x8)*2 nos		No
4.	Fruit storage		
	a. Per Crate		Kgs
	b. Total for chamber		Kgs
5.	Insulation		
	a. PUF panels side and top and polysterene for floor		Sft
	b. Polysterene panels		Sft
	c. Thermocole/ Glass wool etc.		Sft
6.	Door		
	a. Hinged Doors		
	b. Sliding Doors		
	c. Electric operated top sliding door		
7.	Refrigeration		
	a. Direct cooling – Freon systems – 5 HP		Nos
	b. Direct cooling – Ammonia systems		Nos
	c. Water spray – Air Cooled systems		Nos
8.	Humidification		

	a. Humidifier		Nos
	b. Air cooled systems		
9.	Controls		
	a. Temperature and humidity		Nos
	b. Control panel for refrigeration system		Nos
10.	Ethylene Gassing System		
	a. Ethylene liquid dipping		Nos
	b. Ethylene gas generator		Nos
	c. Ethylene gas injection system		Nos
11.	Crates		Nos
12.	Pallets		Nos
13.	Trolley		Nos
14.	Deposits for Electricity etc.		Set
15.	Pre-Operative Expenses		Set
16.	Working Capital		Set

Promoter

Banker

HO

ADH

TSG (Member)

Sr.Officer

CALCULATION SHEET FOR RIPENING CHAMBER

Format RC – XVI

Name of the Ripening

Chamber : **M/s.**

Total No. of Chambers:

Chamber – I						Chamber - II					
Particulars	Length	Width	Height	Volume in Cubic feet		Particulars	Length	Width	Height	Volume in Cubic feet	
A) Ground Floor						B) Ground Floor					
Chamber – III						Chamber - IV					
C) Ground Floor						D) Ground Floor					
E) Less :											
F) Machine Space :											
G) Office Space :											

Total Net Volume														
(A+B+C+D)-E														
L. Total														
Volume														
Chamber - I														
Chamber - II														
Chamber - III														
Chamber - IV														

Total Cost of the Project : Rs. In Lakhs.

Promoter	Banker	HO	TSG Member	ADH	Sr. Officer
----------	--------	----	---------------	-----	-------------

RIPENING CHAMBER

Format - RC - XVII

- 1) Name of the firm :
Proprietor / Partnership :
Name & Address :
Phone Nos. :
- 2) Land (own/lease) purchased / inherited }
If purchased for this purpose, sale deed } : If only the land cost included in the
title deed : project cost
- Area (sq.mt) :
Cost of land :
- 3) Shed (own/lease) :
Dimensions of the structure : } If any the shed cost is included
If shed constructed: Plan, Valuation by Engineer : in the project cost.
Leased period, Lease deed (registered or not) :
- 4) Refrigeration unit :
Company :
Code :
Capacity :

5) Commodity used :
No of chambers :

Internal dimension of the chambers (l,b,h,in ft.) :

Thickness of Puf panel :

No. of Puf panels :

Size of each panel :

Density of Puf :

6) Floor insulation details (dimensions) :

7) Compressor : _____ HP

8) Condenser motor : _____ HP, _____ RPM, _____ Nos

9) Evaporator fan motor : _____ W, _____ RPM, _____ Nos

Power supply : _____ V, _____ PH, _____ HZ

Total power consumption : _____ Kw.

Power consumption / batch

(4 or 5 days) : _____ Kwh

Power costs / kwh. :

No of batches / year :

Wt of bananas per batch :

Cost of procurement of banana per ton :

Sale price of banana per ton :

10) Humidifier cost & Make (Indian or Foreign) & nos. :

11) Ethylene generator : cost , Nos :

12) Bills (certified)

Refrigeration unit :

Puf Panels :

Control devices (temp, RH etc.) :

Humidifier :

Ethylene generator :

13) No. of crates / chamber :

Dimensions of the crates (ft) :

Weight of bananas per crate :

14) Any other (pl. specify) :

- a) Copies of bills / vouchers / invoices / receipts – counter signed by banker.
- b) Bank sanction letter with appraisal report.
- c) Loan disbursement details./ Statement of account ,(Acct.No)

Promoter

Banker

HO

ADH

TSG (Member)

Sr. Officer

FORMAT - II

Application for Availing Assistance / Subsidy

Under MIDH

Recent
Passport Size
Photograph

Name of the Scheme: Post Harvest Management

COMPONENT : PACK HOUSE

1 Name of the Farmer :

2 Father / Husband Name :

3 Caste (SC/ST/BC/OC) :

4 Address: :

Phone / Cell No.: :

5 Land records with Extent in :
Acres / Ha.

(Copy of Pass Book / Adangal)

6 Source of Irrigation (Open well / :
Bore well / Canal)

7 Name of the Financing Bank, :
Loan Amount Proposed

8 Whether any Govt. Subsidy :
availed previously

9 Any other relevant information :

Declaration

I, _____

declare that the particulars furnished above are true to the best of my knowledge and I promise that the benefit obtained from State MIDH Cell will be used for the purpose for which it is given and in case of misuse I am liable for any action deemed to be fit by Govt. of Telangana including recovery of the subsidy amount with 12% interest to the Government.

Signature of the Farmer / Entrepreneur.

Recommendations of the

Asst. Director of Horticulture _____.

With due approval of the DHM (Dist. Collector).

Enclosures:

Asst. Director of Horticulture.

DETAILS OF THE PROPOSALS FOR ESTABLISHMENT OF PACK HOUSES ALONGWITH DMC APPROVED

District:

Sl. No.	Name of the farmer/ Father Name	Village / Mandal	Survey No.	Area in Ha.	Crops	Total cost of the project	Eligible subsidy	Bank name**	Bank term loan**	Category
1	2	3	4	5	6	7	8	9	10	11

Certificates:

1. This is to certify that the pack house is as per the norms of the MIDH.
2. The project is recommended to place before SLEC for approval and are eligible for issuing In principal administrative sanction.

Signature of ADH

** If credit linked back ended subsidy only

FINAL JOINT INSPECTION REPORT OF REEFER VAN

Format RV- XVIII

Sri. _____, S/o. _____, R/o. _____
_____ has purchased refrigerated van (reefer van) for transport of horticulture produce
as per technical specifications of MIDH with refrigeration unit of Make _____ with model no.
_____ with capacity _____ with vehicle registration no _____.

Sri. _____ is eligible for Rs. _____/- towards purchase of reefer van. It is certified that the
van was displayed with logo of MIDH and also written as "THE FINANCIAL ASSISTANCE GIVEN BY DEPARTMENT OF
HORTICUTLURE & MIDH" on the van. The vehicle purchase bills were verified.

It is recommended to release subsidy of Rs. _____/- to Sri. _____.

Promoter HO Banker TSG ADH Sr. Officer

COMPONENT WISE RELEASES MADE BY THE BANKER (REEFER VAN)

Name of the Firm :

District :

Place :

Account No :

(Rs. In Lakhs)

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
1.	Cost on vehicle					
2.	Cost of the refrigeration unit & container					
3.	Cost of fabrication					
4.	Others					
	Total:					

Bank Manager /
Representative (Field Officer)
With Seal

JOINT INSPECTION REPORT FOR PRIMARY PROCESSING UNITS**FORMAT PP-XX**

Details of civil works takenup and expenditure incurred by M/s. _____.

Sl.No.	Civil Work	Expenditure incurred	Remarks
1			
2			
3			
4			
5			
6			
7			
	Total :		

Certificate:

- 1) Certified the promoter has done the above mentioned civil works and actually incurred an expenditure of Rs. _____/-.
- 2) Certified that _____ is eligible for the subsidy of Rs. _____/- towards civil works.

Promoter

Banker

HO

ADH

Senior Officer

TSG Member

JOINT INSPECTION REPORT FOR PRIMARY PROCESSING UNITS**FORMAT PP-XXI**

Details of the plant and machinery purchased by M/s. _____

Sl.No.	Item	Expenditure incurred	Remarks
1			
2			
3			
4			
5			
6			
7			
	Total :		

Certificate:

- 1) Certified that the promoter has purchased the above mentioned plant & machinery in addition to the existing equipment.
- 2) Certified that the purchase bills have been verified and M/s. _____ has actually incurred an expenditure of Rs. _____/-.
- 3) Certified that he is eligible to avail subsidy of Rs. _____/- towards plant & machinery
_____.

Promoter**Banker****HO****ADH****Senior Officer****TSG Member**

COMPONENT WISE RELEASES MADE BY THE BANKER FOR PRIMARY PROCESSING UNITS**FORMAT- PP XXII**

Name of the Firm :

District :

Place :

Account No :

(Rs. In Lakhs)

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
1.	Plant & Machinery					
a						
b						
C						
d						
e						
	Total:					

Bank Manager /
Representative (Field Officer)
With Seal

**FORMAT TO CONDUCT FINAL AND JOINT INSPECTION FOR PRIMARY PROCESSING UNITS BY THE COMMITTEE UNDER POST
HARVEST MANAGEMENT COMPONENT OF MIDH, TELANGANA.**

Name of the Firm:

District:

Place:

Sl. No.	Particulars	Project Cost		Actual investment as per the joint inspection team		Remarks
		As per project report	As appraised by Banker			
1	2	3	4	5	6	7
1	Means of Finance					
1.	Capital					
2.	Term Loan from Bank					
3.	Subsidy / Margin Money/ Un-Secured Loans					
	Total:					
II.	Assessment			Component wise Loan amount released by Banker	Component wise Promoters Margin money	
1.	Cost on Land					
2.	Cost on Building					
3.	Cost on Plant & Machinery					
4.	Plastic Crates					
5.	Others please specify					
	Total:					
1	Loan amount released by Banker					
2	Promoters Margin money					
	Total :					

Note: A certificate from CA may be obtained

Certificates:

1) This is to certify that Sri./ Smt. _____ has established the Primary Processing Unit as per project report.

2) This is to certify that Sri./ Smt. _____ is eligible to avail subsidy of Rs. _____/-

3) The subsidy amount of Rs. _____/- for civil works and Rs. _____/- for purchase of plant & machinery may be released to M/s. _____.

Promoter

Banker

TSG Member

HO

ADH Sr. Officer

COMPONENT WISE RELEASES MADE BY THE BANKER OF PACK HOUSE**(in case of credit linked back ended subsidy)**

Name of the Firm :

District:

Place :

Account No :

(Rs. In Lakhs)

Sl. No.	Particulars	Project Cost		Actual investment		Remarks
		As per project report	As appraised by Banker	Loan amount released by Banker	Promoters Margin money	
1	2	3	4	5	6	7
1.	Cost on Land					
2.	Civil Works					
3.	Cost on Building					
4.	Cost on Plant & Machinery					
5.	Others, please specify					
	Total:					

Bank Manager /
Representative (Field Officer)
With Seal

FORMAT – XXVI (PH)

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF PACK HOUSE BY THE COMMITTEE UNDER POST HARVEST
MANAGEMENT COMPONENT OF MIDH, AP.

Name of the farmer:

District:

Place:

Date of approved in SLEC :

As per project report					As per the inspection and actual investment				
Particulars	Specifications	Capacity	Qty.	Amount (Rs.)	Specifications	Capacity	Qty.	Amount (Rs.)	Remarks
ck House	30 x 20 ft. with GI/Asbestos roof, Hard cement flooring, Windows, doors of country wood/ Iron Sheet. 6 windows and 2 no. of 6 feet double door.	600 sft.	1	275000					
ighing Machine	406 x 660mm/ 300 Kgs capacity	300 kg	1	10000					
ter with connection, Electrical Wiring with fuses, tches, holders, bulbs, s, emergency lights etc.	800VA. 500 Watts	5 Tube lights, 3 fans, 2 hrs backup	1	25000					
cking / Grading Table	4'X8' of GI or SS material, with 100mm side protection to stop roll off and with provision to drain water.		1	20000					
stic Tubs / Cement Tubs	5'.6" x 2'.6" x 0'.17"		3	20000					

	1 st Water tub for cleaning of fruits before chemical treatment with fresh water. 2 nd water tub for fungicidal treatment. 3 rd water tub for cleaning of fruits after treatment with fresh water.								
er Head Plastic Tank	Plastic "Sintex" or equivalent or cement based located at height either outside or with separate support. Water connection from sintex water tank to 3 water tubs with PVC pipe.	2000 lts.	1	15000					
ling Fans and local de tables covered with m and rexine				20000					
er assets	Small office table, 3nos chairs			15000					
Total :				400000					
nk loan disbursed to the moter (If credit linked ck ended subsidy)									
moters margin amount									
al :									

Certificates:

- 1) This is to certify that Sri./ Smt. _____ has established Pack House as per project report and norms of MIDH.
- 2) This is to certify that all the original purchase bills of the items mentioned above have been verified and found correct.
- 3) This is to certify that Sri./ Smt. _____ is eligible to avail subsidy of Rs. _____/-
- 4) The subsidy amount of Rs. _____/- may be released.

Promoter**HO****ADH****Banker****(If credit linked back ended subsidy)**

FORMAT – XXVII (PH)

**FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF PACK HOUSE FOR FLOWERS BY THE COMMITTEE UNDER
POST HARVEST MANAGEMENT COMPONENT OF MIDH, TELANGANA.**

Name of the farmer:

District:

Place:

Date of approved in SLEC :

As per project report					As per the inspection and actual investment				
Particulars	Specifications	Capacity / Units	Qty.	Amount (Rs.)	Specifications	Capacity	Qty.	Amount (Rs.)	Remarks
Pack House	30 x 20 ft. with GI/Asbestos roof, Hard cement flooring, Windows, doors of country wood/ Iron Sheet. 6 windows and 2 no. of 6 feet double door.	600 sft.	1	225000					
Water with connection, Electrical Wiring with fuses, switches, holders, bulbs, fans, emergency lights etc.	800VA. 500 Watts	5 Tube lights, 3 fans, 2 hrs backup	1	16500					
Mechanical :									
Grading and working table	3' x 5' of wooden or iron or Plastic tables	No's	4	20000					
Stools for Tables	Wooden or plastic or iron stools	No's	24	7200					
Plastic Buckets	Plastic buckets each of 20 lts capacity	No's	20	3000					
Plastic tubs	Plastic tubs each of 40 lts capacity	No's	6	2400					
Secateurs	Secateurs – 5	No's	5	1700					
Scissors	Scissors – 12	No's	12	1800					
Over Head Plastic Tank	Plastic "Sintex" or equivalent or cement based located at height	2000 lts.	1	10000					

	either outside or with separate support. Water connection from sintex water tank to 3 water tubs with PVC pipe.								
ling Fans and local de tables covered with m and rexine				12400					
er assets	Small office table, 3nos chairs								
Total :				300000					
nk loan disbursed to the moter (If credit linked k ended subsidy)									
moters margin amount									
al :									

Certificates:

- 1) This is to certify that Sri./ Smt. _____ has established Pack House as per project report and norms of MIDH.
- 2) This is to certify that all the original purchase bills of the items mentioned above have been verified and found correct.
- 3) This is to certify that Sri./ Smt. _____ is eligible to avail subsidy of Rs. _____/-
- 4) The subsidy amount of Rs. _____/- may be released.

Promoter

HO

ADH

Banker

(If credit linked back ended subsidy)

Appendix II

Technology Induction in cold chain, Add-on for CA and Modernization (Subject to maximum of Rs. 5.00 crore for CA equipment and Rs. 2.50 crore for Modernization)

Sl.No.	Item	Description	Admissible Cost
i	CA Generator	Inclusive of sensors, pressure equalising equipment, controls	Rs. 1.25 crore per unit, maximum 2 generators
ii	Specialised CA Doors	Add-on specialisation to storage doors for positive pressure chambers.	Rs. 2.5 lac per door, maximum 20 doors
iii	CA Tents	Low cost enclosure of polyethylen PVC, mylar or other impermeable body for existing or new cold stores	As per original invoice, maximum 5 enclosures
iv	Programmed Logic Controller (PLC) equipment	Electronic and electrical logic controls for machinery & equipment for existing or new cold stores.	50% of cost as per original invoice, maximum Rs 10 lakh
v	Dock Levelers	In existing or new storages	Max Rs. 7 lakh per unit, max 5 units
vi	Warehouse Development & Regulatory Authority (WDRA) / Negotiable Warehouse Receipt (NWR) system, equipment	Computers and printers & software for use with NWR of WDRA	100% of cost as per original invoice, maximum Rs. 2 lakh
vii	Specialised Packaging	Automated packaging lines for fruits & vegetables with farm code labelling, with packaging material	100% of cost as per invoice, maximum Rs. 15 lakh per project
viii	High Reach Material Handling Equipment (MHE)	Specialised material Handling equipment	Rs. 17 lakh per unit, for max 2 units.
ix	Modernisation of refrigeration	For upgrading of evaporator system, compressor system	50% of cost as per original invoice, maximum Rs. 100 lakh @ Rs. 2500/MT
X	Modernisation of insulation	For repair or modernising of cold chamber insulation	50% of cost as per original invoice, maximum Rs.100 lakh @ Rs. 1500/MT
Xi	Reefer Container	Reefer container for use	Max Rs. 6 lakh per

		on existing chassis trailers	9MT (20 foot container)
Xiii	Advanced Grader	Computerised, Optical Grading Lines, with packaging material	100% of cost as per original invoice, max Rs. 75 lakh per line
Xiv	Stacking system	Racking system Bins, Pallets, for existing or new cold stores.	100% of invoice cost, max Rs 2000/MT
Xv	Retail Shelf / equipment	Temperature controlled retail cabinets or merchandising equipment	Maximum Rs. 10 lakhs per establishment
Xvi	Alternate Technology	Vapour Absorption, Phase change material, Solar PV panels or Solar Thermal sys	100% of cost as per invoice, maximum Rs. 35 lakhs per project

Maximum permissible subsidy shall be subject to original invoices and in no case more than Rs. 7.50 crore, whichever is lower. For add-on technology, subsidy shall be provided as credit linked back ended at 35% of the capital cost.

Technology offers inherent value for operators and the admissible cost norms are designed to incentivize induction and not to serve as venture funding.

Any other components as maybe decided by Technical Committee when new technology or items that reduce carbon footprints are introduced. For individual unit components like insulation, graders, CA generator, solar panels, etc - NCCD shall publish guidelines for use by appraising agency.

HUMAN RESOURCE DEVELOPMENT

Objectives:

- Training the farmers, field level workers and officers.
- Providing appropriate training to the farmers for adoption of high yielding varieties of crops and farming systems and also to sensitize the staff and farmers on post harvest management.
- To familiarize the farmer about the production practices being followed by progressive farmers.

NON-NEGOTIABLES WHILE CONDUCTING TRAINING PROGRAMME TO THE FARMERS

a) Field trainings to farmers at District Level:

1. The districts have to identify the training needs of the horticulture farmers in the district keeping in view, the horticulture profile, productivity pattern, incidence of pest, post harvest practices and other such relevant issues. Based on the training needs, the ADH in consultation with field functionaries should prepare training calendar which is district specific. The calendar will contain mandal-wise crop-wise training schedule. Training programmes conducted without preparing the training calendar will not be eligible for drawing assistance from SHM funds.
2. The farmers / beneficiaries identified under SHM will invariably be covered under HRD program. Especially, farmers identified for Rejuvenation, INM/IPM, Organic farming and belonging to SC/ST & small and marginal farmers shall be covered under HRD Program without fail.
3. As the training programs can be conducted by Govt. as well as reputed private and NGO sector, the ADH shall identify resource persons including retired personnel of Horticulture dept., KVK's, progressive farmers and empanel them and their services can be used by paying honorarium.
4. Providing written literature in Telugu on the training subject to the trainees is a must. **If training is conducted without giving the written literature, it will not be considered as training for getting assistance.**

5. The village level trainings, conducted by the AD(H) shall have field orientation and half-a-day field visit shall be arranged in the relevant field.
6. Using of audio visual equipment should be promoted and already CDs were supplied on various topics and they have to be shown to the farmers by arranging TV & VCD.
7. Feedback of the farmers on the usefulness of the training shall be obtained in specially designed feedback forms or in a register along with the signatures of the participants.
8. Documentation like photograph shall be taken for each training program. Press publicity should be given on these training programs.
9. The ADH should visit maximum number of training programmes as far as possible as this will give an opportunity to interact with farmers and get feedback on horticultural issues.
10. A register has to be mentioned in token of the farmers attended.

b. Exposure visit to the farmers:

1. In order to familiarize the farmer about the production practices being followed within the State and in other states (including using of improved hybrid seeds, post harvest, food processing etc.), exposure visits can be organized.
2. The districts have to identify the interested areas for which the district is intending to sponsor the farmers and these areas will emerge as training needs assessed by the district.
3. The ADH should identify the places/ states where the suggested areas are being successfully practiced and coordinate with the institutions / agencies and fix tentative dates.

c) Training of farmers:

i) Within the Districts:

- District officers can organize one day trainings to farmers (on farm).
- The Programme can be organized at Villages / Mandals basing on availability of Horticulture farmers of not less than 25. The eligible expenditure viz food charges, course material, remuneration to resource person and Traveling Allowance to the farmers should not exceed Rs.400/- per farmer.
- Community wise coverage of farmers should also be ensured under the targets allotted to each district.
- Trainings under this sub-component are to be organized by District Officers subject to approval of action plan by NHM and after specific release of funds from SHM.

ii) Within State:

Regional Horticulture Training Institutes are established at the following district Head quarters. Funds are released to the ADHs of concerned district.

