

## **EXPRESSION OF INTEREST (EOI)**

**For**

**EMPANELMENT OF AGENCY FOR CONSTRUCTION OF NET  
HOUSE / POLYHOUSE/POLY TUNNEL ON TURNKEY BASIS  
IN THE STATE OF WEST BENGAL AND PROVIDE  
AGRONOMICAL SERVICES RELATED WITH IT.**

**EOI No. 262/WBSFPHDCL/1770/2020-21      Date: 19.02.2021**

**DISCLAIMER**

This bid document for empanelment of agency for construction of Net House / Poly house/Poly Tunnel on turnkey basis in the state of West Bengal and to provide agronomical services related with it, contains brief information on the scope of work, eligibility requirements and details of the selection process amongst others for the successful bidder.

Intimation of discrepancies in the bid document, if any, may be given, by the Bidders, to the office of WBSFP&HDCL within 48 hours from the time of publishing of bid. If WBSFP&HDCL receives no written communication, it shall be deemed that the Bidders are satisfied with the information provided in the bid document.

This bid document is not an agreement. The scope of work and other information as well as the right and obligations of the successful Bidder shall be set out in a separate agreement to be executed between WBSFP&HDCL and the successful Bidder.

WBSFP&HDCL reserves the right to accept or reject any or all Bids without giving any reasons thereof.

WBSFP&HDCL shall not entertain or be liable for any claim for costs and expenses in relation to the preparation of the documents to be submitted in terms of this bid document.

WBSFP&HDCL shall not be responsible for any late receipt of applications for any reasons whatsoever. The applications received late will not be considered.

WBSFP&HDCL may include any other item in the Scope of work at any time after consultation with applicants or otherwise.

The WBSFP&HDCL reserves the right to relax or waive any of the conditions stipulated in this document as deemed necessary in the best interest of the WBSFP&HDCL without assigning any reasons thereof.

**INVITATION FOR EXPRESSION OF INTEREST (EOI)**

WBSFP&HDCL invites bids from Agency for Empanelment of Agency for construction of Net House / Poly house/Poly Tunnel on turnkey basis in the state of West Bengal and to provide agronomical services related with it. Interested Agency with sound financial condition may download the Tender document/Form from WBSFP&HDCL's website/ Government e-procurement portal.

The vision of the Department of FPI & Horticulture, Government of West Bengal is:

- Greater wealth creation for farmers.
- Sustainable increase in productivity of horticultural crops.
- Food Security.
- Higher income from horticulture.
- Higher value addition to horticultural produce.
- Promotion of exports.
- Conservation of water resources through micro irrigation.

To achieve this vision, Department of FPI & Horticulture, Government of West Bengal is very keen to encourage farmers to adopt protected method of cultivation by implementing High Tech Cultivation Technologies such as Shade-net House / Poly house/ Poly Tunnel structures etc. with the following objectives:

- 1) To provide favourable micro climatic conditions for the plants.
- 2) To grow crops throughout the year whenever possible.
- 3) To obtain higher yield with better quality per unit area.

- 4) To conserve moisture and minimize loss of irrigation water.
- 5) To cultivate high value / off season crops.
- 6) To help control pest and diseases.
- 7) To help in hardening of tissue cultured lants.
- 8) To help in raising nurseries wherein round the year propagation of planting material is possible.
- 9) To protect the crops from wind, rain, snow, birds, hail etc.

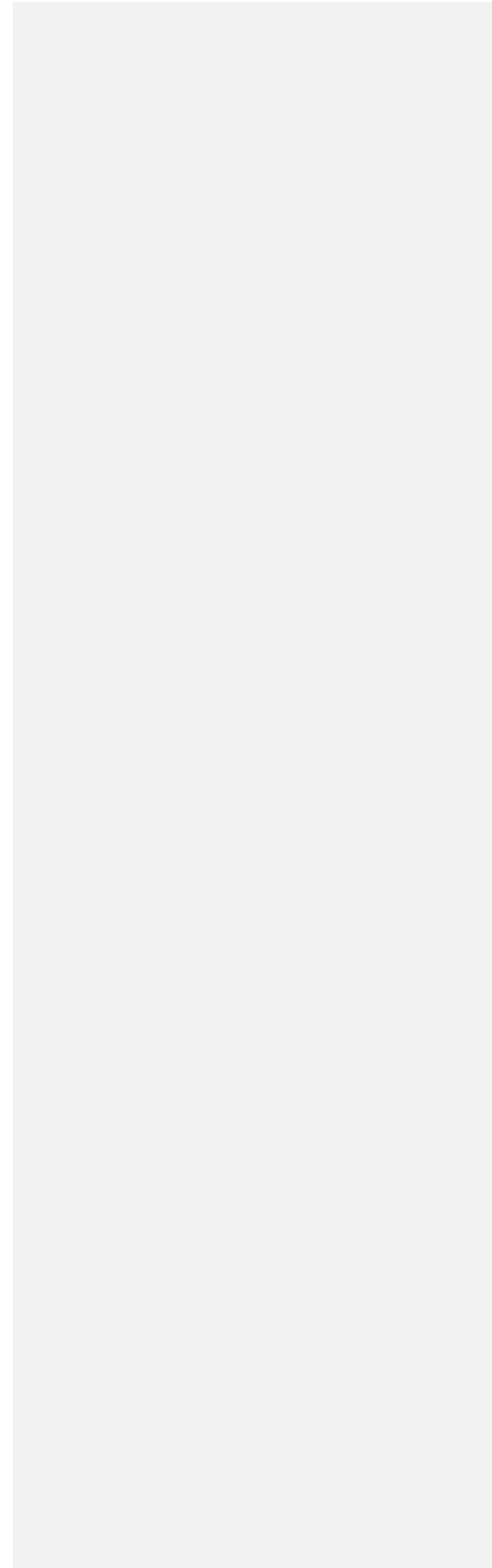
Department of FPI & Horticulture, Government of West Bengal is providing financial assistance to the farmers for establishment of Poly house/ Net house/ Poly Tunnel etc. under different schemes. Financial Assistance will be as per the Government norms prevailing at the time of sanction of financial assistance.