<u>Place of RHTI</u>	<u>Districts attached for coverage of farmers</u>
Srikakulam	- Srikakulam, Vizianagaram, Visakhapatnam.
Eluru, (W.G)	- E.G, W.G, Krishna
Ongole (Prakasam)	- Guntur, Prakasam, Nellore
Ananthapur	- Ananthapur, Chittoor.
Kadapa	- Kurnool, Kadapa
Mahaboobnagar	- Mahaboobnagar and nearer mandals of Nalgonda/ Rangareddy dist.
Nizamabad	- Adilabad, Nizamabad and nearer mandals of Medak.
Warangal	- Khammam, nearer mandals Nalgonda and Karimnagar.
Hyderabad (HTI)	- R.R.Dist, nearer mandals of Nalgonda & Medak.

The farmers are to be sent to RHTI as per the Training Schedule issued by the Principal RHTI, to the districts attached to RHTIs in advance.

RHTIs are to organize two days training programme covering 25 farmers under each programme.

Five Programmes can be organized in a month.

- Selection of beneficiaries shall be primarily be from the beneficiaries of various schemes being implemented by the department. The expenditure per trainee should not exceed Rs.1200/- per day. This is inclusive of all expenses food, hostel facility, course material, misc. expenditure, rent for the RHTI building, remuneration to Principal, staff of RHTIs, electricity, water charges, Field visit etc.
- The item-wise ceilings on expenditure will be issued separately to RHTIs.
- The travel expenses of farmer from his village to place of training, will be based on actual bus/train fare which will be reimbursed to the farmers.

Every 3rd training of the month should invariably conduct or organized in village for 2 consecutive days under intimation to this office.

d) Exposure Visit of Farmers:

i) Outside State:

Exposure Visits to farmers outside the State can be organized by the district officers to the places of precision farming, Hi-tech floriculture, Organic farming, Processing Industries and Hi-tech farming and to places where latest post Harvest technologies are adopted and market facilities are created. The eligible expenditure will be Rs.625/- per day per farmer and limited to 3 days stay outside state. The travel expenses will be paid based on actual bus/train fare. This can be organized by the district officer after obtaining specific sanction from the Mission Director and after the approval of Action Plan and release of funds specifically for the purpose of SHM.

This is a project based component. Specific proposals need to be sent by district officers indicating the place of exposure visit, No. of farmers and purpose of exposure visit. After receipt of sanction from Mission Director and release of funds only the exposure visit can be undertaken.

Training / Study tour of Technical Staff / Field functionaries:

(HOs / ADHs / DDs H / JDs H)

i) Within State:

The eligibility per participant is Rs.300/- per day besides TA/DA admissible as per APTA Rules. The nomination of Departmental Officers to training programme within the State will be made by SHM with the approval of DOH / Mission Director and funds will be released accordingly.

ii) Study Tour to Progressive States / Units:

Under this Programme a group of minimum of 5 participants from departmental officers will be nominated by MIDH with the approval of CoH / Mission Director to the other States, GoI Institutions, National Institutions and Research Centres etc., The amount admissible will be Rs.800/- per day per participant plus TA/DA as admissible as per APTA Rules, which will be released after allotment of funds by NHM.

iii) Outside India:

Under this Programme specific proposals need to be sent to NHM, for approval by GOI and expenditure of not more than Rs.6.00 lacs per participant and 100% cost of actual expenses will be admissible.

AWARENESS PROGRAMMES

Objectives:

- To create awareness of different hi-tech Horticulture practices, educating the farmers about the value addition, Good Management Practices, marketing facilities, technical know-how and to implement the same for better marketable produce among farmers by organizing district level horticulture shows.
- Specific proposals has to be sent for approval and release of funds.

FARM MECHANIZATION

Objective:

- Increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low.
- Creating hubs for hi-tech & high value farm equipments.
- Provide financial assistance to farmers for procurement of farm machinery and implements.

**COST NORMS AND PATTERN OF ASSISTANCE UNDER SUB MISSION ON
AGRICULTURAL MECHANIZATION (SMAM) DURING 12TH PLAN PERIOD.**

**Component: Financial Assistance for Procurement of Agriculture Machinery and
Equipment**

S.No .	Component	Type of machinery	Category	Unit	Maximum permissible Cost (in lakhs)	Pattern of assistance
1	2	3	4	5	6	7
1	Tractor upto 20 HP	Tractor 8-15 HP, Tractor 15-20 HP	General	No.	3.00 per unit	25% of cost subject to a maximum of 0.75 lakhs per unit for General Category farmers.
			SC & ST	No.	3.00 per unit	35% of cost subject to a maximum of 1.00 lakh per unit for SC & ST Category farmers.
2	Power tiller					
a	Power tiller below 8 HP	Power tiller below 8 HP	General	No.	1.00 per unit	Subject to a maximum of 0.40 lakhs per unit for General Category farmers.
			SC & ST	No.	1.00 per unit	Subject to a maximum of 0.50 lakh per unit for SC & ST Category farmers.
b	Power tiller above 8 HP	Power tiller above 8 HP	General	No.	1.50 per unit	Subject to a maximum of 0.60 lakhs per unit for General Category farmers.
			SC & ST	No.	1.50 per unit	Subject to a maximum of 0.75 lakh per unit for SC & ST Category farmers.
3	Self propelled Horticulture Machinery	Post Hole Digger/ Augur, Pneumatic / Other Planter, Fruit Plucker, Tree Pruners and Fruit Harvesters	General	No.	2.50 per unit	Subject to a maximum of 1.00 lakhs per unit for General Category farmers.
			SC & ST	No.	2.50 per unit	Subject to a maximum of 1.25 lakh per unit for SC & ST Category farmers.

- The farmers who are having orchards are only eligible for the component Farm Mechanization.
- The ADHs should not exceed the targets allotted to them.
- The empanelled firms done by M/s AP Agros are only eligible to supply farm machinery.

- The empanelled companies should be registered in HORTNET with their bank account details.
- The empanelled companies should get their equipments tested either from FMTTI (Farm Machinery Training and Testing Institute) Geraldine A.P. or Designated Institute from DAC are only eligible for subsidy.
- All the companies / Authorized Dealers should furnish bank account numbers along with the IFSC codes to concerned ADHs for online transfer of amounts of subsidy amount through RTGS only.
- The empanelled companies list along with the prices should be made available to the farmers.
- The choice of the farmer in selection of the firms should be given priority.
- After the selection of the firm and its make, the concerned HO/ ADH should explain the details of subsidy and non subsidy particulars to the identified Beneficiaries, who are enrolled in the scheme.
- The application should be collected by the concerned HO and the ADH will scrutinize it.
- The identified farmers should pay the non subsidy amount in shape of DD of the particular make and firm will be drawn in favour of the concerned firm / authorized dealer empanelled through Agros and will be submitted to the concerned ADH.
- The concerned ADH will issue a purchase order along with the DD of non- subsidy amount to the approved firm / authorized dealer empanelled through Agros with a copy marked to concerned farmer.
- The firm should deliver the desired make of the machinery to the farmer.
- The original invoices / bills and purchase order of the concerned firms / authorized dealer empanelled through Agros will be retained at concerned ADH office only.
- The concerned ADHs will send ink signed final proceeding along with a annexure approved by District Collector to the Head Office for effecting the payment to the concerned firms / authorized dealer empanelled through Agros.
- During disbursement of the machinery to the farmer concerned HO, ADH and concerned firm / authorized dealer empanelled through Agros representative should take a photo along with the machinery and the same is to be uploaded in HORTNET.
- The subsidy amounts will be released to the firms / authorized dealer empanelled through Agros through online transfer directly from Head office.
- The identified beneficiaries should be uploaded in the HORTNET and the release of subsidy under various components will be through HORTNET.

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Protected Cultivation

Norms & Guidelines—2014-15



Mission for Integrated Development of Horticulture
Department of Horticulture, Telangana State

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PROTECTED CULTIVATION - 2014-15

GREEN HOUSES / SHADENET HOUSES / MULCHING:

Objectives:

- o Enhancing productivity per unit area.
- o Promotion of high value Horticulture crops under green houses.
- o Propagation of planting material to improve germination percentage and better hardening.
- o To promote high value vegetable cultivation under Shadenet House.
- o Year round production of floricultural crops and off season production of vegetables & fruit crops.
- o Disease free and genetically superior transplants can be produced continuously.

Points to be considered while constructing green house:

- o East and South for the sun is excellent for the green house, which can remain open on both these sides, but it should be shaded on the north and the west to protect from winds.
- o The site should be free from shadow.
- o The site should be at a higher level than the surrounding land with adequate drainage facility.
- o Availability of good quality irrigation water and electricity.
- o pH of irrigation water should be in the range of 5.5 to 7.0 and EC between 0.1 to 0.3mS/cm.
- o pH of soil should be in the range of 5.5 to 6.5 and EC between 0.5 to 0.7mS/cm.
- o Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 Km/hr or 36 Meter per second.

A. General Guidelines:

1. Procedure to apply for assistance:

A. Under Self-finance cases

- I. All the cases must be entertained through online on HORTNET in case assistance is to be availed under MIDH scheme.
- II. The cases shall be entertained on First Come First Serve Basis.
- III. The applicant shall be responsible for the completion of all required documents. Incomplete documents does not entitles applicant to avail assistance. The application shall be considered only after completion of all the documents.
- IV. Farmer will apply to concern ADH office through HO of concerned block with complete required documents as per check-list.
- V. ADH will verify the documents as per check-list and will forward the case online on HORTNET to headquarter with his recommendation as per availability of the funds with them.
- VI. Headquarter will scrutinize the cases and accord approval for release of assistance under this component.
- VII. ADH will issue sanction letter after approval from HQ.

B. Under bank finance:

- I. All the cases must be entertained through online on HORTNET in case assistance is to be availed under MIDH scheme.
- II. The cases shall be entertained on First Come First Serve Basis.
- III. The applicant shall be responsible for the completion of all required documents. Incomplete documents does not entitles applicant to avail assistance. The application shall be considered only after completion of all the documents.
- IV. Farmer will apply to concern ADH office through HO of concerned block with complete required documents in two set of copies as per check-list.
- V. ADH will verify the documents, if found, as per check-list and will send second copy to the bank with pre-sanction letter to bank for sanctioning the loan of the project in front ended credit linked project.
- VI. Bank after sanctioning the loan amount of project will send a copy of sanction letter and appraisal report to ADH for the sanction of project. The date of receiving of appraisal report in ADH office shall be treated as first day of application and will be considered based on available targets.
- VII. ADH will forward the all case online on HORTNET to headquarter with his recommendation as per availability of the funds with them.

VIII. Headquarter will scrutinize the cases and accord sanction for release of assistance under this component.

2. Eligibility Criteria for applicant:

1. Minors are not eligible.
2. Only farmer of **Telangana state** can be a beneficiary under the schemes. The document viz. Ration card/voter card/*Aadhar* card/Domicile/Passport etc. is required.
3. Farmer means a person having land ownership in one's name. For this he has to submit Land Records: Original *Pattardar Pass book* (Latest by three months) Land verification report by *Patwari and VRO*. All the documents submitted shall latest not more than three months old.
4. Farmer includes farmer's family, means husband, wife and their minor children. Ration card is required to prove family unit.
5. The adult son/daughter or in case of his/her death, his/her widow/widower and children shall be deemed to be living with the parents or either of them. The adult son/daughter shall only be considered as separate unit only when separated from parents. *It means they live separate from parents and this can be verified by means of Adhaar card and/or Voter ID Card or Driving License or separate ration card having in all the cases separate address to that of their parents.*
6. Department promotes cluster and for that farmers of Telangana can take land on lease. But in all such cases the cluster projects should be bankable. The combined amount of assistance to such cluster projects should not increase 20% of the total financial targets of that district.
7. Only those applicants are eligible to apply who did not availed assistance on account of Protected Cultivation in his/her name/spouse name or in name of dependent member of his/her family from any Government agency. Further those applicants or dependent family members who have been availed assistance under this component at anytime, anywhere in Telangana are not eligible.

3. Empanelment of new firms: the new firms shall be empanelled during 2014-15.

4. Training: Minimum three days training-cum-workshop regarding awareness on Protected Cultivation, issues related to Cultivation, Construction and Maintenance of Poly houses is required. A certificate to this effect shall be issued by RHTIs. Training certificate is mandatory before release of assistance on account of cost of cultivation.

5. Construction of Protected Structures: The work of construction of protected structures shall be completed within a period of **90 days**. Further, an extension of maximum 30 calendar days may be considered in advance in writing.

6. Assistance Limit: The assistance shall be applicable as per norms given below:

7. Pattern of Assistance:

Sl.No.	Item	Estimated unit cost	Pattern of Assistance
1	Green House Structure		..
	a. Fan & Pad system		
		Rs.1650/Sqm (up to area 500 Sq.m) Rs.1465/Sq.m (>500 Sqm up to 1008 Sqm) Rs.1420/Sq.m (>2080 Sq.m up to 2080 Sqm) Rs.1400/Sq.m(>2080 Sq.m upto 4000 Sq.m) Above rates will be 15% higher for hilly areas.	50% of cost for a maximum area of 4000 sq.m per beneficiary.
	b. Naturally ventilated system		
	i) Tubular structure	i. Rs.1060/Sq.m (up to area 500 Sq. m) ii.Rs. 935/Sq.m (>500 Sq. m up to 1008 Sq. m) iii.Rs. 890/Sq. m (>1008 Sqm up to 2080 Sq. m) iv.Rs. 844/Sq. m (>2080 Sq. m up to 4000 Sq. m) Above rate will be 15% higher for hilly areas	50% of cost limited 4000 sq. m per beneficiary.
	ii) Wooden structure	Rs. 540/Sq. m and Rs. 621/Sq. m for hilly areas	50% of the cost limited to 20 units (each unit not to exceed 200 Sqm per beneficiary).
2	Shade Net House		
	(a) Tubular structure	With plastic top as addition: >4.00m height - Rs. 710/Sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Dome shape; >4.00 m height – Rs. 600/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Flat shape-all GI; 4.0 m height – Rs. 550/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
		Flat shape-Cable purlin, 4.0 m ht. – Rs. 525/sqm	50% of cost limited to 4000 Sq. m. per beneficiary.
	(b) Wooden structure	Rs. 492/Sqm and Rs. 566/Sqm for hilly areas	50% of cost limited to 20 units (each unit not to exceed 200 Sq.m) per beneficiary.

Sl.No.	Item	Estimated unit cost	Pattern of Assistance
3	Cost of planting material of high value vegetables grown in poly house	Rs.140/Sq. m	50% of cost limited to 4000 Sq.m per beneficiary.
4	Cost of planting material & cultivation of Orchid & Anthurium under poly house /shade net house.	Rs. 700/Sqm	50% of cost limited to 4000 Sq. m per beneficiary.
5	Cost of planting material & cultivation of Carnation & Gerbera under poly house/shade net house.	Rs. 610/Sqm	50% of cost limited to 4000 Sq. m per beneficiary.
6	Cost of planting material & cultivation of Rose and lilum under poly house/shade net house	Rs. 426/Sqm	50% of cost limited to 4000 Sq. m per beneficiary
7	Plastic Mulching	Rs. 32,000/ha and Rs. 36,800/ha for hilly areas	50% of the total cost limited to 2 ha per beneficiary.

Terms & Conditions:-

- The selected beneficiary who have already availed maximum limit of subsidy is not eligible.
- pH of the irrigation water should be in the range of 5.5 to 7.0 and EC between 0.1 to 0.3 ms/cm.
- pH of the soil used as propagating material / media should be in the range of 5.5 to 6.5 and EC between 0.5 to 0.7 ms/cm respectively.
- The selected beneficiaries should be given training programme and exposure visit on concept of protected cultivation, package of practices of high-tech floriculture and high value vegetables.
- The estimated project details designed by the technical consultant as per technical standards of MIDH should be attached to the application.
- Soil and water analysis reports from reputed labs are also to be enclosed to the proposal.
- Protected Cultivation of vegetables should be promoted under MIDH in clusters around major cities/metros. These clusters may be provided with other infrastructural facilities like pre-cooling units, cold storages, refer vans, vending

carts etc. and marketing arrangements may be tied up by linking with cooperatives / private retail chain.

- Farmer/Firm is responsible for the erection of the Green House / Shadenet House / inset net house.
- Empanelled companies list will be communicated shortly.
- A display board depicting “Department of Horticulture” (Assisted Green House with logo of NHM).
- Subsidy will be released through online transfer to the beneficiary/Firm through the Hortnet, after joint inspection by the committee members.
- Assistance should not be availed from any Government department. An affidavit duly notarized Rs. 100 stamp paper (format enclosed) to be collected from the farmer along with the proposal.
- Green House flowers, vegetables, medicinal and aromatic plants, spices etc. should be considered for cultivation.
- The proposals for construction of Green House / Shadenet house may also be implemented in project mode with credit link back ended subsidy.
- Shade nets of 35 to 75 % shade should be used.
- Documentation with photo graphs to be done at various stages of erection of Green House / Shadenet House and submit to State MIDH cell along with joint inspection report duly indicating the Name of the beneficiary, Extent , Village and Mandal.
- The photograph should clearly depict the board, unit, farmer and also committee members of joint inspection team.

After the selection of the beneficiaries:-

- o Farmer registration should be done in Hortnet.
- o DMC approval has to be obtained and list of beneficiaries should be submitted to the state MIDH cell for approval of State Level Executive Committee.
- o Administrative sanction proceedings will be issued by the state MIDH cell after SLEC approval duly informing the conditions along with the design, specifications, date of completion etc.
- o After undergoing training the farmer should take the installation of Green House as per the technical specifications of MIDH.
- o The beneficiary/Firm has to complete the construction of Green House / Shadenet House within 60 days from date of issue of administrative sanction proceedings.

Inspection: there shall be two inspections.

I. First Inspection: First inspection shall be conducted by Joint Inspection Team (JIT) from DHQ (District Head Quarters), ADH&HO or Third Party Inspection nominated by the Department just after supply of material and completion of foundation work. This inspection will be conducted after call from farmer/firm in written to ADH of the District with assurance that the material supplied as per component list and the foundation work is complete as per departmental specifications and quantity as per design excluding cladding material. The farmer/firm will keep representative sample of all the components. The JIT may check any of the used material at site and firm has to facilitate it. In case of bankable cases Joint Inspection Team (JIT) along with Banker shall carry out the inspection.

II. Final Inspection: Final inspection shall be conducted by JIT or Third Party Inspection nominated by Head of the Department after intimation to ADH of the District after completion of structure in all respects. PD MIP/ DDH, ADH, HO, Firm representative (if empanelled firm), farmer & Banker (in case of Bankable) will remain present at the time of physical inspection to be carried out.

Constitution of Joint Inspection Committee for Green House & Planting Material under Protected Cultivation:-

ADH shall organize Joint inspection of the Green House / Shadenet House duly constituting a committee with the following members for approval of state cell:

1. PD, MIP / DDH
2. Assistant Director of Horticulture (concerned)
3. Horticulture Officer
4. MI Engineer, MIP.
5. Banker (in case of bankable project).

The joint inspection report should be sent in format with all necessary certifications. If any of the committee members has not attended the inspection, ADH shall give reasons for not attending the joint inspection.

After the completion of the erection of the Greenhouse:

- The beneficiary should submit the work completion certificate to the ADH.
- The beneficiary has to submit all the original bills for the expenditure incurred to the ADH for further processing.
- ADH to co-ordinate with the members of the joint inspection committee and should arrange inspection of the completed Green House.
- Later the committee shall inspect the unit and submit joint inspection report in the (format enclosed).
- Photograph of the unit along with farmer and committee members has to be enclosed to the joint inspection report.
- The joint inspection report in the prescribed format has to be submitted to State MIDH cell along with DMC approval for release of subsidy.
- ADH concerned should upload the field photos and bills in hortnet for release of subsidy.
- The subsidy has to be released to the beneficiaries/Firm through Hortnet (online transfer only.)

**WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED TO GREEN
HOUSE / SHADENET HOUSE**

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-I	Farmer
2	Soil & Water Analysis Water Report	
3	Affidavit – Format – II	
4	Pattadar Pass Book Copy	
5	Project Estimate	
6	Organization of training programme / Field Visit	HO / ADH
7	Application filling in Hortnet	Farmer / HO
8	District Mission Committee Approval	ADH
9	SLEC Approval	State MIDH cell
10	Issue of Administrative Sanction- Format – III	CoH
11	Erection of Green House (empanelled list will be communicated)	Farmer/Firm
12	1 st Joint Inspection after foundation	ADH&HO
13	Completion & Under Taking – Format – IV	Farmer & Fabricator
14	Submission of bills & invoices	Farmer / HO
15	Constitution of Joint Inspection Committee	ADH
16	Final Joint Inspection Report - Format - V	Committee Members
17	Sending of joint inspection report by obtaining DHM approval for sanction and release of assistance along with photo graphs to state MIDH cell for release.	ADH
18	Uploading the bills and field photos in Hortnet	ADH
19	Release of subsidy to the beneficiary through online transfer (Hortnet)	State MIDH cell

Section-3: Technical Standards of Naturally Ventilated Poly houses/ Green house (As per NHB)

(As per NHB)

Sl. No.	Item	General Specifications																																																				
1	Type	- Minimum top ventilation should be 10% of total Polyhouse /Greenhouse area and side ventilation depends on requirement of the climatic conditions. - Preferably saw tooth design or Even Span, Ridge & Furrow depending upon suitability for naturally ventilated poly-house/greenhouse.																																																				
2	Size	Area= As per the requirement. Length=Multiples of 8 Meter+ 4 Meter.Ex.8X2+4.(Length is side along the gable or side along the truss lines) Width=Multiples of 4 Meter.Ex.4X2 or 4X3.(Width is side along the gutter or side along the Purlin lines)																																																				
3	Grid	8MX 4M. 2 Meter corridors/balcony along all four sides. If the area is ≤ 250 Sq m then it is better to go for single span green house																																																				
4	Shape	To reduce the impact of wind and consequent damage to greenhouse structure; Green house will be aero dynamic along all four sides with curvature shaped balcony pipes of 48mm OD/2 mm thick G I pipes.																																																				
5	Structure	Hot Dip Galvanized Tubular structure. Galvanization of the structural members of BIS standards should not be less than 300 GSM (grams per square meter).																																																				
6	Stability of Structure	Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 Km/hr or 36 Meter per second. Note:-In case of high wind velocity zones, structures should withstand wind velocity up to 94 miles per/hr or 150Km/hr or 42 Meter per second.																																																				
7	Sizes of the structural members	Refer sequence as =<table><tr><th>Members Name</th><th>Outside Diameter (mm)</th><th>Thickness (mm)</th><th>Wt. per meter length (kg)</th></tr><tr><td>Columns</td><td>76</td><td>2</td><td>3.75</td></tr><tr><td>Top Purlins</td><td>48</td><td>2</td><td>2.30</td></tr><tr><td>Gutter Purlins</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Top Arches of the truss</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Bottom chord of the truss</td><td>60</td><td>2</td><td>2.85</td></tr><tr><td>Internal Bracings of the truss</td><td>33</td><td>2</td><td>1.60</td></tr><tr><td>Corridors/Balconies</td><td>60</td><td>2</td><td>2.85</td></tr><tr><td>Curtain Runner</td><td>42</td><td>2</td><td>2.10</td></tr><tr><td>Flap control pipe</td><td>21</td><td>2</td><td>1.08</td></tr><tr><td>Curtain shaft</td><td>27</td><td>2</td><td>1.30</td></tr><tr><td>Cross Bracing</td><td>33</td><td>2</td><td>1.60</td></tr><tr><td colspan="4">Not:-Welded pipes should not be used for structure erection except bottom pipe of 8m length.</td></tr></table>	Members Name	Outside Diameter (mm)	Thickness (mm)	Wt. per meter length (kg)	Columns	76	2	3.75	Top Purlins	48	2	2.30	Gutter Purlins	42	2	2.10	Top Arches of the truss	42	2	2.10	Bottom chord of the truss	60	2	2.85	Internal Bracings of the truss	33	2	1.60	Corridors/Balconies	60	2	2.85	Curtain Runner	42	2	2.10	Flap control pipe	21	2	1.08	Curtain shaft	27	2	1.30	Cross Bracing	33	2	1.60	Not:-Welded pipes should not be used for structure erection except bottom pipe of 8m length.			
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8	Fixtures to join Structural Members	Different type of fixtures are used to join structural members of polyhouses like brackets, cleats, clamps, nut & bolts, washers, self-tapping & drilling screw etc. The entire iron fixture should be																																																				

		galvanized and strong enough.
	a) Brackets and cleats	Made from the section like angle, channel, I beams and should be cold galvanized with minimum coat of 120 GSM
	b) Clamps	Different type of clamps like 76/60/48/42/33 mm OD full, 76/60/48/42/33 mm OB half are used which should be made from min. 42 mm wide and 2.1 mm thick GP coil having minimum 120 GSM Galvanization. Curtain clamp should be made from high carbon steel strips of min 30mm wide and 0.8mm thick. Such clamp should have proper spring action so that after fixing at the place they should not change the location.
	c) Nut, bolt and washers	From M12 to M6 Bolts, Nuts, washers should be used and they should be cold galvanized with min.120 GSM coat.
	d) Self tapping and drilling screw	These screw should be used to assure extra safety. They prevent dislocation of clamps from its place. Distance between tapping screw specially for fixing profile to gutter should be 30-40 cm.
9	Gutter	Gutter should be made of Galvanized sheet of 2 mm thickness in trapezoidal shape having 500 mm wide perimeter (Preferably of single length without joint) Coil having 120 GSM Galvanization. It should be leak proof. Min 1% slope required for the gutter. Assure uniform slope to gutter to avoid stagnant water in gutter to achieve maximum life of gutter. Gutter Orientation – North – South and may change according to wind direction.
	a) Gutter Height	Gutter height should be 4 to 4.5 meter from foundation formation level.
10	Ridge Height	Ridge height should be 6 to 6.5 meter from foundation formation level.
12	Arches Overlap	Minimum overlap of top arch over second (small) arch should be 600mm to avoid direct rain entrance into the greenhouse from the vent.
13	Foundations	Pit size should be min 450 mm dia. Depth 750 to 900mm or suitably altered depending upon Ground strata/level so as to ensure safety and stability of the structure even under extreme wind conditions. Columns are fitted over ground “insets” and bolted to insert pipe of 60 mm OD/2mm thick G/ pipe. Length of insert 1200 to 1300 mm & filling the pit with 1:2:4 concrete hand mixed with appropriate Grade cement. Before doing the line out for the foundation, ensure that slope of greenhouse ground along the gable should be 0% to 1% and along gutter min. 1% and max. 3%. If slope of ground exceeds this limit then ask grower to do the land development and maintain the slopes of the ground within the limits. Slope along the gable and gutter should be uniform. If developed ground has filling depth more than 200 mm then ask grower to do the flooding of water over the ground so that it should settle down. If the flooding is not done then there are chances of foundation piercing into the ground after application of structural load even foundation may dislocate.
14	Civil works	Cement concrete 1:2:4 blocks of size 30 cm X 30 cm X 80cm for embedding vertical pipe/poll in brick work for wall around poly house will be 23 cm thick, 0.5 meter high (0.3 m below GL and 0.2 m above GL) in cm 1:6 with 10 cm thick with PCC 1:4:8 in

		foundation of wall. Wall will be plastered in cm 1:4 on top and sides. 80cm to 1m wide and 10cm thick footpaths made of cement concrete ration of 1:2:4 should be provided.
15	Curtain opening	In general temperature inside the poly-house is more than ambient. To reduce the inside poly-house temperature increase, side ventilation, minimum 20% of floor area is necessary. Minimum 1.5 m clear side curtain opening is required. Side curtain should have min.200mm overlap to the bottom apron. This overlap is necessary to avoid direct entrance of rain into the green house and also to stop direct air entry in the nights.
16	Bottom Apron	To top the CO₂ inside the greenhouse, bottom apron is necessary. It should have min 0.6 m height from the ground and max 1.5 meter depending upon the crop and climatic conditions.
17	Doors	Double Door Entry, Doors Should Be Made Of Form FRP Sheets or polycarbonate sheets. Opening and closing is either hinged or sliding. Min width of door should be 1 M and min height 2 M. the door area should have 50 mm PCC flooring over 75 mm thick sub base.
18	Top Shading and side shading	Top shading can be done by using following material: a) Shading net: Shading net made from HDPE should be used. The selection of shade net depends upon the selection of crops grown and the light spectrum. It should not be more than 50% shade factor. It should be UV stabilized so that it should last long for min. three years. GSM should be minimum 100. Opening and closing arrangement either manual or auto should be provided to the shading net to increase its utility. b) Thermal screen/Aluminate: This is better option to create the shading. It reflects the light back and by the means controls the temperature also. This defuses the light also. This is made from HDPE with hot dip aluminium coating. Minimum GSM should be 100 and minimum aluminium coating should 25 micron. Opening and closing arrangement either manual or auto should be provided to the thermal screen to increase its utility. Side Shading: Shade net of 35% should be used to create side shading. This is useful to avoid direct entry of sunlight into the poly-house/green house when curtain is open. Minimum GSM should be 75. or Use of 40mesh UV stabilized insect proof net is also recommended to protect direct entry of insects into the poly-house/greenhouse. This should have minimum 100 GSM weigh. The shade factor (opening) in colour shade net depends on the spectrum of light through which light is passing through. So right kind of shade net is major challenge that depends on growers choice as well to take advice from the experts. The manually operated crank mechanism should be provided for expending and retracting the shade net.
19	Polythene	Technical Specifications of polythene should be as per Indian standard (IS 15827:2009) To select the proper film for poly house is very important and which have direct relation with quality of the crop as well quantity of the produce. Polythene should be properly UV stabilized and

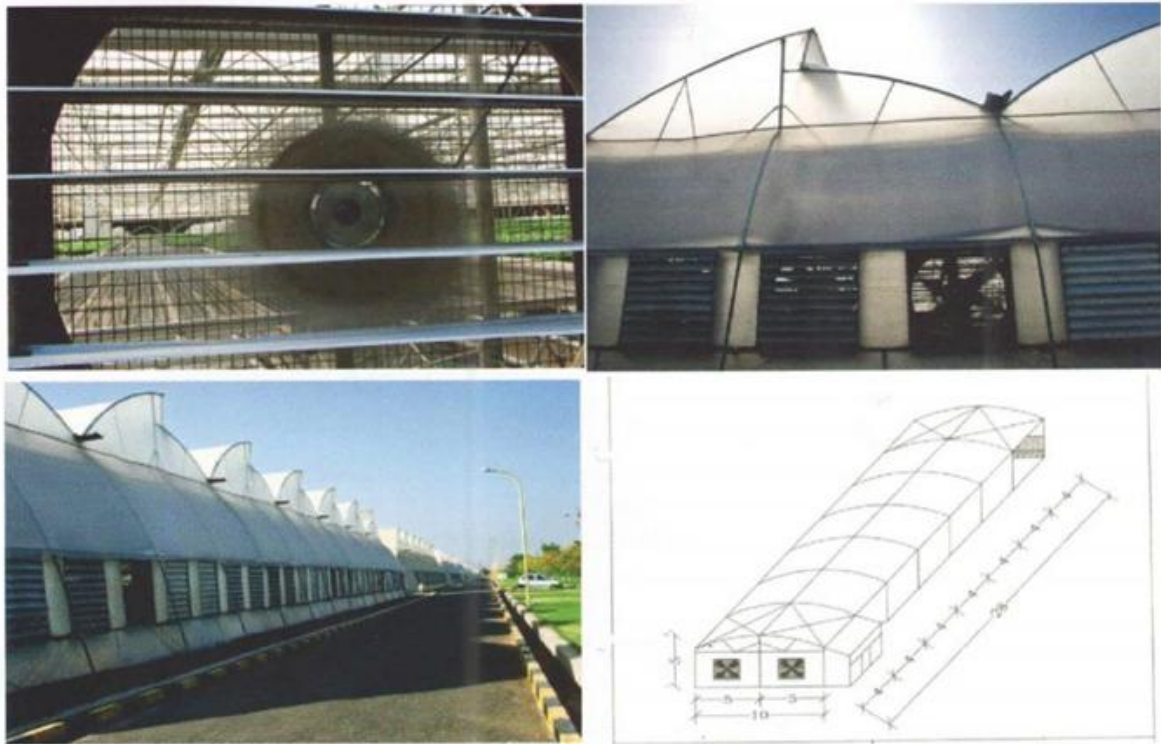
		prorated warranted for at least three years. Thickness of polythene should be minimum 200 micron (0.2mm). Polythene quantity accommodate maximum 5.4 sq. meter area in its 1 kilogram weight. (For example, 5.5mx100m polythene roll should have minimum weight of $5.5 \times 100 / 5.4 = 101.85 \text{ kg}$ or 4.5m x 100m one roll should have minimum weight of $4.5 \times 100 / 5.4 = 83.33 \text{ Kg.}$) Options in green house film: Compulsory properties: *UV stabilization *Diffusion/Clear (Light Transmission) Optional properties: *UV Blocking /Antivirus *Sulphur Resistant *Thermic *Anti Drip *Anti Mist *Anti Dust Manufacturing Process: Three layer/Five layer NHB also recommends (not mandatory) polythene with gas bubbles inside because in India high temperature is the problem in front of maximum growers. Our crop wise recommendation of minimum properties of polythene is: 1. Dutch Roses: 200 micron thick, UV stabilized, UV blocking (Not for bi color roses) anti dust, anti sulphur, with cooling effect, Light diffusion should be maximum (upto 75%) but is should not be less than 50%. 2. Gerbera, Coloured Capsicum, Anthurium and orchids: 200 Micron thick, UV stabilized, anti-dust, with cooling effect, light diffusion should be maximum (up to 75%) but is should not be less than 50%. 3. Carnation: 200 micron thick, UV stabilized, anti-dust, with cooling effect, where altitude is high polythene should be with IR protection.
20	Aluminum profile/poly fixing	C type profile made from Alloy Aluminum should have-high strength with light weight-(approx 220-250 gm/rmtrs) smooth edges, Curve bottom proper for 1.25" to 3" pipes, Proper channel for spring and suitable for double spring locking 0.9mm thick. Self-drilling screw should be fixed on profile every 40 cm along the full length of the profile.
21	Spring Insert	A plastic coated GI wire spring of 2.2 mm diameter, having good elasticity should be used for longer life that transferring less heat to the cladding materials as plastic films or shade net. If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. All spring must end inside the profile. Any spring outside profile must be either fixed inside or should be cut so that it does not damage the plastic in strong wind as it will initiate all the plastic being pulled out of profile.

22	Air circulation by “air circulating fans”:	In hot and humid climate, when ambient temperature and humidity are in higher side, it is very natural that both these factors have a tendency to increase further inside a green houses. Under such condition ‘air circulating fans’ inside the green house will do a good job to reduce the harmful effect of high humidity and temperature on plant. The increased air flow inside the plant canopy reduces the leaf temperature and disperses the high humidity around leaves, which maintain the transpiration pull of crop. This will work best when coupled with exhaust fans that will throw out the accumulated hot and humid air. In cool climate, during winter when the green house is heated, you need to maintain air circulation in such a way that temperature remains uniform throughout the green house. Without air mixing fans, the warm air rises to top and cool air settles around the plants on the floor. During rainy seasons. When humidity is high and high ambient temperature cools down due to rain, this air circulating fans may be used judiciously to disperse the higher humidity around plant canopy. Small fans with a cubic-foot-per-minute(ft³/min) air-moving capacity of one quarter of the air volume of green house are sufficient. Place the fans in diagonally opposite corners but out from ends and sides. The goal is to develop circular (oval) pattern of air movement. Operate fans continuously during required period of a day.
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General conditions:

1. Green house structural design should be sound enough to withstand wind speed of 130 km/hr.
2. The companies should be asked to get their structural design verified from the structural engineer because the proposed design is based on the functional requirements and field experience.
3. The firm should guarantee for free maintenance/damage to the structural material for ONE year.
4. The firm should be able to construct the entire green house within eight weeks of the issue of work order.

Section -4: Fan & Pad controlled poly-houses



Fan and pad

Selection of fan

The fans should deliver the required air at 15mm static pressure. The maximum center to center spacing between the two fans should be of 7.5m. The height of the fans is to be determined based on the plant height which is proposed to be grown in the green house. The fan blades and frame are to be made of non-corrosive materials like aluminum/stainless steel.

Design

The cross fluted cellulose pad is preferred. These are available mostly in 100mm thickness. One meter of pad height is given for every 20m of pad to fan distance. However, the fan to pad distance should not exceed 60m. The air flow rate should be of 75 cubic meter/minute/sq.m of pad. The water flow rate should be of 9 liters per minute/linear meter pad. The uniform distribution of water on pad is to be maintained.

Type 2:- Technical Standard of Fan and Pad cooling system Green House: With Fan Pad/Fogging system:

Sl.No	Item	Departmental Description			
01	Size:	According to requirement (As given in page no.13)			
02	Shape	Aero Dynamic along all four sides with curvature shaped hockey pipes of 48.0 mm OD GI Pipes with a view to reduce the impact of wind and consequent damage of Poly Houses Structure -Gutter Orientation – North South and may change according to wind direction -PAD should be in Wind direction and must have covered elevated balcony for shade			
03	Structure	Hot Dip Galvanized Tubular Structure of BIS standards. Galvanization of the structural members should not be less than 300 GSM(Grams per square meter)			
	Withstand to wind velocity	Structure should withstand to minimum wind velocity of 80.6 miles per/hr or 130 km/hr or 36 Meters per second. Note: In case of high wind velocity zones, structure should withstand wind velocity upto 94 miles per/hr or 150 kms/hr or 42 /Meter per second.			
	Size of the structural members	Members Name	Outside Diameter (mm)	Thickness (mm)	Wt. per meter length (kg)
		Columns	76	2	3.75
		Top Purline	46(Ridge)	2	2.30
		Gulter Purline	42/43 (Centre)	2	2.10
		Top Arches of the truss	42	2	2.10
		Bottom Chord of the truss Horizontal (G.I.Pipe)	60	2	2.85
		Top chords and	48/43	2	2.302.10

		trusses member				
		Internal Bracings of the truss –Pipe structural members to be fitted in plated nuts, bolts and washers without welding	33	2	1.60	
		Corridors / Balconies	60	2	2.85	
		Curtain Runner	42	2	2.10	
		Flap Control pipe	21	2	1	
		Curtain Salt	27	2	1.30	
		Cross Bracing	33	2	1.60	
		Not: Welded pipes should not be used for structure erection except bottom pipe of 8 m length.				
	Columns	76.00 2 mm thick				
	Purlin	48 mm OD/2.0 mm thick at ridge and 42/43 mm OD/2 mm thick for centre.				
	Trusses	Bottom horizontal 60 mm oD/2 mm thick GI Pipe top chords and truss members 48 mm OD/and 43 mm OD2.0 mm thick Bracing 32 mm OD/1.8 mm thick GI Pipe structural members to be fitted in plated nuts, bolts and washers without welding				
	Clamps and Nut Bolts	Well Compatible GI Clamps <120 GSM. 2mm thickness				
4	Grid Size	-8mx4m (Ideal size) -Size can be less depending upon space availability but not more 8mx4m grid size				
5	Balcony and Corridor	2 meter wide, vertical/curved pipe-60 mm OD/2 mm thick GI Pipe with 32 mm OD/1.8 mm thick horizontal GI pipe as supporting pipe as supporting pipe. Area covered by corridors should not be included while calculating the area under poly house				
6	Foundation	Pit size should be min.450 mm dia Depth 750 to 900 mm or suitably altered depending upon Ground strata / level so as to ensure safety and stability of the structure even under extremes wind conditions. Columns are fitted over ground “Inserts” and bolted to insert pipe of 60 mm OD/2 mm thick GI Pipe Length of insert 1200 to 1300 mm & filling the pit with 1:2:4 concrete hand mixed with appropriate Grade cement. Before doing the line out for the foundation ensure that slope of green houses ground along the gable should be 0% to 1% and				

		along gutter min 1% and max3%. If slope of ground exceeds this limit than ask grower to do the land development and maintain the slopes of the ground within the limits. Slope along the gable and gutter should be uniform. If developed ground has filling depth more than 200 mm then ask grower to do the flooding of water over the ground so that it should settle down. If the flooding is not done then there are chances of foundation piercing in to the ground after application of structural load even foundation may dislocate.
7	Gutter	Should be made of Galvanized sheet of 2 mm thickness in trapezoidal shape having 500 mm wide perimeter (Preferably of single length without joining Coil having 120 GSM Galvanization. It should be leak proof Min.1% slope required for the gutter. Assure uniform slope to gutter to avoid stagnant water in gutter to achieve maximum life of gutter. Gutter Orientation – North-South and may change according to wind direction.
	(a) Gutter Height	4m to 4.5 m
	(b) Gutter slope	1 to 1.5% to be provided in civil structural work
	Ridge Height/ Centre Height	Minimum 5 to 6.5 meter
8	Fasteners	Cold Galvanized well compatible M6 to M10 bolts & nuts 50 to 150mm long with plain washers as per requirement and with the best quality plating to have good anti-corrosiveness
9	Poly film	Technical specifications of polythene should be as per Indian Standard (IS 15827-2009) To select the proper film for poly-house is very important and which have direct relation with quality of the crop as well quantity of the produce polythene should be properly. UV stabilized at least there years. Thickness of polythene should be minimum 200 micron(0.2 mm) Option in green house film Compulsory properties • UV stabilization • Diffusion /Clear (light Transmission) • Optional Properties • UV Blocking /Antivirus • Sulphur Resistant • Thermic • Anti drip • Anti Mist • Anti Dust Manufacturing process

		Three layer/ Five layer Our crop wise recommendation of minimum properties of polythene is: 1. Dutch Roses: 200 micron thick, UV stabilized, UV Blocking (Not for bicolor roses) anti dust anti sulphur with cooling effect. Light diffusion should be maximum (upto 75 %) but it should not be less than 50% 2. Gerbers, coloured Capsicum. Anthurium and orchids: 200 micron thick UV Stabilized anti dust, with cooling effect. Light diffusion should be maximum (upto 75%) but it should not be less than 50% 3. Carnation 200 micron thick UV Stabilized anti dust with cooling effect where attitude is high polythene should be with IR protection.
10	Thermal Net	30 to 50% alluminate / thermal net as per requirement • Minimum 100GSM • Power operated crank mechanism should be provided for expanding and retracting the shade net
11	Poly fixing	C type profile made form Alloy Aluminum should have high strength with light weight – (approx 220-250gm/mtrs) smooth edges curve bottom proper for 1.25”to 3” pipes. Proper Channel for spring and suitable for double spring looking 0.9 mm thick. Self Drilling Screw should be fixed on profile every 40 cm along the full length of the profile.
12	Spring Insert	A plastic coated GI wire spring of 2.2 mm diameter, having good elasticity should be used for longer life that transferring less heat to the cladding materials as plastic films or shade net. If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. All spring must end inside the profile. Any spring outside profile must be either fixed inside or should be cut so that it does not damage the plastic in strong wind as it will initiate all the plastic being pulled out of profile.
13	Entrance	Double door entry Doors should be made of form FRP Sheets or polycarbonate sheets. Opening and closing is either hinged or sliding Min. width of door should be 1m and min height 2M. The door area should have 50 mm PCC Flooring over 75 mm thick sub base.
14	Civil Work	Wall on fan side will be 35 mm thick and 80 cm high and wall on pad side will be 23 cm on thick & 100 cm high from ground level in cm 1.6 with required foundation. All the walls will be plastered in cm 1.4 on top and sides.

		80 cm to 1m wide and 10 cm thick footpaths made of cement concrete ration of 1:2:4 should be provided as per the requirements.
15	Electrical fittings	Conduit and wiring as required for connecting light, fan, motor and pumping to main electrical supplies. Preferably use copper wire to withstand the load of the electrical appliances of Indian standards.
16	Climate Control System	
A	Fan-Pad System	-Numbers of Fan depends upon size of Fan-pad house and it should be capable of exhausting air volume in one minutes. - Exhaust Fans-50" however it depends upon size of fan-pad house with louvers. 1.5 HP-3 phase ISI standard electric motor. -Cellulose cooling pads of 1.8 meter height with 100 mm /150mm thickness covering the area properly. PVC water distribution system screen/disc filter valve and pumps etc. -Control panel with manual operation, temp and humidity sensors. -The necessary digital controller with sensory device & accessories of standard quality as per requirement should be provided to operate the fan & pad system for controlling temperature & humidity inside the Green house.
B	Fogging System	-In consist of four way anti leak fogger 28 iph flow rate (Working pressure should be mentioned at which we will be able to get required particle size fogger spacing along the lateral and lateral spacing) and particle size, 80-100 micron, 16mm lateral class-3 PVC pipe 6kg/cm ² , valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensor etc complete application rate 3mm/hr

Indicative Specifications of Protected Structures for 2014-15

A. Naturally Ventilated Polyhouse (NVPH)

1. Total Height of NVPH - 6 m to 7 m (Normally 6.5 m)
2. Height of Gutter – 4 m to 4.5 m (Normally 4.5 m)
3. Height of Top Vent- 1m (or 10% area of covered area whichever is higher)
4. Bay Size- 8 m x 4 m, 5 m x 5 m or 6 m x 4m
5. Corridors – Maximum 2 m all sides for area calculation.

FRAME COMPONENTS (GI PIPES)			
Sl.no.	Part Name	Specification	Description
1	Main Column	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	6 m to 7 m length
2	Small column along gable	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	4m to 5m length
3	Small Column along gutter	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	4 m to 5 m length
4	Foundation Stub	60 mm OD & 3.0 mm thick (@ 4.20 kg per meter)	1.2 m to 1.4 m
5	Corridor pipe along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	As per design requirement
6	Corridor pipe along gutter	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	As per design requirement
7	Small bottom chord along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	4 m
8	Big Bottom chord	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	8 m
9	End Purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
10	First top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	Top vent
11	Second top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	Top vent
12	4 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	Support to gutter
13	6 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	Last pipe towards slope
14	Curtain runner	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
15	Horizontal member	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
16	Long arc at end	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
17	Long arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
18	Short arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
19	Knee Bracing and	33 mm OD & 2.0 mm thick	

	Small Inclined strut	(@ 1.60 kg per meter)	
20	Big Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
21	Top chord runner in last bay	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	At both ends
22	Cross Bracing	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	At all top corners
23	Curtain pipe	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	Max length 40 m
24	Curtain pipe handle	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	
25	Flap control system	GI curtain pipe Guard 20/22 mm OD at all corridor pipes	At every 3m/4m

FIXTURES AND ACCESSORIES			
Sl.o.	Part Name	Specification	Description
1	Angle Bracket	ISA 40 X 40 X 3	
2	Full angle Cleat	ISA 40 X 40 X 3	
3	Half angle Cleat	ISA 40 X 40 X 3	
4	Flat Patti	25 MM X 5 MM	
5	76 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
6	76 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
7	60 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
8	60 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
9	43 ID Full Clamp	40 mm Width & 2 mm thick	Galvanized
10	43 ID Half Clamp	40 mm Width & 2 mm thick	Galvanized
11	T-Fixtures	33 mm OD & 2.0 mm thick	Galvanized
12	L-Fixtures	33 mm OD & 2.0 mm thick	Galvanized
13	Curtain Clamp	40 mm Width	Galvanized
14	Universal Joint	20 mm sq. bar	
15	Stud Cover	21 mm OD & 2.0 mm thick	Galvanized
16	Curtain Pipe Insert	21 mm OD & 2.0 mm thick	Galvanized
17	Self Trapping Screw	20 mm length	Galvanized
18	Bitumen Washer	3 mm thick	
19	Spring Insert	2.3 mm dia.	
20	Spring Insert (Platting)	2.3 mm dia.	
21	M 10 X 125	10 mm dia.	Galvanized
22	M 10 X 100	10 mm dia.	Galvanized
23	M 10 X 90	10 mm dia.	Galvanized
24	M 10 X 40	10 mm dia.	Galvanized
25	M 10 Nuts	10 mm dia.	Galvanized
26	M 10 washers	10 mm dia.	Galvanized
27	M 8 X 200	8 mm dia.	Galvanized
28	M 8 X 90	8 mm dia.	Galvanized
29	M 8 X 65	8 mm dia.	Galvanized
30	M 8 Nuts	8 mm dia.	Galvanized
31	M 8 Washers	8 mm dia.	Galvanized
32	M 6 X 75	6 mm dia.	Galvanized
33	M 6 X 20	6 mm dia.	Galvanized
34	M 6 Nuts	6 mm dia.	Galvanized
35	M 6 washers	6 mm dia.	Galvanized

36	GI Wire 3 mm trellis wire	3 mm dia.	
37	GI Wire 4 mm trellis supporting wire	4 mm dia.	
38	Pulley with clamp HDPE/MS	40 mm dia.	Galvanized
39	Rings stainless steel	20 mm dia.	
Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sr. No.	Description	Specification	
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Brick flooring with Plaster 15 mm thick	

PROFILE AND GUTTER			
Sl.o.	Part Name	Specification	Description
1	Profile	Aluminium profile	200 to 220 gr per running m 300 gr per running m
2	Gutter, 1-1.5% slope, max. gutter length 100 m.	Plastic drainage sheet (Single piece) supported by gutter purlins	Virgin, UV stabilized 1.4 mm thick and 600 mm wide
		GI drainage sheet 1.2 mm supported by gutter purlins (Single piece, if supported on arch)	500 mm wide
		GI drainage sheet 2 mm (if supported on column)	500 mm wide
3	Drainage water pipe	PVC 90/110 mm OD, 4 kg/sq centimetre pressure	
4	Zigzag spring insert	High carbon steel wire for repeated action, 2.3 mm dia	GI spring over 2 inch strip of new poly film over the main plastic in profile. (25% over lapping)

POLYTHENE		
Sr. No.	Description	Specification
1	Multi-layered Polythene from Agripolyane, Essen Multipack Ltd., Ginegar, Politive, PlasticaKritis, Soloplast	Fixed properties - 200 micron thick, UV stabilized, Thermic, diffused, Anti dust, Anti drip. Optional property - IR Reflective Cooling, Anti sulphur for the crops where sulphur consumption is high. For dutch- rose cultivation (As per farmer choice)

NETS		
Sr. No.	Part Name	Specification
1	40/50 mesh insect net to all four sides of below curtains for prevention of insect pests	UV Stabilized, 3.0 m width (height) (for vegetables & flowers) minimum 25 % of floor area. The company stitching below 2.0 to 3.2 m width are not allowed.
2	40/50/75 per cent shade nets to all four sides below curtains for prevention of insect pests.	UV Stabilized, 3.0 m width (height) (for flowers only) minimum 25 % of floor area
3	Shade Net (On top underneath polythene)	Non-motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or pulleys& nylon ropes. Shade Nets 40/50/75 per cent based on crop requirement of any color.
4	35% shade net/30 mesh insect net	UV stabilized to be fixed at top vent

Note 1:-For flower cultivation inside Polyhouse, Trellising system is optional. If not Installed, Rs.30 per sqm will be deducted.

Note 2:-For flower cultivation, inside Polyhouse, side ventilation can be of shade net with No trellising system, then, Rs. 50 per sqm will be deducted.

Note 3:-The width of insect nets rolls available is 3.6 meter or more. The stitching below 3.0 meter is not permitted. Above 3.0 m, if needed, the double stitching shall be done with machine using UV stabilized thread.

Note 4:-Foggers should be installed. If not installed, Rs.30 per sqm will be deducted.

Specific Requirements:

Sr. No.	Particulars	Specification
01	Gutter slope	The slope to the gutter side must be between 1.0 to 1.5%. If the gutter length is more than 40 m, then the slope should be preferable given to both sides to avoid damages/leakages.
02	Gable side slope	0 to 1.0 %
03	Foundations	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two holdfast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.
04	Bottom apron	UV stabilized woven polythene 160 GSM and a height of 1 m above ground and 50 cm buried below ground (Total width 1.5 m)
05	Side wall curtain	Insect net 40/50 mesh fixed and polythene movable fitted to curtain pipe with plastic/GI clamps and supported by GI guard 20/22 mm OD pipes 2.0 mm thick on corridor pipes
06	Orientation	The Polyhouse gutters should be preferably installed in North – South direction. All the vents should preferably face to East direction and the last vent of eastern direction to face to West direction.

Alternate Specifications with channel section

Sl. No.	Item	Indicative Specifications
I	Structure: Structure should withstand wind velocity as per Andhra Pradesh conditions, without weld.	
1	Columns	Channel/Rectangular Closed Pipe Structure: 80 mm x 50 mm/3.0 mm thickness (interior column)/10x50x80x50x10 mm (channel) and side columns of size 50 mm x 40 mm of 2.0 mm thickness (Exterior/sloping column)/10x40x60x40x10 mm (channel)
2	Purlin	Channel/Rectangular Closed Pipe Structure : 37 mm x 37 mm of 2.0 mm thickness/10x40x60x40x10 mm (channel)
3	Trusses	Channel/Rectangular Closed Pipe Structure: size 50 mm x 50 mm, bracing member 25 mm and 50 mm OD GI pipe, 2.0 mm thickness./10x50x70x50x10 mm (channel)

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouse/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm	Meter	36	42	60	110

	X 6 kg					
C	Filteration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

1. For any additional/optional item that is fitted/provided in structure by firm with the consent of farmer that shall not be part of cost norms*.
2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

General Conditions of Erection

1. 22 tons of material (steel) should be used for 1Acre area.
2. No pipes should be found welded. The bottom horizontal of 8 m length should be prepared by placing one feet section of lesser size. (inside & clamping it properly).
3. The apron plastic must be buried in the ground at least 50 cm from ground level.
4. The curtain pipe should be cut near the door in case door is placed at the centre of the side wall. The wall of poly house having more length, at centre of the wall a complete plastic without side curtain, insect net etc. should be fixed with separate profile and springs so that it can be removed as and when tractor operation is required in the poly-house.
5. Supplier should ensure checking of poly-house construction materials for specifications by department representatives after supply of materials at site.
6. If fixtures found rusted the structure will be considered incomplete.
7. Trellising system – Trellising wires of 2 mm gear wire or 3 mm dia high carbon steel to be used at 3 m height from ground level parallel to beds and number of wires will be 8 for 8 m span. The trellis support wires to the trellising wires should be of 4 mm or 3 mm gear wire rope and to be fitted at 4 m distance. The trellising wires should be connected to a Base wire connected to both ends to the periphery columns. The dia of such wires should be 8/10 mm. These wires should be fitted to anchor (hole pass bolt) buried in ground at each end. The dia of such anchor should be minimum 12

mm and it should be buried in ground at least 90 cm in ground with 1: 2:4 concrete. (A pit of 45 cm x 45 cm x 90 cm to be used for foundation and the anchor should be buried with holdfast.

8. In case of top poly-film fitted to the arches, if the length of top is more than 30 m, then the top plastic to be fitted to arch at every 24 m length by using profile and zig zag spring to avoid flapping of top plastic during winds.
9. Fixing of top poly-sheet should be fixed with profile and spring in the center of gutter length.
10. Self-drilling screw in profile should not be more than 30 cm apart
11. While installing the multilayer film, first insure that respective layers are facing the right direction as shown on film (e.g. inside out)
12. Provide a sample of one sqm size of poly-film, thermal net etc. having manufacturer's identification mark along with batch no.
13. Film should be tensioned tightly enough so that there should not be flapping during windy days.
14. The structural design should be sound enough to withstand wind velocity as per Andhra Pradesh conditions.
15. The companies shall get structural design verified from the structural engineer.
16. Regarding material used under MI component the firm will use BIS mark material. The system should run smoothly and there shall be no leakage.
17. Farmer will arrange the water source, electricity and booster pump at his own level to operate the MI system.
18. The overall structure should perform satisfactorily in all respects.

**SHADE / NET HOUSE
SPECIFICATION FOR SHADE HOUSE**

Sl.No	ITEM	SPECIFICATIONS
01	STRUCTURE	
	SIZE	According to requirement
	Shape	As per design
	Withstand to wind velocity	-Structure may be design to withstand wind velocity upto 104 Km/hr
		-120Km/Hour per hrs in high wind velocity zone
	Foundation	2 mm thickness GI Pipes compatible with columns, length 1.2m
	Main Column	Size 60.OD, Thickness 2 mm, Wt per length 2.85 kg, length - 4m
	Purlins	Purlin GI pipes-size 42/43 OD/thickness 2mm, Wt per length 2.00/2.10kg length -4m purlin members-33/32 mm OD/2 mm thickness, Wt. per length 1.60 kg
	Comer	Size 60 OD, Thickness 2 mm, Wt. per length 2.30 kg, length 0.15m
	Four Way Pipe Couplers	Size 48 OD, Thickness 2 mm, Wt. per length 2.30kg, length- 0.15m
	Five Way Pipe Couplers	Size 48 OD, Wt. per length 2.30 kg Thickness 2 mm, length- 0.15m
	Nut Bolts	Size 3/8"
	Grid Size	4x4, 8x4,4x6 (m)
	Gable length	4.0m,
	Centre Height	* Flat Structure -4m
		*Hut /dome type structure – Centre height -4m, side height - 2.5 m
2.	Aluminum Profile	C type Aluminum profile to fix shade net to the structure by means of self tapping screws. Weight of aluminum profile is 200-220 gm/ meter. Self Drilling Screw should be fixed on profile every 40 cm along the full length of the profile.
3.	Spring Insert	A coated spring I preferable compared to cold galvanized spring as a coated spring transfer less heat to the plastic and thus enhances the life of the plastic.

		If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. Wire material should be high carbon spring steel with spring action.
4.	Shade Net	UV stabilized, ranging from 30% to maximum 75% GSM shade depending upon the crop, made up of ISI/applicable national standard, white/green/ black/suitable colour.
5.	Door	Polycarbonate/polythene sheet door with 1m widths and 2m height and another door of 1m X2 m Box section frame is embedded inside for the strength.
6.	Anti-Room	Anti-room of size 4m X 3 m attached to net house.
7.	Civil work/foundation	Cement concrete 1:2:4 block of size 40cm X 40 cm X 90 cm for embedding vertical poll/pipe of shade net, subject to revision as per requirement of site.
8.	Overall slop	1 to 1.5%
	APRON	Use of APRON in shade net

B. Shade net House/Insect House (Dome shaped)

Sl. No.	Particulars	Description
1	Area in sqm	1000 to 4000 sqm
2	Length of structure	As per design
3	Width of the structure	As per design
4	Grid	4 m x 6 m
5	Straight Corridors	Maximum 2 m all sides for area calculation

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm
2	Net house column- centre	4 m	60 mm OD	2 mm
3	Top purlins	4 m and 6 m	43 mm OD	2 mm

4	Clamps and nut bolts	As per requirement		
5	Corridors	2.0 m	60 mm OD	2 mm
6	Horizontal members	1 to 1.5 m	42 or 33 mm OD	2 mm
7	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm
8	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm
9	Arches	As per requirement	42 mm OD	2 mm
10	Column- side	3m	60 mm OD	2 mm

Other parts of the structure:-

Sl. No.	Particulars	Description
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings. Shade Nets 40/50/75 % based on crop requirement of any color.
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action.
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20

		cm apart in concrete starting from 20 cm from base.
6	Top purlins	To be fixed on each column on top (4 m x 6 m)

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)		
Sl. No.	Description	Specification
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)
3	Door size	1.2 m x 2 m; Door of GI square pipe
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized
5	Half part of door (Downside)	Aluminium sheet
6	Upper half part of door	Poly carbonate sheet 5 mm thick
7	Flooring	Bricks flooring with plaster 15 mm thick

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouses/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2

8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm2	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm2	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110
C	Filtration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

1. For any additional/optional item that is fitted/provided in structure by firm with the consent of farmer that shall not be part of cost norms*.
2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

General conditions of Erection

1. No pipes should be welded as all length GI pipes are available in the market.
2. The net must be buried in the ground at least 50 cm from ground level.
3. The main column and small column must touch the concrete of the foundation and the foundation pipe should not be visible. In other words, the foundations should be leveled.
4. Supplier should ensure checking of net-house construction materials for specifications by department representatives after supply of materials at site.
5. Trellising system – Trellising wires of 2 mm gear wire or 3 mm dia high carbon steel to be used at 3 m height from ground level parallel to beds and No of wires will be 6 for 6 m span. The trellis support wires for support to trellising wires should be of 4 mm or 3 mm gear wire rope and to be fitted at 4 m distance. The trellising wires should be connected to a Base wire connected to both ends to the periphery columns. The dia of such wires should be 8/10 mm. These wires should be fitted to anchor buried in ground at each end. The dia of such anchor should be minimum 12 mm and it should be buried in ground at least 90 cm in ground with 1:2:4 concrete. A pit of 45 cm x 45 cm x 90 cm to be used for foundation and the anchor should be buried with hold fast.
6. If fixtures found rusted the structure will be considered incomplete.
7. Regarding material used under MI component the firm will use BIS mark material. The system should run smoothly and there shall be no leakage.
8. The overall structure should perform satisfactorily in all respects.

C. Shade net House/Insect Net House (Top

Flat)



Sl. No	Particulars	Description
1	Area in sqm	1000 to 4000 sqm
2	Length of structure	As per design
3	Width of the structure	As per design
4	Grid	6 m x 6 m
5	Straight Corridors	Maximum 2 m all sides for area calculation

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm
2	Net house column	4 m	60 mm OD	2 mm
3	Top purlins	4 m and 6 m	42/43 mm OD	2 mm
4	3/4/5 way	200 mm each side	43 mm OD	2 mm
5	Clamps and nut bolts	As per requirement		
6	Corridors	2.0 m	48 mm OD	2 mm
7	Horizontal members	1 to 1.5 m	42 mm OD	2 mm
8	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm
9	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm

Other parts of the structure:-

Sl. No.	Particulars	Description
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum/GI profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or Pulleys with nylon rope. Shade Nets 40/50/75 % based on crop requirement of any color.
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action. The net is to be fixed at every 4 m on top purlin.
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.
6	Top purlins	To be fixed on each column on top (6 m x 4 m)

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)		
Sl. No.	Description	Specification
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)
3	Door size	1m x 2 m : Door of GI square pipe
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized
5	Half part of door (Downside)	Aluminium sheet
6	Upper half part of door	Poly carbonate sheet 5 mm thick
7	Flooring	Bricks flooring with plaster 15 mm thick

MI Component

Indicative Quantity of Material of Drip/Fogging System in Polyhouses/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
A	Drip System					
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Sub main Flush Valve 40mm	Nos.	2	2	2	2
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
B	Fogging Machine					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110

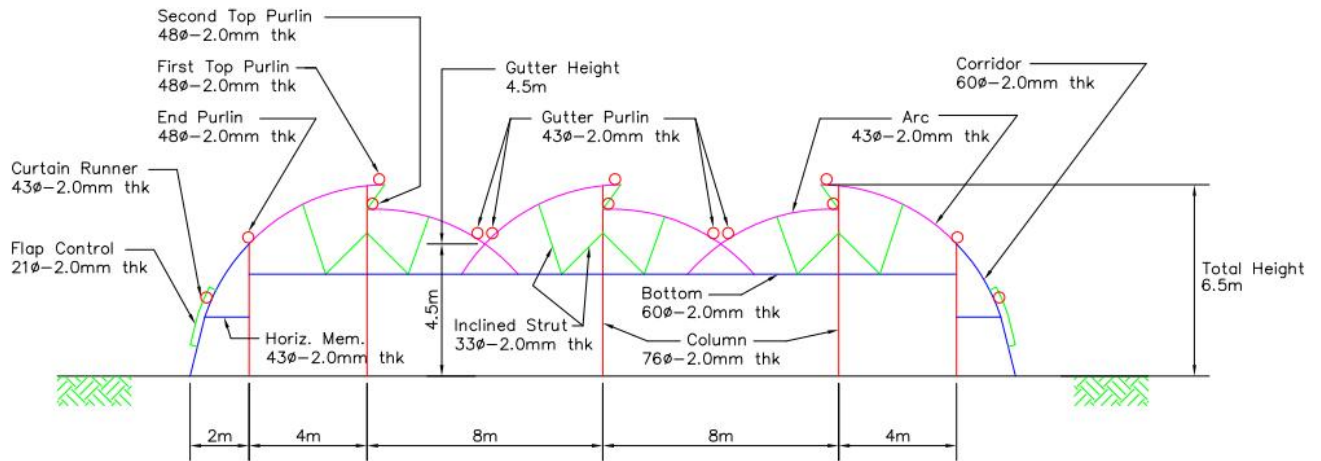
C	Filteration Unit	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

Note:

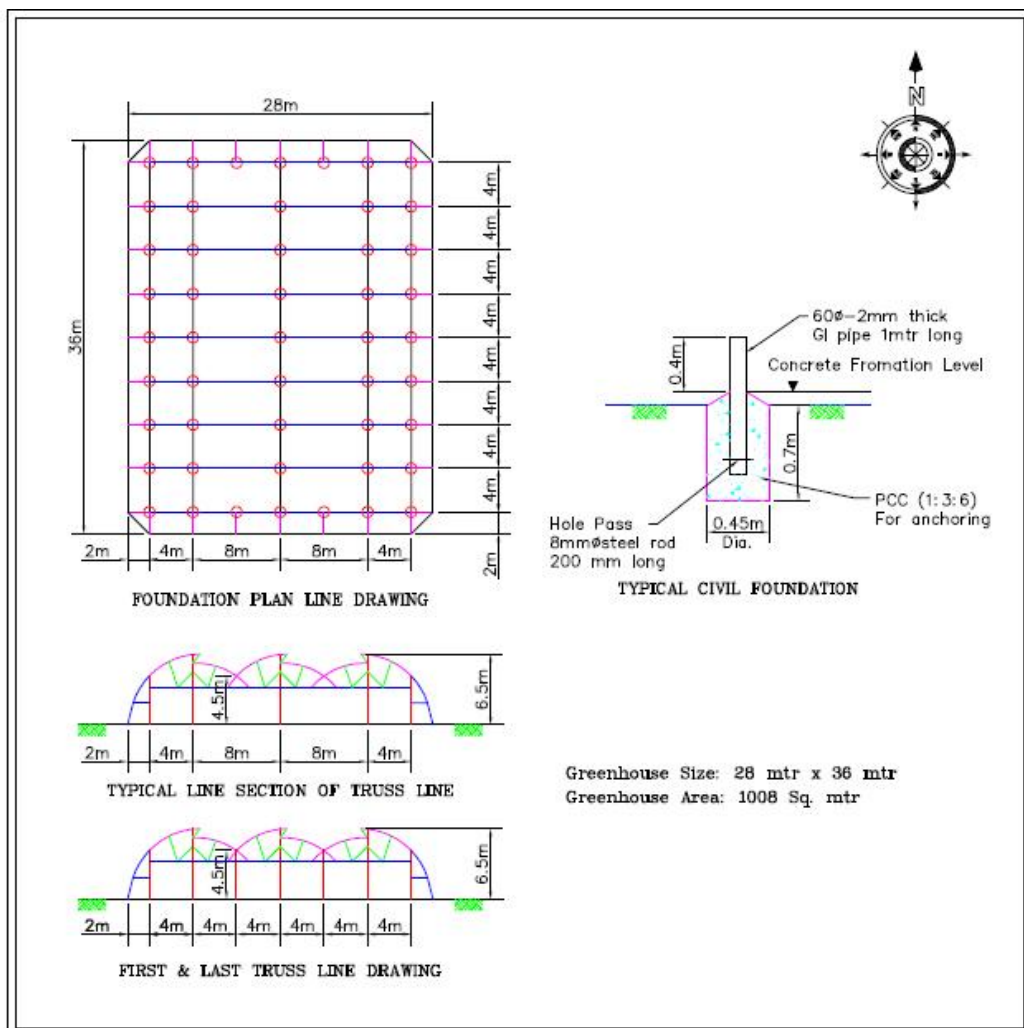
1. For any additional/optional item that is fitted/provided in structure by firm with the consent of farmer that shall not be part of cost norms*.
2. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.

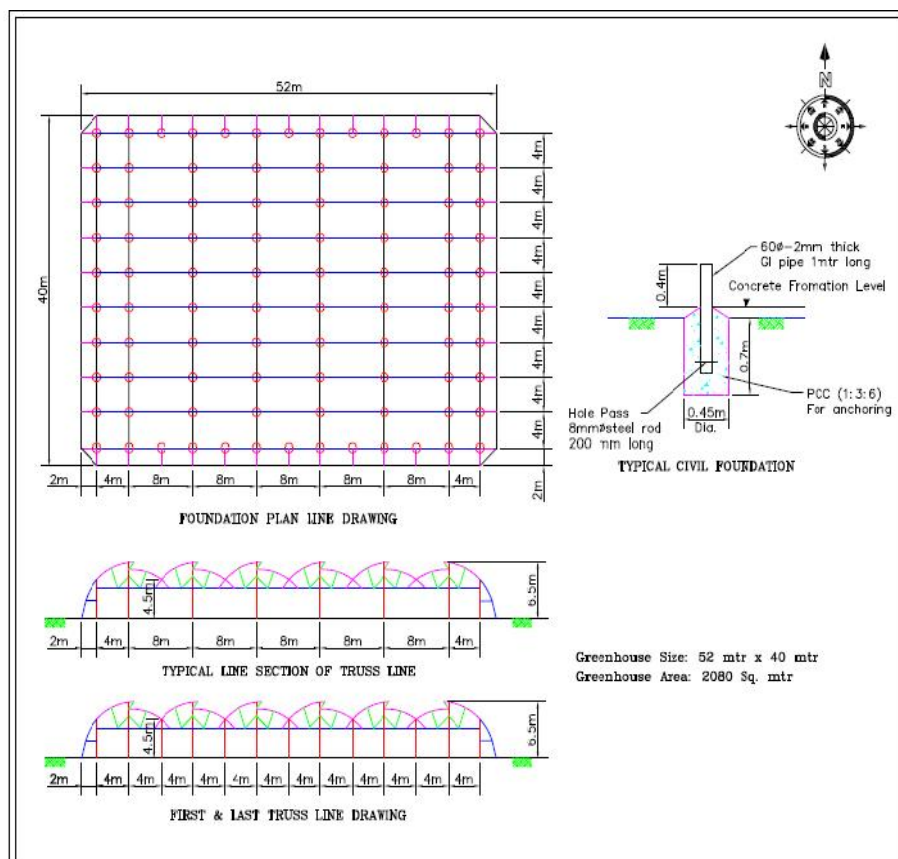
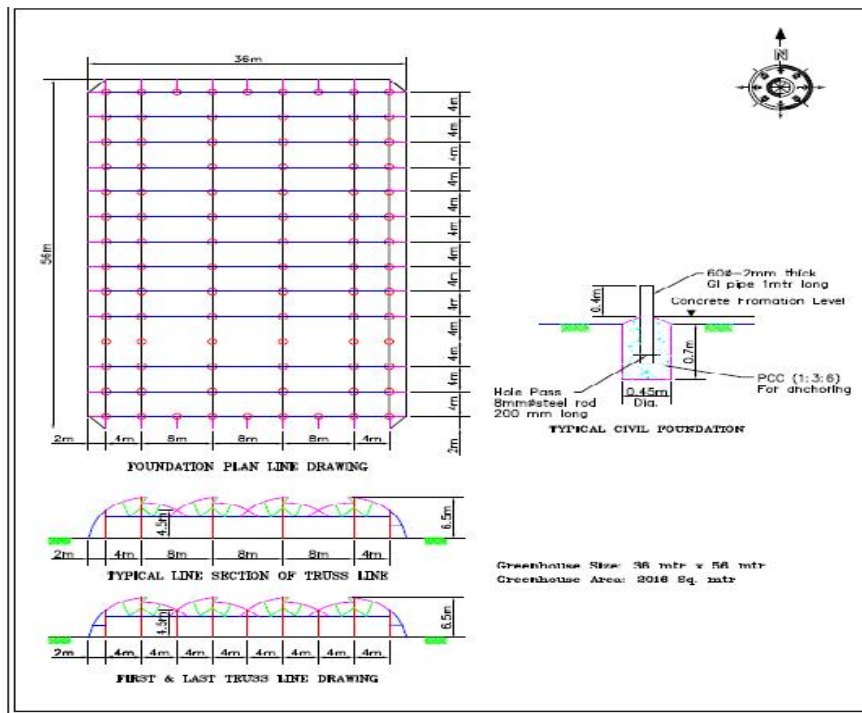
General conditions of Erection

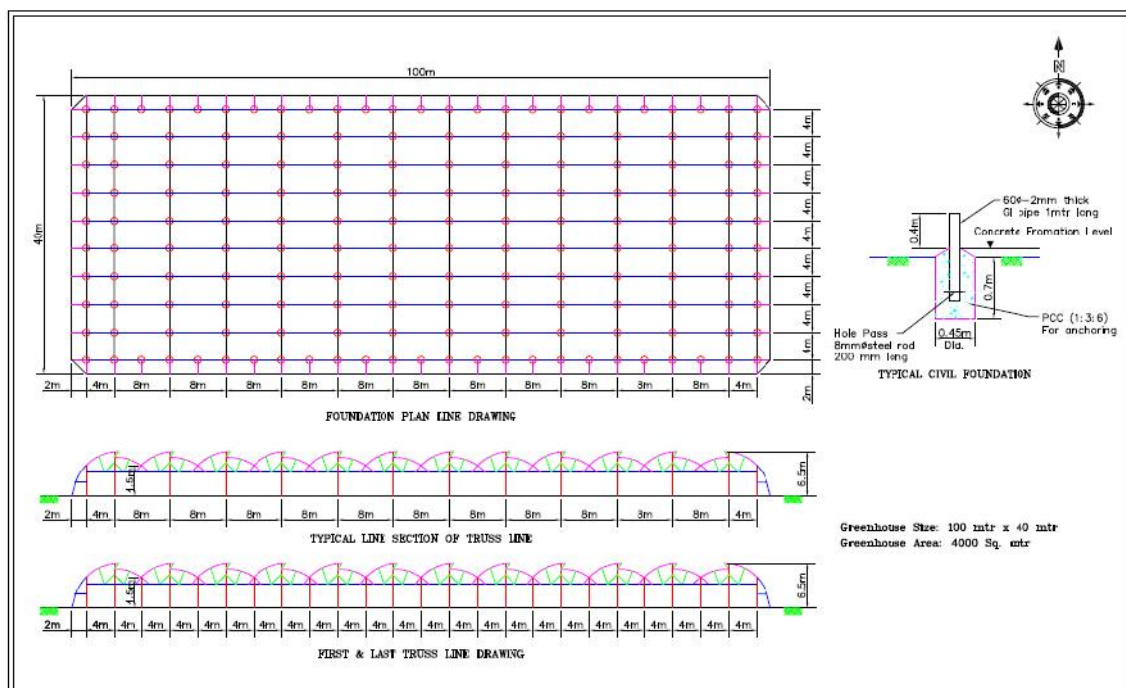
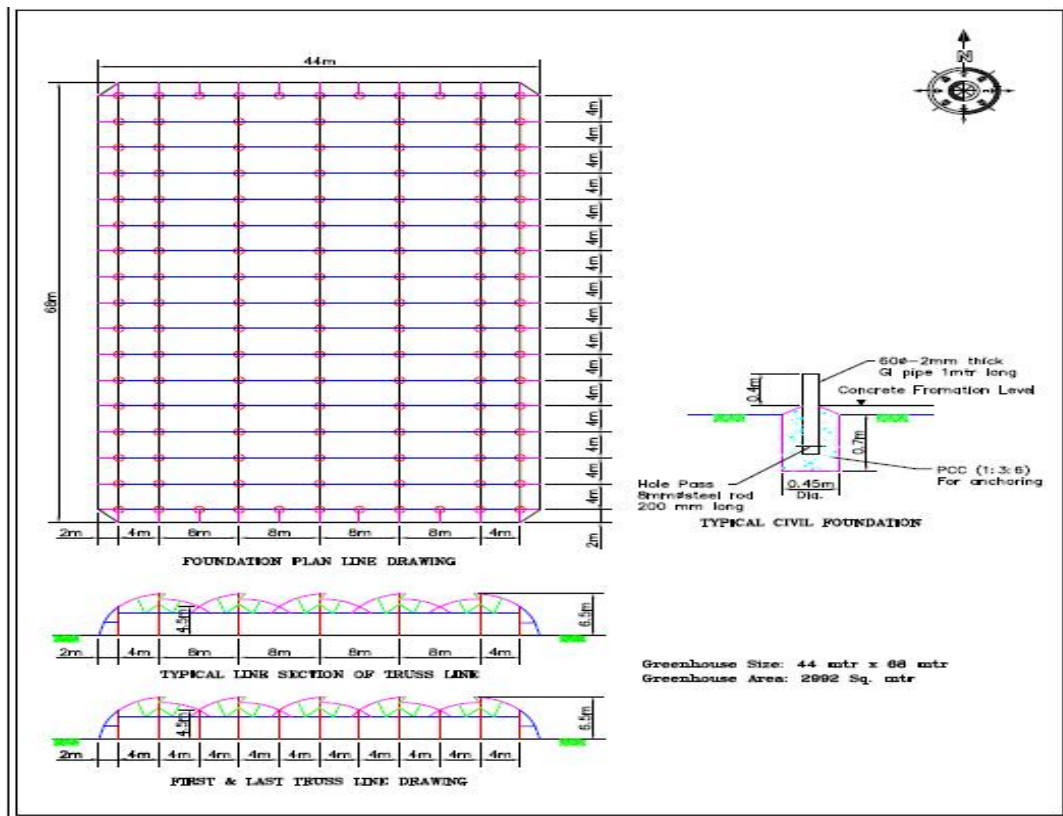
1. No pipes should be welded as all length GI pipes are available in the market.
2. The net must be buried in the ground at least 50 cm from ground level.
3. The main column and small column must touch the concrete of the foundation and the foundation pipe should not be visible. In other words, the foundations should be leveled.
4. Supplier should ensure checking of net-house construction materials for specifications by department representatives after supply of materials at site.
5. Trellising system - Trellising wires of 2 mm gear wire or 3 mm dia high carbon steel to be used at 3 m height from ground level parallel to beds and No of wires will be six for 6 m span. The trellis support wires for support to trellising wires should be of 4 mm or 3 mm gear wire rope and to be fitted at 4 m distance. The trellising wires should be connected to a Base wire connected to both ends to the periphery columns. The dia of such wires should be 8/10 mm. These wires should be fitted to anchor buried in ground at each end. The dia of such anchor should be minimum 12 mm and it should be buried in ground at least 90 cm in ground with 1:2:4 concrete. A pit of 45 44 cm x 45 cm x 90 cm to be used for foundation and the anchor should be buried with hold fast.
6. If fixtures found rusted the structure will be considered incomplete.
7. Regarding material used under MI component the firm will use BIS mark material. The system should run smoothly and there shall be no leakage.
8. The overall structure should perform satisfactorily in all respects.



TYPICAL LINE SECTION OF TRUSS LINE

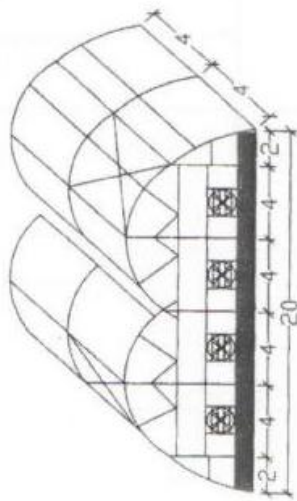




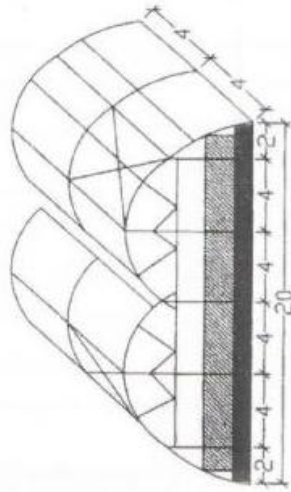


Section-6 : Design

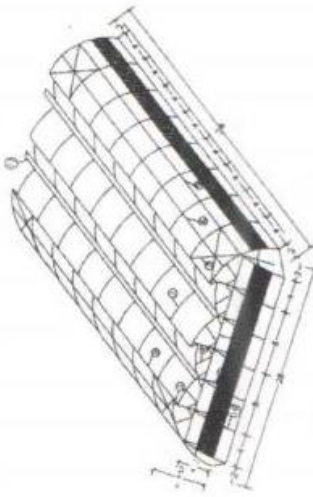
Fan Side Elevation



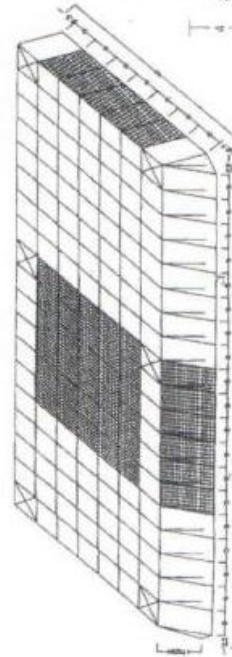
Pad Side Elevation



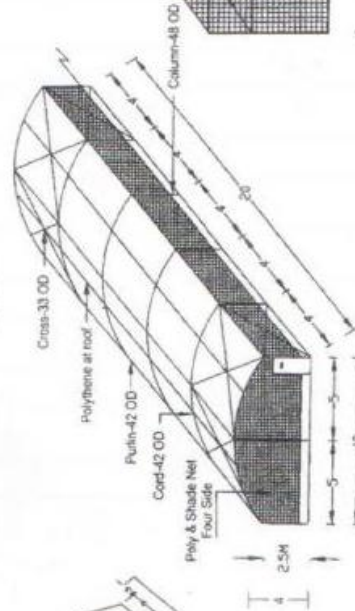
Naturally Ventilated



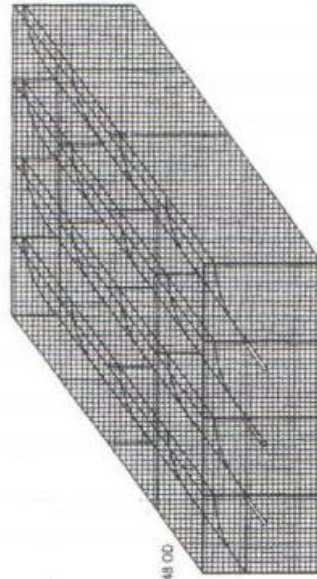
Shade House



Poly Tunnel Type



Shadow Hall



MULCHING

Mulching is a practice followed for conservation of moisture, to check weed growth and to improve the quality of Horticulture produce.

Thickness of Film:

In plastic mulching, the thickness of mulch film should be in accordance with type & age of crops. Economics suggest that the film thickness should be the minimum possible commensurate with desired life & strength. The recommended thickness of mulch films for different crops is as under:

Thickness (microns)	Crops Recommended
20-25	Annual - short duration crops
40-50	Biennial - medium duration crops
50-100	Perineal - long duration crops

Extent of Surface to be Covered under Film:

% Coverage	Crops Recommended
20-25	All creeper crops
40-50	Initial stage of orchard crops
40-60	Fruit crops & cucurbitaceous
70-80	Vegetables, Papaya, pineapple etc.
90-100	Soil Solarization

Mulching area should preferably be equivalent to the canopy of the plant (larger the canopy, larger the area of mulching and vice versa).

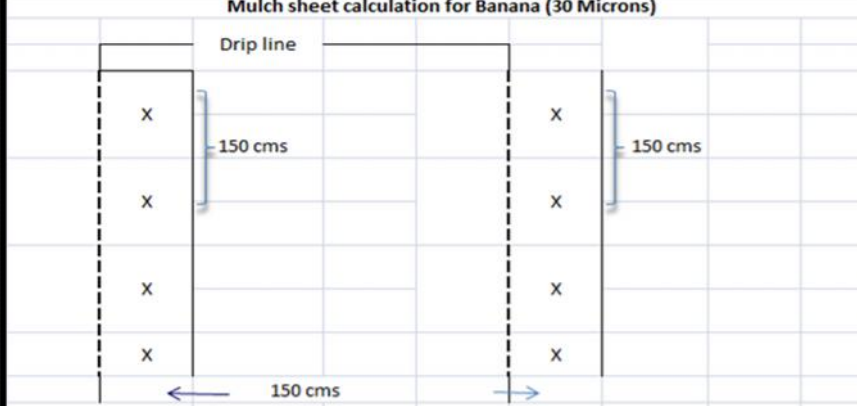
Calculation of Mulch Film Requirement (Approximately):

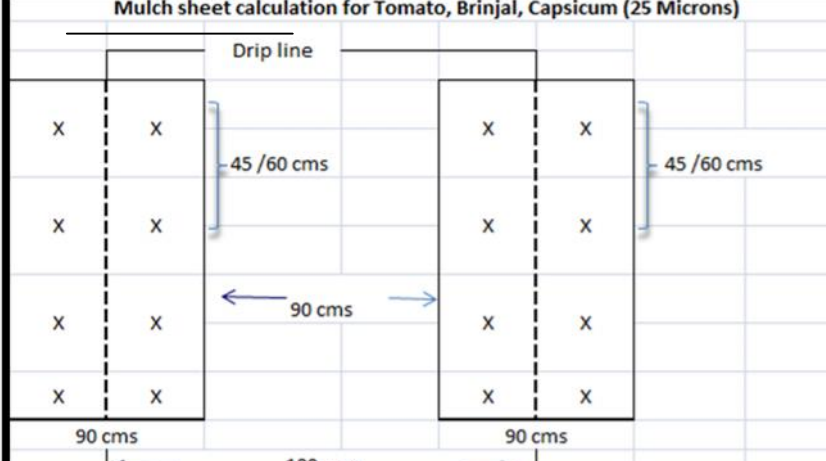
Thickness			Area coverage (m ² /kg)	Weight (Gram/m ²)
Micron	Gauge	mm		
7	28	0.007	144	6.9
20	80	0.02	54	18.4
25	100	0.25	42	23
40	160	0.04	26	38
50	200	0.05	21	46
100	400	0.10	11	93

Indicative Cost of Plastic Mulching:

On the basis of 80% coverage of area under the film, indicative cost of mulching for Horticulture crops would be approximately Rs. 32,000/- per ha.

Examples for calculation of requirement of Mulch Sheet :

Mulch sheet calculation for Banana (30 Microns)					
					
1 ac drip mlaterals =	$\frac{4000 \text{ sqmt}}{\text{Distance between laterals}}$	=	$\frac{4000}{1.5}$	=	2666 mt
1 ac mulch sheet =	mulch sheet width	X	Drip Lateral length	=	1.2X2666 = 3200 sq mt

Mulch sheet calculation for Tomato, Brinjal, Capsicum (25 Microns)					
					
1 ac drip mlaterals =	$\frac{4000 \text{ sqmt}}{\text{Distance between laterals}}$	=	$\frac{4000}{1.8}$	=	2222 mt
1 ac mulch sheet =	mulch sheet width	X	Drip Lateral length	=	1.2X2222 = 2666 sq mt

Terms & Conditions:

1. Farmers once availed subsidy is not eligible.
2. 50% cost limited with maximum limit is 2 ha / beneficiary.
3. The selected beneficiaries should be given training programme on concept of Mulching, benefits of mulching, selection of mulch sheet, quantity required and gauge of mulch sheet.
4. **Farmers will be given choice to procure the mulching sheet of their own choice by incurring full cost of mulching material. After verification of the vouchers and physical verification in the field, the assistance will be online transferred to the farmers account as per the eligibility and cost norms.**
5. A display board depicting "Department of Horticulture" (MIDH, Assisted Green House with logo of NHM).
6. Only Horticulture Crops are eligible for assistance.
7. DMC approval to be obtained for identified beneficiaries and for final release of assistance.
8. The scheme shall be implemented for promoting intensive cultivation of vegetables in a cluster mode by giving due priority to SF / MF and SC & ST.
9. Documentation with photo graphs after laying out of mulch.
10. Application registration in Hort net should be done by the concerned HO.
11. Uploading the bills and field photos in hortnet should be done by the HO/ADH for release of subsidy to the beneficiary through Hort net.

WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED FOR MULCHING

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-I	Farmer
2	Pattadar Pass Book Copy	
3	Application registration in Hortnet	
4	District Mission Committee Approval	ADH
5	Organization of Training Programme to identified beneficiaries	HO / ADH
6	Issue of Administrative Sanction	ADH
7	Laying out of Mulching	Farmer
8	Submission of bills and raising of invoice	Farmer / HO
9	Constitution of Joint Inspection Committee	ADH
10	Joint Inspection Report – Format –VI	Committee Members
11	Obtaining DMC approval for sanction and release of assistance	ADH
12	Sending of proposals to State MIDH Cell for release of Subsidy	ADH
13	Uploading the bills and field photos in Hortnet for release of subsidy	HO/ADH
13	Online transfer of assistance to beneficiary	State MIDH cell

Cost of Planting Material of High Value Vegetables & Flowers grown in Poly Houses

Cultivation of High value Vegetables & Flowers is cost intensive hence provision is made for meeting the cost of cultivation under Green Houses & Shadenet houses which includes cost of planting material and inputs.

Terms & Conditions:

- Assistance should be extended for High value flowers and vegetables under Green houses.
- Preference may be given to the farmers who have availed assistance for erection of Green House under MIDH.
- DMC approval has to be obtained for the identified beneficiaries.
- Subsidy will be released through online transfer after joint inspection by the committee members and also uploading the bills and field photos in Hort net.
- In case if the same farmer utilizes both the subsidies under Green House and Cost of Planting material, a display board depicting logo of NHM and “Department of Horticulture” & MIDH assisted Green House with planting material should be displayed. If the farmer has erected Green House without any assistance from MIDH then the board should depict logo of NHM and Department of Horticulture & MIDH assisted planting material.
- Documentation through photo graphs at the time of planting and at the time of harvesting.
- Photographs should clearly depict the unit, plant material grown, Display board, farmer and all members of joint inspection team.

Indicative cost for Cultivation of Flowers & Vegetables under Poly Houses :

Sl.No	Crops		Total Unit Cost (Rs. /Sq.mtr)	Pattern of Assistance (Rs./ Sq.mtr)
1	Vegetables	Capsicum	Rs. 140/-	50% of cost limited to 4000 sq.mtr per beneficiary
		Tomato	Rs. 140/-	
2	Flowers	Rose	Rs. 426/-	50% of cost limited to 500 sq.mtr per beneficiary
		Gerbera & Carnation	Rs. 610/-	50% of cost limited to 4000 sq.mtr per beneficiary
		Orchid & Anthurium	Rs. 700/-	

Component wise indicative cost of planting material and input of high value vegetables grown in poly houses : (500 sq.mtrs)

S. No.	Description	Amount	Unit Cost
1	Bed Preparation & Seed / Plant Material	20000	Rs.140/- Sq.Mt.
2	Trellies	8500	
3	Fertilizers	20000	
4	PP Chemicals	8500	
5	Mulching	6000	
6	Labour cost (Weeding, Pruning, Training)	7000	
		70000	

The HO / ADH should obtain required documents / bills for all the above components for release of assistance.

**Component wise indicative cost of planting material and input of flowers for
poly houses**

S. No.	Description	Rose for 3500 plants in 500 Sq.mts.	Gerbera for 3500 plants in 500 Sq.mts.	Carnation for 10000 plants in 500 Sq.mts.	Orchid & Anthurium for 4000 plants in 500 Sq.mts.	Unit Cost (Rs. /Sq.Mt) As per MIDH guidelines
1	Plant material	100000	110000	100000	155000	For Rose Rs.426/- Sq.mt.
2	Bed preparation	15000	15000	15000	15000	
3	Manures & Fertilizers	31500	50000	55000	50000	
4	Plant protection chemicals	31500	50000	55000	50000	For Gerbera & Carnation Rs.610/- Sq.Mt
5	Pruning Harvesting	20000	40000	40000	40000	
6	Intercultural operations	15000	40000	40000	40000	
	Total	213000	305000	305000	350000	for Orchid & Anthurium Rs. 700/- sq.mtr

The HO / ADH should obtain required documents / bills for all the above components for release of assistance.

**WORK FLOW & CHECK LIST FOR DOCUMENTS TO BE SUBMITTED FOR AVAILING
SUBSIDY FOR PLANTING MATERIAL**

Sl.No.	Description	Documents to be submitted by / Action to be taken
1	Application Form –Format-VII	Farmer HO/Farmer
2	Soil & Water Analysis Water Report.	
3	Pattadar Pass Book Copy	
4	Registration in hortnet	
5	District Mission Committee Approval	ADH
6	Issue of Administrative Sanction	ADH
7	Planting	Farmer
8	Submission of bills / invoices	Farmer / HO
9	Constitution of Joint Inspection Committee	ADH
10	Joint Inspection Report – Format -VIII	Committee Members
11	Sending of joint inspection report to State office for release of Subsidy	ADH
12	Obtaining DHM approval for sanction and release of assistance	ADH
13	Uploading the field photos and bills in hortnet	ADH
14	Online transfer of assistance to beneficiary	State MIDH Cell

FORMAT – I

Application for Availing Assistance / Subsidy Under MIDH
Through State Horticulture Mission

Recent
Passport Size
Photograph

Name of the Scheme: Protected Cultivation

Component: GREEN HOUSE / SHADENET HOUSE / MULCHING

1	Name of the Farmer	:	
2	Father / Husband Name	:	
3	Caste (SC/ST/BC/OC)	:	
4	Address	:	
	Phone / Cell No.	:	
5	Land records with Extent in Acres / Ha. (Copy of Pass Book / Adangal)	:	
6	Area Proposed in Sq.mtrs./Ha.	:	
7	Account No & Name of the Bank & Address	:	
8	Proposed crop	:	
9	Source of Irrigation (Open well / Bore well)	:	
10	Soil & Water Analysis Soil PH & EC Irrigation water PH & EC Soil & Water Analysis reports to be enclosed. (Not needed for Mulching)	:	
10	Estimated cost of the project Details of the project by the technical consultant to be enclosed.		
11	Whether any Govt. Subsidy availed previously	:	
12	Any other relevant information	:	

Declaration

I, _____

declare that the particulars furnished above are true to the best of my knowledge and I promise that the benefit obtained from State Horticulture Mission will be used for the purpose for which it is given and in case of misuse I am liable for any action deemed to be fit by Govt. of Telangana., including recovery of the subsidy amount with 12% interest to the Government.

Signature of the Farmer / Entrepreneur.

Recommendations of the

Horticulture Officers _____.

Enclosures:

Assistant Director of Horticulture

1. Pattadar Pass Book
2. Detailed Project Estimate
3. Soil & Water Analysis
4. Affidavit

FORMAT – II

AFFIDAVIT (Rs. 100/- Stamp Paper)

I / We _____ (Name of the Promoter / Director) son of _____
Father's Name) resident of _____ (residence address) do hereby
solemnly affirm and declare here under.

1) That I am the director of _____, (name of the beneficiary) having its
registered office at _____, (office address of beneficiary) and am fully
aware of the facts relating to the setting up the Green House at _____
(location of the Green House) for _____ (activities to be undertaken by
Green House) and the application made to MIDH for availing assistance under
Developmental Schemes _____

2) That the terms and conditions of the scheme of MIDH under which an application has
been made by the applicant have been properly read and understood by me and I affirm that
the Green House / proposal / scheme comply with the terms and condition of MIDH and the
application has been made in the correct applicable scheme.

3) That the proposed activities to be undertaken by the Green House / proposal / scheme are
covered under the above scheme of MIDH and no part of the scheme / infrastructure of the
Green House 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.

4) That the information provided in the application for availing assistance under
developmental schemes – _____ is true and correct to the best of my
knowledge and belief. The estimates of the cost of Green House / proposal / scheme,
financial viability and operating results have been worked out / computed as per the rule and
generally accepted principles and norms in this regard.

5) No Subsidy / grant – in – aid has been availed by the promoters / directors / partners /
proprietors for this new project and component thereof from central Govt. or any its agencies.

6) I / We also solemnly affirm that the proposed activity in the application for availing
assistance under development Schemes _____ is a completely new
activity and not a pre – existing activity or any Component thereof and further I assure that
the unit will be utilized for the same activity for which the assistance is sought from the MIDH
through State Horticulture Mission of Telangana for the economic period of 15 years. In case,

if the unit is misused I am liable for any action deemed to be fit by the Govt. of Telangana including recovery of the assistance amount extended. The information furnished in the application dated _____ is true to the best of my knowledge and belief and nothing material has been concealed.

7) In case of concealment of any facts in this regard, the MIDH would have right to cancel my application out right at any stage.

8) I will display a sign board depicting "Department of Horticulture" (MIDH, Assisted Green House) with logo of NHM.

9) The release of subsidy is subject to actual expenditure, receipts, inspection, MIDH norms etc., In case of any discrepancy / dispute the decision of the Mission Director & Director of Horticulture is final.

10) I agree and resolve that the department reserves the right to modify, add or delete any term/ condition without assigning any reason thereof and shall also have right to pre and post inspect / monitor the Green House and verify the related records at any time during the economic life of the Green House by the concerned officers.

DEPONENT VERIFICATION

Verified on solemn affirmation at _____ that the content of the above affidavit are true to the best of my knowledge and belief and nothing material has been concealed.

DEPONENT / COMPETENT AUTHORITY

(To be signed by Notary with seal)

Format – III

PROCEEDING OF THE DISTRICT COLLECTOR, _____ DISTRICT

Present :

Proce.No. State Cell-II/ G.H / _____ / 2014,

Dt. _____ 2014.

Sub:- Horticulture Dept- District – State Cell – 2014-15 – Construction of Green Houses under Protected Cultivation – Administrative Sanction Orders - Issued.

Ref: 1. Annual Action Plan 2014-15.

2. **Application of Sri..... S/o.,(V)**

....., (M)District received through H.O.,,

3. Note Approved by the District Collector,Dist. **Dt.,**

&&&

ORDERS:

Sri....., S/o.,(V),(M)

.....DISTRICT Sy.No....., has informed that , you have been selected as beneficiary for Construction of Green House under Protected Cultivation under State Horticulture Mission -2014-15 for the construction of Green House for,**Sqmt** and the eligible subsidy is 50% of the total Cost subject to a maximum Rs. 467/- Per Sqmt limited to 4000 Sqmts s for each beneficiary.

In view of the above, Administrative sanction is by accorded to him for Construction of Green House under Protected Cultivation under State Horticulture Mission -2014-15 for the construction of Green House for, **Sqmt** and the eligible subsidy is 50% of the total Cost subjective a maximum Rs.467/- Per Sqmt limited to 4000 Sqmts for the beneficiary duly following the conditions furnished here under to release subsidy by the Department of Horticulture.

The subsidy will be released subject to the following terms & conditions:-

1. The farmer should follow the Technical Specification for construction of Green House under Protected Cultivation issued by the MIDH as follows.
2. The farmer should display the board and place in front of the Green house. The Logo of **NHM** and the matter mentioned below.



**Financial Assistance by MIDH & Department of Horticulture
TELANGANA**

Name :	S/o :
Village :	Mandal :
District :	Component :
Area In Sqmt:	Assistance :

3. The farmer should obtain a certificate undertaking with the following matter from Green House fabricated firm "Certified that the material supplied and Constructed the Green house as per the guidelines and standard fixed by the MIDH and the area constructed in ----- Sqmts in the field of Sri/ Smt_____ S/o, W/o. _____ in _____ Village of _____ Mandal of _____ DISTRICT. "
4. The farmer should submit affidavit on Rs. 100/- Stamp Paper with notary about the Green House constructed by him (Copy enclosed).
5. The beneficiary should undergo 7 days training as per the Schedule given by the ADH.
6. Farmer is responsible for the installation of the Green House and for the payment to the fabricator.
7. After completion of work the subsidy will be released to the farmers based on the recommendation of ADH along with the Joint Inspection team certificate.
8. Subsidy will be released through online transfer to the beneficiary through the ADH, after joint inspection by the committee members.

(APPROVED BY THE DISTRICT COLLECTOR,DISTRICT)

Asst. Director of Horticulture

..... DISTRICT.

To

Sri..... S/o., (V),, (M)
..... DISTRICT

Copy to Horticulture Officer,..... DISTRICT

Format - IV

Dt:2014

To

The Asst. Director of Horticulture

..... District

COMPLETION & UNDERTAKING

This is to certify that as per the guidelines and technical standards of MIDH the construction of Green House was completed. The following materials were supplied for construction of Green House in an area of sq.mtrs in..... survey no..... of Sri....., S/o.....,(V),(M), District

S.No	Name of the Item	Quantity	Rate	Total Amount
1				
2				
3				
4				
5				
	Total			

Signature of Farmer:

Signature :

Name :

Seal :

Cell No. :

Format – V

**FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF GREEN HOUSE / SHADENET HOUSE BY THE
COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE
MISSION OF TELANGANA.**

Name of the Component : GREEN HOUSE / SHADENET HOUSE

Sl.No.	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Sq.mtrs .	Crop	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note : Separate Joint inspection report has to be furnished HO wise for Green House / Shadenet House.

Certificates:

- 1) This is to certify that the above farmers have installed Green House / Shadenet House as per the Technical standards of MIDH.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 9 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 10.
- 4) The subsidy amount of Rs. _____/- may be released

Promoter

Project Engineer

HO

ADH

PD, MIP / DDH

MIP

Format – VI

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF MULCHING BY THE COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE MISSION OF TELANGANA.										
Name of the Component : Mulching										
Sl.No.	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Ha.	Crop	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note : Separate Joint inspection report has to be furnished HO wise for Mulching.

Certificates:

- 1) This is to certify that the above farmers have installed Laid Mulch Sheet as per the norms of MIDH.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 9 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 10.
- 4) The subsidy amount of Rs. _____/- may be released

HO

ADH

FORMAT – VII

Application for Availing Assistance / Subsidy for Planting Material Flowers / Vegetables under Protected Cultivation Through State Horticulture Mission

Recent
Passport Size
Photograph

Name of the Scheme: Protected Cultivation

Sub- Component :Cost of Planting material and input for high value vegetable & flower

1	Name of the Farmer	:	
2	Father / Husband Name	:	
3	Caste (SC/ST/BC/OC)	:	
4	Address	:	
	Phone / Cell No.	:	
5	Land records with Extent in Acres / Ha. (Copy of Pass Book / Adangal)	:	
6	Area under Protected Cultivation in Sq.mtrs./Ha.	:	
7	Account No & Name of the Bank & Address		
8	Proposed crop and No. of Plants	:	
9	Source of procurement of planting material		
10	Source of Irrigation (Open well / Bore well)	:	
11	Soil & Water Analysis Soil PH & EC Irrigation water PH & EC Soil & Water Analysis reports to be enclosed.	:	
12	Whether any Govt. Subsidy availed previously		
	Any other relevant information	:	

Declaration

I, _____

declare that the particulars furnished above are true to the best of my knowledge and I promise that the benefit obtained from State Horticulture Mission will be used for the purpose for which it is given and in case of misuse I am liable for any action deemed to be fit by Govt. of Telangana including recovery of the subsidy amount with 12% interest to the Government.

Signature of the Farmer / Entrepreneur.

Recommendations of the

Horticulture Officers _____.

Enclosures:

Assistant Director of Horticulture

1. Pattadar Pass Book
2. Detailed Project Estimate
3. Soil & Water Analysis
4. Affidavit

Format – VIII

FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF COST OF PLANT MATERIAL AND INPUT OF FLOWERS & HIGH VALUE VEGETABLES BY THE COMMITTEE UNDER PROTECTED CULTIVATION COMPONENT OF MIDH THROUGH STATE HORTICULTURE MISSION OF TELANGANA.											
Name of the Component :											
Sl. No.	Name of the Farmer & Address	Category	Village	Mandal	Survey No.	Area in Sq.mtrs.	Crop	No. of Plants	Expenditure incurred by the farmer (Rs.)	Subsidy recommended by the committee (Rs.)	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Note : Separate Joint inspection report has to be furnished HO wise for Plant Material (Flowers) / Vegetables grown under Poly House / Shadenet House/
Certificates:

- 1) This is to certify that the above farmers have planted flowers / high value vegetables.
- 2) This is to certify that all the original purchase bills of the items for expenditure incurred as mentioned in column no. 10 have been verified and found correct.
- 3) This is to certify that the above farmers are eligible to avail subsidy of Rs. _____/- as mentioned in column no. 11.
- 4) The subsidy amount of Rs. _____/- may be released.

FARMER

HO

ADH

Check List For Naturally Ventilated For Poly-Houses

FRAME COMPONENTS (GI PIPES)			
Sl.no.	Part Name	Specification	Present or Not
1	Main Column	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
2	Small column along gable	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
3	Small Column along gutter	76 mm OD & 2 mm thick (@ 3.75 kg per meter)	
4	Foundation Stub	60 mm OD & 3.0 mm thick (@ 4.20 kg per meter)	
5	Corridor pipe along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
6	Corridor pipe along gutter	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
7	Small bottom chord along gable	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
8	Big Bottom chord	60 mm OD & 2.0 mm thick (@ 2.85 kg per meter)	
9	End Purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
10	First top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
11	Second top purlin	48 mm OD & 2.0 mm thick (@ 2.3 kg per meter)	
12	4 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
13	6 m gutter purlin	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
14	Curtain runner	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
15	Horizontal member	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
16	Long arc at end	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
17	Long arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
18	Short arc	43 mm OD & 2 mm thick (@ 2.10 kg per meter)	
19	Knee Bracing and Small Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
20	Big Inclined strut	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
21	Top chord runner in last bay	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
22	Cross Bracing	33 mm OD & 2.0 mm thick (@ 1.60 kg per meter)	
23	Curtain pipe	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	

24	Curtain pipe handle	20/22 mm OD & 2.0 mm thick (@ 1.30 kg per meter)	
25	Flap control system	GI curtain pipe Guard 20/22 mm OD at all corridor pipes	

FIXTURES AND ACCESSORIES			
Sl.o.	Part Name	Specification	Present or Not
1	Angle Bracket	ISA 40 X 40 X 3	
2	Full angle Cleat	ISA 40 X 40 X 3	
3	Half angle Cleat	ISA 40 X 40 X 3	
4	Flat Patti	25 MM X 5 MM	
5	76 ID Full Clamp	40 mm Width & 2 mm thick	
6	76 ID Half Clamp	40 mm Width & 2 mm thick	
7	60 ID Full Clamp	40 mm Width & 2 mm thick	
8	60 ID Half Clamp	40 mm Width & 2 mm thick	
9	43 ID Full Clamp	40 mm Width & 2 mm thick	
10	43 ID Half Clamp	40 mm Width & 2 mm thick	
11	T-Fixtures	33 mm OD & 2.0 mm thick	
12	L-Fixtures	33 mm OD & 2.0 mm thick	
13	Curtain Clamp	40 mm Width	
14	Universal Joint	20 mm sq. bar	
15	Stud Cover	21 mm OD & 2.0 mm thick	
16	Curtain Pipe Insert	21 mm OD & 2.0 mm thick	
17	Self Trapping Screw	20 mm length	
18	Bitumen Washer	3 mm thick	
19	Spring Insert	2.3 mm dia.	
20	Spring Insert (Platting)	2.3 mm dia.	
21	M 10 X 125	10 mm dia.	
22	M 10 X 100	10 mm dia.	
23	M 10 X 90	10 mm dia.	
24	M 10 X 40	10 mm dia.	
25	M 10 Nuts	10 mm dia.	
26	M 10 washers	10 mm dia.	
27	M 8 X 200	8 mm dia.	
28	M 8 X 90	8 mm dia.	
29	M 8 X 65	8 mm dia.	
30	M 8 Nuts	8 mm dia.	
31	M 8 Washers	8 mm dia.	
32	M 6 X 75	6 mm dia.	
33	M 6 X 20	6 mm dia.	
34	M 6 Nuts	6 mm dia.	
35	M 6 washers	6 mm dia.	
36	GI Wire 3 mm trellis wire	3 mm dia.	
37	GI Wire 4 mm trellis supporting wire	4 mm dia.	
38	Pulley with clamp	40 mm dia.	

	HDPE/MS		
39	Rings stainless steel	20 mm dia.	

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)

Sr. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Brick flooring with Plaster 15 mm thick	

PROFILE AND GUTTER			
Sl.o.	Part Name	Specification	Present or Not
1	Profile	Aluminium profile	
2	Gutter, 1-1.5% slope, max. gutter length 100 m.	Plastic drainage sheet (Single piece) supported by gutter purlins	
		GI drainage sheet 1.2 mm supported by gutter purlins (Single piece, if supported on arch)	
		GI drainage sheet 2 mm (if supported on column)	
3	Drainage water pipe	PVC 90/110 mm OD, 4 kg/sq centimetre pressure	
4	Zigzag spring insert	High carbon steel wire for repeated action, 2.3 mm dia	

POLYTHENE

Sr. No.	Description	Specification	Present or Not
1	Multi-layered Polythene from Agripolyane, Essen Multipack Ltd., Ginegar, Politive, PlasticaKritis, Soloplast	Fixed properties - 200 micron thick, UV stabilized, Thermic, diffused, Anti dust, Anti drip. Optional property - IR Reflective Cooling, Anti sulphur for the crops where sulphur consumption is high. For dutch- rose cultivation (As per farmer choice)	

NETS

Sr. No.	Part Name	Specification	Present or Not
1	40/50 mesh insect net to all four sides of below curtains for prevention of insect pests	UV Stabilized, 3.0 m width (height) (for vegetables & flowers) minimum 25 % of floor area. The company stitching below 2.0 to 3.2 m width are not allowed.	
2	40/50/75 per cent shade nets to all four sides below curtains for prevention of insect pests.	UV Stabilized, 3.0 m width (height) (for flowers only) minimum 25 % of floor area	
3	Shade Net (On top underneath polythene)	Non-motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or pulleys& nylon ropes. Shade Nets 40/50/75 per cent based on crop requirement of any color.	
4	35% shade net/30 mesh insect net	UV stabilized to be fixed at top vent	

CHECK LIST FOR MI COMPONENT

Sl. No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm2	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm2	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm2	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm2	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585	
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filteration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m3/hr	Nos.	0	0	0	1	
2	Disc filter 40 m3/hr	Nos.	1	1	0	0	
3	Sand filter 10 m3/hr	Nos.	1	1	0	0	
4	Sand filter 25m3/hr	Nos.	0	0	1	0	
5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

Check list for Shade net House/Insect House (Dome shaped)

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thickness in mm	Present or Not
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm	
2	Net house column-centre	4 m	60 mm OD	2 mm	
3	Top purlins	4 m and 6 m	43 mm OD	2 mm	
4	Clamps and nut bolts	As per requirement			
5	Corridors	2.0 m	60 mm OD	2 mm	
6	Horizontal members	1 to 1.5 m	42 or 33 mm OD	2 mm	
7	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm	
8	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm	
9	Arches	As per requirement	42 mm OD	2 mm	
10	Column- side	3m	60 mm OD	2 mm	

Other parts of the structure:-

Sl. No.	Particulars	Present or Not
1	Shade net OR Insect Net	
2	Shade Net (On top underneath top net)	
3	Aluminum Profiles	
4	Spring Insert	
5	Foundation work	
6	Top purlins	

Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sl. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	1.2 m x 2 m; Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Bricks flooring with plaster 15 mm thick	

Check list for MI Component of Shade Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with	Nos.	82	125	280	585	

	HP LPD						
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filtration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m3/hr	Nos.	0	0	0	1	
2	Disc filter 40 m3/hr	Nos.	1	1	0	0	
3	Sand filter 10 m3/hr	Nos.	1	1	0	0	
4	Sand filter 25m3/hr	Nos.	0	0	1	0	
5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

Check list for Shade net House/Insect Net House (Top Flat)

Structural parts (GI Pipes)-

Sl. No.	Name of the part	Length in m	Dia in mm	Thicknes s in mm	Present or Not
1	Foundation pipe	1m to 1.2 m	48 mm OD	3 mm	
2	Net house column	4 m	60 mm OD	2 mm	
3	Top purlins	4 m and 6 m	42/43 mm OD	2 mm	
4	3/4/5 way	200 mm each side	43 mm OD	2 mm	
5	Clamps and nut bolts	As per requirement			
6	Corridors	2.0 m	48 mm OD	2 mm	
7	Horizontal members	1 to 1.5 m	42 mm OD	2 mm	
8	Cross Bracings at top corners	As per requirement	42 mm OD	2 mm	
9	Knee bracing to connect horizontal and vertical member at the corner	0.5 m	33/42mm OD	2 mm	

Other parts of the structure:-

Sl. No.	Particulars	Description	Present or Not
1	Shade net OR Insect Net	50% at the top of the structure fitted in Aluminum/GI profile and springs. (Red, Green or white) UV stabilized, UV stabilized 40/50 mesh white colored insect net. 1m high woven fabric should be all over periphery (150GSM/200GSM)	
2	Shade Net (On top underneath top net)	Non- motorized for all sizes. Gear wire manual operation system with rotary handle having ball bearings or Pulleys with nylon rope. Shade Nets 40/50/75 % based on crop requirement of any color.	
3	Aluminum Profiles	Al profiles of 200 to 220 gr per running m	
4	Spring Insert	Zigzag spring (UV stabilized plastic coating) insert to fix shade net/insect net to Profile. 2.3 mm diameter of spring wire and cold galvanization is applied on the wire. Wire material is high carbon steel with spring action. The net is to be fixed at every 4 m on top purlin.	
5	Foundation work	Telescopic type. The column size to be 45 cm x 45 cm x 90 cm depth of CC 1:2:4 ratio properly compacted over 10 cm layer of 1:8:16. Two hold fast to be used in perpendicular direction at 20 cm apart in concrete starting from 20 cm from base.	
6	Top purlins	To be fixed on each column on top (6 m x 4 m)	
Entry Room (2 door of 2m x 2m Aluminium and poly carbonate mix)			
Sl. No.	Description	Specification	Present or Not
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m	
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)	
3	Door size	1m x 2 m : Door of GI square pipe	
4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized	
5	Half part of door (Downside)	Aluminium sheet	
6	Upper half part of door	Poly carbonate sheet 5 mm thick	
7	Flooring	Bricks flooring with plaster 15 mm thick	

Check list for MI Component of Poly houses/Net Houses

Sl.No	Description of Items	Unit	Size of Poly House(sqm)				Present or Not
			500	1008	2080	4000	
A	Drip System						
1	Main and Submain Line PVC 63 mm x 4 kg/cm ²	Meter	36	48	70	110	
2	Main Line PVC 75 mm x 4 kg/cm ²	Meter	0	0	0	60	
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200	
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000	
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2	
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1	
7	Sub main Flush Valve 40mm	Nos.	2	2	2	2	
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110	
B	Fogging Machine						
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm ²	Meter	36	42	70	110	
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm ²	Meter	0	0	210	60	
3	16mm LLDPE Lateral line	Meter	250	450	900	1900	
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585	
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0	
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1	
7	Submain Flush Valve 40mm	Nos.	2	2	2	2	
8	GI Wire 2mm thick	Meter	200	350	800	1400	
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110	
C	Filteration Unit	Nos.	1	1	1	0	
1	Disc filter 25 m ³ /hr	Nos.	0	0	0	1	
2	Disc filter 40 m ³ /hr	Nos.	1	1	0	0	
3	Sand filter 10 m ³ /hr	Nos.	1	1	0	0	
4	Sand filter 25m ³ /hr	Nos.	0	0	1	0	

5	Sand filter 40 m3/hr	Nos.	0	0	0	1	
6	Manifold GI + GMV	Nos.	1	1	1	1	
7	Ventury Assembly Complete	Nos.	1	1	1	1	
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1	

EXECUTION GUIDELINES FOR IMPLEMENTATION OF FARMPONDS **FOR THE YEAR 2014-15**

1. INTRODUCTION:

To fulfill the demand of irrigation potential in agriculture as supplementary irrigation water management play an important role, because rainfall in drought prone areas is highly erratic, storage must be an integral part of any rainwater harvesting system. It is therefore necessary to harvest water from any water sources e.g. precipitation, perennial sources, roof water etc. in ponds and reservoirs for various domestic, agricultural and industrial purposes over a period of time- to stretch its usage to the maximum.

Farm ponds are manmade tanks constructed for holding water which could be used during scarce season to ensure lifesaving irrigation for the uninterrupted physiological activities of the crops. Farm ponds are constructed by excavating the soil, by depositing the soil on the bunds and by laying a Geo-membrane HDPE sheet in the excavated tank for preventing the infiltration and seepage.

The major portion of stored water in earthen tanks has been lost due to seepage. To avoid this depletion of stored water, pond sealing/ mechanically treating the ponds are necessary by installing lining of impervious material as Plastic film lining along or in combination with conventional lining has proved to be an effective seepage proof in ponds and reservoirs but most effective and cost economic also. Plastics film is the flexible membrane, which is a hydraulic barrier consisting of a functionally continuous sheet of synthetic or partially synthetic or flexible material.

The Government of India has provided subsidy under National Horticulture Mission (NHM) – a centrally sponsored scheme on the construction of Plastics lined water harvesting tanks in all states to mitigate the scarcity of water for supplemental irrigation as well as diversified use of stores water during off-season. Under NHM, subsidy is available for two sizes – community tanks (where a number of farmers come together) with a size of 100m x 100m x 3m for the purpose of supplemental irrigation up

to 10 ha of land and small farm tanks on individual basis with a size of 20m x 20m x 3m to irrigate up to 2 ha land.

2. BENEFITS OF POND LINING WITH PLASTICS FILMS:

- Reduction in seepage losses to the maximum extent (95%)
- Harvesting and storing of rain water from early monsoons.
- Utilization of harvested rain-water for short during crops as well as during off season.
- Lining of ponds and reservoirs with plastics film improve water availability over a longer period of time.
- It is highly useful in porous soils where water retention in ponds and water harvesting tanks is minimal.
- Economical and effective method of storing water.
- Eliminates water logging and prevents upward intrusion of salts into stored water.
- Prevents soil erosion.
- Technique is also suitable for lining of effluent ponds and channels to reduce soil and ground water contamination.
- It can also be used in the lining of saltpans for improving productivity as well as quality of salt.
- The water from bore wells, canals during the rainy (peak) season can be stored in these ponds and which can be used during lean season.

3. IMPLEMENTING DISTRICTS: The component is being implemented in all 9 Telangana districts.

Districts namely

- 1) Mahabubnagar
- 2) Nalgonda
- 3) Medak
- 4) Ranga Reddy
- 5) Warangal
- 6) Nizamabad
- 7) Karimnagar
- 8) Adilabad
- 9) Khammam

4. FINANCIAL ASSISTANCE:

1. Water harvesting system for individuals- for storage of water in 20mx20mx3m ponds /tube wells/dug wells@125/- cum
2. 50% assistance on total cost including 500 microns **Plastic lining / Rcc lining** will be provided.

5. IDENTIFICATION OF FARMERS:

- The beneficiary should belongs to Telangana state only.
- Sensitization and Motivation of farmers by HOs/ ADH to understand the concept and need for farm pond to save the crops indeed shortage of water.
- Beneficiaries to be identified in Grama sabhas
- Identified list to be displayed in HRCs/ Grama panchayat
- Preference shall be given to small & marginal farmers
- SC, ST ratio shall be scrupulously followed.
- Beneficiaries having drip irrigation must be selected with orchards/crops
- Online registration of farmer in HORTNET is compulsory.

6. INSPECTION FOR FEASIBILITY :

- The concerned Horticulture Officer along with MI Engineer inspect the farmer site and ascertain the feasibility for construction of farm pond.
- If it is feasible for construction of farm pond Horticulture officer will forward the list of farmers to the ADHs.

7. ADMINISTRATIVE SANCTION:

1. ADH will submit the list of farmers to the District collector for issue of Administrative sanctions with his/her recommendation for construction of farm ponds.
2. DMC accords administrative approval within the financial allocation
3. ADH will issue administrative sanction to the farmer.
4. Copy of the DMC approval should be sent to the ED, SHM.

8. TRAINING PROGRAMMES :

- ADH will provide training to the farmers to enable them to excavation and other works mentioned in the estimate in coordination with Project Director, TSMIP and MI Engineer.

9. LAY OUT PLANNING:

- The MI Engineer of the district will give the lay out plan to the farmer.

10. SUBMISSION OF AFFIDAVIT BY FARMER :

- The farmer has to submit an affidavit on Rs. 100/- bond paper to the ADHs before excavation of farm pond.

11. EXECUTION OF FARM PONDS:

- The Horticulture Officer should monitor the Execution of Farm Ponds to complete within the prescribed time line as per specifications
- **If the farmer desires to take up lining with concrete,, he is permitted to do so, but the subsidy amount is restricted up to Rs. 75000/- only as per the MIDH guidelines.**
- The farmer has to complete the excavation of farm ponds within 25 days after receipt of administrative sanction from the ADH.

- The farmer himself will procure the plastic lining (Geo membrane) as per the technical specifications duly following the procedures as and when communicated by the CoH.
- Beneficiary will execute the work fencing to the pond (excavation of pit and erection of poles) excavation of top trench and for fixing HDPE sheet.
- The farmer has to complete the fixing of sheet lying within 40 days after completion of excavation and consolidation.
- The maintenance will be ensured by the beneficiary only.
- Beneficiary should fix the Sand filter on platform duly connecting the existing drip line.
- Chain linked mesh for fencing preferred rather than barbed wire fencing.
- Farmers has to produce witness signatures of neighboring farmers at least 3 members along with name, mobile no. and permanent address after completion of farm pond.

12.DISPLAY BOARD:

A display board (Iron) of Size 2x2 ft depicting the details in Telugu version only.

Department of Horticulture State Horticulture Mission

Name of the farmer:

Crop name and extent:

Size of the farm pond:

Capacity of the farm pond:

Total expenditure:

Subsidy amount:

Non subsidy amount :

Year of sanction:

The estimated unit cost and subsidy pattern of Farm Ponds for excavation, laying Geo-membrane sheet and Fencing.

Sl. No.	Type	Size of the Farm Pond	Capacity	To irrigate	Total cost (Rs in Lakhs)	Subsidy in (Rs in Lakhs) (50% on total cost)
1	Individual farm pond	20x20x3m	20 lakh litres	2ha	1.50	0.75

13. MODE OF DISBURSEMENT:

- Horticulture officer will monitor the progress of Execution of the farm pond
- MI Engineer will take the MB record and Check measurement will be done by Horticulture Officer.
- Super check by Asst. Director of Horticulture (10% of Target randomly)
- After completion of execution of farm pond MI Engineer and concerned Horticulture Officer will issue the completion certificate along with photograph for record purpose at district level to the ADH.

- ADH will inspect the farm pond and inspection report will be sent to the SHM office by recommending the release of subsidy to the beneficiary.
- SHM cell, will release the funds to the beneficiary account through on line after report received from the ADH with his/her recommendation for release of subsidy.

14. TIME LINE FOR IMPLEMENTATION OF FARM PONDS FOR THE YEAR 2014-15.

Description	To be completed by	Responsible officer
Identification of beneficiary	By end of October, 2014	FC/HO/ ADH
Technical feasibility	By 20 th November, 2014	HO& MI Engineer
Issue of administrative sanction duly obtaining DHM approval	By 25 th November, 2014	ADH
Organizing Training programme	By 05 th December, 2014	HO/ ADH
Excavation of Farm pond	Within 25 days after receipt of administrative sanction from the ADH	FARMER
Lining with geo membrane sheet	Within 20 days after excavation and consolidation of farm pond	FARMER
Fencing, display board, erection of sand filter and connection to drip system.	Within 10 days after sheet laying	FARMER

15. MONITORING AND IMPACT EVALUATION:

1. District Inspection Team: (100 % verification) :

Members: a. PD, APMIP/DDH

b. Assistant Director of Horticulture concerned

c. Horticulture concerned

d. MI Engineer

Functions:

a. Assess the quality parameters in execution of Farm Pond

b. If any defects are noticed by the DIT the same are to be rectified by the beneficiary.

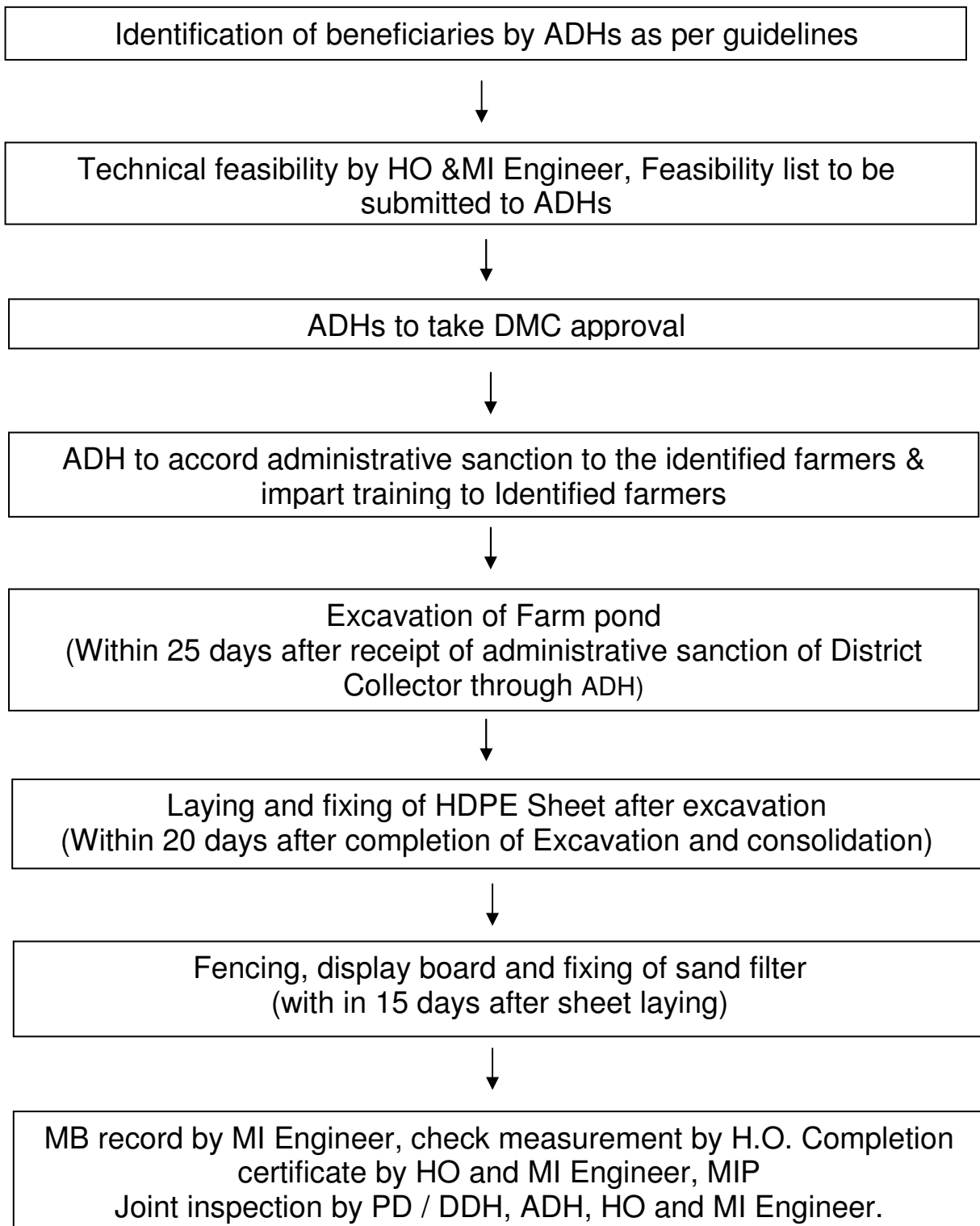
2. Third Party Verification: (100 % verification) :

➤ Thirty party inspection nominated by Head of the Department after institution to ADH of the district after completion of execution of farm ponds in all respects.

➤ To evaluate the quality parameters in execution of the Farm Pond.

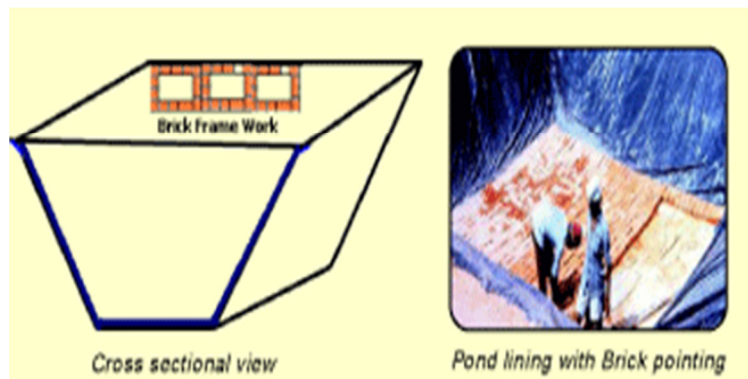
➤ Impact study on Farm Ponds.

16.FLOW CHART FOR IMPLEMENTATION OF EXECUTION OF FARM PONDS



17. GENERAL CRITERIA FOR POND CONSTRUCTION (RECOMMENDED BY NCPAH):

- **Survey of water resources/catchments:** The most important factor for designing farm ponds is water source. There should be enough water available either by perennial, seasonal, runoff through watershed areas or by other sources to fill the pond.
- **Selection of Site:** Site should be selected from where maximum area can be covered for supplemental irrigation of the water stressed crops. The natural tendency of soil and elevation should also be taken into consideration.
- **Selection of size of tank:** The selection of size of tank is very important depends on the irrigated area, sources of water available, types of soil, frequency of irrigation and volume of water required etc. The slope and shape of trapezoidal pond depends on the types of soil and its topography.
- **Depth of pond:** Depth of the pond should range from 3 to 5 m. Greater than 2 m of depth are advantageous as the surface area is less resulting in minimum evaporation loss and maintenance hazard. If sufficient land is not available, this can be off set to some degree by increasing the depth of the pond.
- **Slope of pond:** Slopes lies “between” 1.5V:1H to 3V:1H have been recommended for clay to sandy loam soil.



DESIGN CRITERIA OF POND:

Design criteria for constructing farm pond play an important role that includes excavation, slope, shape, leveling and compacting the soil after considering all general criteria. The following parameter should be kept in mind while designing a pond.

A) Preparation of pit:

- Mark out the outer corner of the selected field using pegs
- Measure the bottom dimension of the pond by calculating depth and slope ratio. It appears in center of the outer corner of the selected site and marked it

- before excavation process.
- Excavate marked area first up to desired depth.
- After that, excavate rest area in inclined manner from one edge of bottom to top of the outer edge of same side and repeat the same for next three sides.
- Spread the excavated soil in the depressions for leveling and also on edges to make bunds of desired height from ground level.
- Level the excavated pond in order to suppress the angular projection
- Cut soil must be sealed or compacted unless the site is dug into a tight, clay formation so that film could be saved from puncture caused by these projections.
- After compaction, the whole area of pond should be treated with 4% atrazine (Weedicide solution) so that the plastic film could be saved from puncture caused by root infestation.
- After that all surface of pond should be smoothened properly.
- Excavate a trench of one cubic feet size on top of the bund at distance of 0.75 -1.0 m from the inner edge of the pond for anchoring the HDPE film.

B) HDPE (high density poly-ethylene, with carbon black)

This lining material shall be UV light resistant and one of the best available to last many years (generally 100 plus). It is used in lining under gasoline storage tanks, public dumps, toxic settling ponds, aquaculture ponds, etc. It can be heat-welded together. A minimum of 0.5 mm (500 micron) film is best suited for regular ponds.

C) Laying of HDPE films:

For laying of HDPE films minimum of 0.5mm (500 micron) film are best suited for lasting of film and the following procedure are taken into consideration:

- Choose the film as per BIS /ISI mark (IS: 15351 / IS: 10889 / IS: 2508)
- Use minimum of 500 micron black HDPE film
- Calculate the film requirement for dugout pond and cut it accordingly
- Measure and cut the film as per calculation.
- HDPE films manufactured into panels of standard widths. Therefore convert the film into a single sheet as desired either mechanically by heat-sealing machine like Hot Air fusion welding machine or manually (by overlapping 15 cm of the edge of two sheet and scrubbed lightly using emery paper or sand paper (120 grade) using bitumen/Synthetic Rubber adhesive No -998 made by fevicol so that it fit exactly to fit into the pond.
- Monitor the film in sunlight for searching/puncture hole if any, sealed the hole with bitumen/adhesive or by heat-sealing procedure.
- The ends of the film at the surface have to be firmly buried in a trench at the bank of the pond to avoid sagging in of the film.
- Care should be taken to avoid the wrinkles and film must be pleated at the corner.

D) Pointing over the film

To protect the film from damage pointing over the laid film is required. Generally locally available material / easily available material to be used

- Over laying works can be done in many ways but most suitable and economic ways are one of them is overlaying brick alone completely on all four sides, bunds and bottom of the lined tank. Secondly construct a brick work frame of size 2' x 2' and place mortar of cement and soil (1:8) inside the frame.
- Install water inlet and outlet pipes duly fixing them in brick masonry post over laid plastic film and to measure the discharge of water from the tanks, a 'V'- notch weir can be constructed.
- Drainage channel all along the border of the field is formed according to the gradient/slope.
- Live grass/ Turf is established on the bunds of the pond to prevent soil erosion.

E) Cost economics of pond:

Sl.No.	Work components	Pond No 1	Pond No 2
1	Dimension of pond	100 m x 100 m	20 m x 20 m
2	Bottom dimension	91 m x 91 m	11 m 11 m
3	Depth of pond	3 m	3 m
	Slope	1.5:1	1.5:1
4	Capacity of pond	27420 m ³	781 m ³
5	Excavation and spreading the soil in depressions and on bunds	Rs. 572800/-	Rs. 19200/-
6	Lining with 500 micron PE film	Rs. 634040/-	Rs. 38830/-
7	Formation of brick pointing / frame work (2' x 2') and over laying with cement and soil (1:8)	Rs. 204500/-	Rs. 38800/-
8	Labour, fixing, jointing, anchoring etc	Rs. 275675/-	Rs. 16875/-
9	Laying charges & others	Rs. 60/-	Rs. 125/-
10	Total cost (Rs)	Rs. 1687015/-	Rs. 113705/- + other works Rs. 36295/- = Total cost of Rs. 150000/-

18. DO'S & DON'TS:

- Site selection must be at appropriate place of water sources
- Cultivable command area should be near the pond.
- Avoid hard rock area, it will be labour expensive and angular projection in dugout pond may damaged the laid films.
- Level the excavated pond in order to suppress the angular projection
- The top layer of tank basin sub grade should be compacted to at least 90% of proctor's density by mechanical equipment like vibratory compacter or by other suitable equipments.
- Any weak and soft spots present shall be removed and shall be replaced with compacted fills.
- Standing water or excess moisture in dugout pond should not be allowed for laying of films.
- Films rolls should be packed properly and should be of ISI marked.
- Keep the film rolls in original packing prior to actual use or laying the film
- See the uniform pressure is applied while sealing the film
- Don't handle roughly and don't drag the film rolls as they may get damaged in the process.
- Don't walk on the film while lining operation is in process to avoid any damage to the film
- Don't slide cover overlaying material like bricks, tiles etc. on the film to avoid any damage and displacement.
- Don't use hooks for lifting the rolls of film
- Don't use reprocessed HDPE films as the quality is not guaranteed and may lead to premature failure of the film.

List of Licences for supply of HDPE (Geo-membrane) Sheet of **Bureau of Indian Standards**(communicated by CIPET):

Sl. No.	CML No.	Name & Address	Operative Status	Variety / Brand names
I	Gujarat State			
1	7971906	Gujarat Craft Industries Limited, 431, Santej, Vadsar Road, Santej, Ahmadabad, Gujarat, Pin code: 382721, Tel: 02764-286673, Fax: 02764-286674	Operative	High density Polyethylene (HDPE) Woven Fabric (Geo-membrane)
2	7826388	Texel Industries Limited (Old), Plot No. 2106, Santej-Khatraj Road, Nr. Shah Steel, Vill. Santej, Gandhi nagar Dist, Gujarat State. Pin code: 382721, Tel: 02764-286329/286334, Fax: 02764-286330	Operative	Laminated high density Polyethylene (HDPE) woven fabric (geo-membrane) for water proof lining (IS)
3	3681974	Union Quality Plastics Ltd., 204, GIDC Industrial Estate, Umbergaon, Dist: Valsad, Gujarat State, Pin code: 396171, Tel: 0260-2562591, Mobile: 09898384283	Operative	Laminated High Density, High Density Polythylene (HDPE) Woven Fabric (Geo-membrane) for Water
4	3680871	Gujarat Raffia Industries Limited, 455, Vadsar Road, Vill: Santej, Tal: Kalol, Dist: Gandhi Nagar, Gujarat State, Pin code: 382721, Tel: 02764-286672, Fax:02764-286652, Mobile : 9825010778	Operative	Laminated High Density Polyethylene (HDPE) Woven Fabric (Geo-membrane) for Water
II	Madhya Pradesh			
5	2506547	Neo Corp International Limited, Plot No. 62-63, Sector 1, Industrial Area, Pithampur, Dhar District, Madhya Pradesh State, Pin code: 452775, Tel: 07292-410410, Fax: 07292-410499, Mobile: 9893593839, Email: ashish_lapalika@neocorp.co.in	Operative	Type – 1 Type – 2
III	Maharashtra			
6	79111682	International Packaging Product Pvt. Ltd, 602, Antariksh, (Thakur House) Makwana Road, Marol Andheri (E), Mumbai, Greater Bombay, Maharashtra State, Pin code: 400059, Tel: 67416620, Fax: 67416699, Mobile: 09924107355	Operative	Type II Laminated HDPE Woven Fabric (Geo membrane) for Water Proofing lining.

Sl. No.	CML No.	Name & Address	Operative Status	Variety / Brand names
7	7967208	Kohinoor Proofing Industries, S.No. 28/1B, Tiny Industrial Estate, Kondhwa, Pune, Maharashtra State, Pin code: 411048, Mobile: 9764127661, Email: ghanrajshah28@gmail.com	Operative	
8	3605655	Jay Polytarp Industries, 101, Mohan Palace, TPS III, 57 th Road, Near Bhatiwadi, Borivli (W), Mumbai, Greater Bombay, Maharashtra State, Pin code: 400092, Tel: 28996985, Fax: 2988381, Mobile: 9820046923, Email: rainseal@bom5.vsnl.net.in , lamifabind@gmail.com	Operative	Type-I and Type – II only Brand Rainseal
9	3914163	G.K. Plastics, Gat No. 244/246, A/P, Bhalwani, Taluka Parner, Ahmednagar, Maharashtra State, Pin code: 414003, Tel: 02488-271721, Fax: 02488-271721, Email: gkplastics10@yahoo.com	Operative	Laminated high density Polyethylene (HDPE) woven fabric (Geo Membrane) for water proofing lining, Type II.
10	7908188	Aadi Plastic Industries Pvt Ltd. G.No. 133/14 & G.No. 121/1, A/P Kagal, Taluka Kagal, Kolhapur Dist., Maharashtra State, Tel: 02325-243826, Fax: 02325-243825	Operative	Laminated high density polyethylene woven fabric for water proof lining thickness 0.50 mm, Type II

❖ **Company / Firm Licenses Validity shall be confirmed by the HO / ADH before laying of sheet.**