Following key points need to be addressed for successful large scale implementation of this scheme in the State.

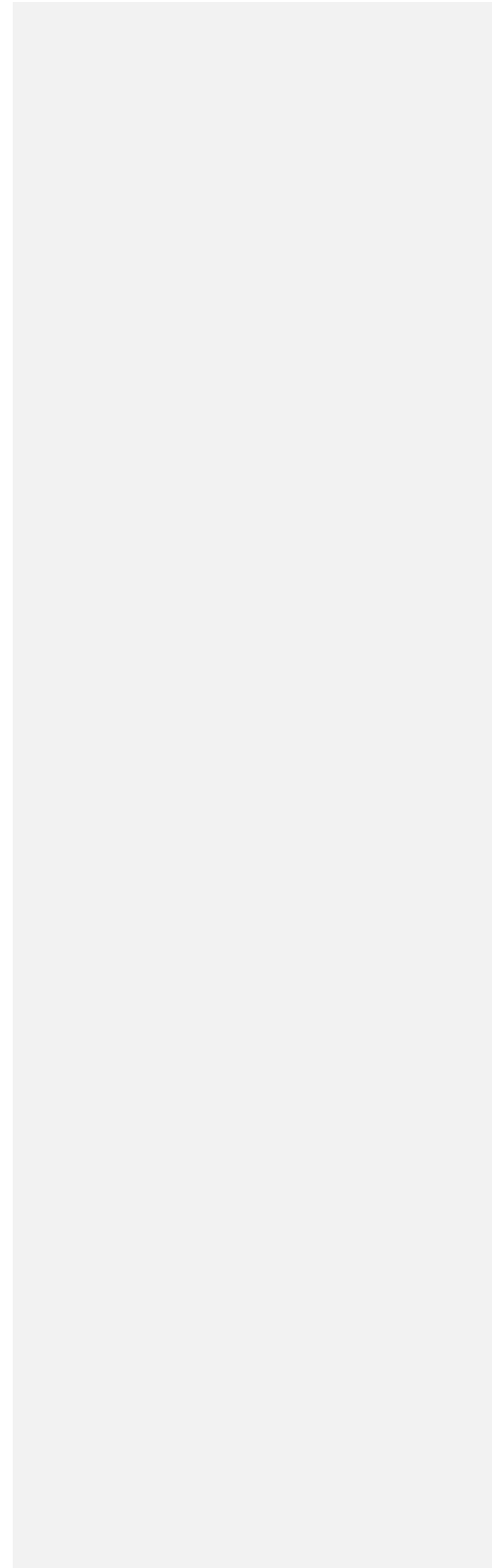
- 1) Ensuring supply of all components as per the minimum standards specified by **National Committee on Plasticulture Application in Horticulture (NCPAH), Government of India.**
- 2) Ensuring quality of supply and installation of project components as specified in the guidelines to safe guard farmers from future loss.
- 3) Assisting farmers in selection of suitable agency (manufacturer/fabricator) to implement Poly house / Net house / Poly Tunnel etc. based on their requirement.
- 4) Ensuring training of operation of project as well as the agronomical inputs to farmers to achieve overall objective of increasing productivity and thus improving their income.
- 5) Ensuring trouble free operation of Poly House / Shade net House/Poly Tunnel after the project has been implemented.
- 6) To derive a reasonable cost for each type of technology through price discovery method this will protect farmers from undue market practice.

Hence, the Department of FPI & Horticulture, Government of West Bengal intends to empanel competent manufacturers / fabricators, who can implement projects of Poly House / Net house/Poly Tunnel etc. and provide operational training and required agronomical knowledge to farmers for the successful large-scale implementation of this scheme. West Bengal State Food Processing and Horticulture Development Corporation Limited will act as implementing agency for enlistment of manufacturer/ fabricator.

Proposal in the form of EOIs in duplicate is requested in complete accordance with the documents/attachments as per following guidelines. The agency will have to provide the price offer as per the format through online system only.



At the end of this exercise, list of selected agencies will be prepared and the farmers will be advised to execute their project through any of these empanelled agencies. The agency, found eligible at the end of this exercise will be allowed to execute the project.



**SCHEDULE FOR INVITATION OF EOI**

**NAME:** Empanelment of Agency for Construction of Net House/Poly house/Poly Tunnel  
on Turnkey basis in the State of West Bengal and provide agronomical services related to it.

<b>EOI Authority</b>	West Bengal State Food Processing and Horticulture Development Corporation Limited, Benfish Tower, Kolkata – 700 091.
<b>Issue of EOI</b>	<b>From (19/02/21) at 16.30 hrs to (12/03/21) upto 16.00 hrs.</b>
<b>EOI Due Date</b>	<b>(12/03/21) upto 16.00 hrs.</b>
<b>Technical Proposal Opening Date &amp; Time:</b>	<b>(15/03/21) at 15.00 hrs</b>
<b>Pre-Bid Meeting</b>	On <b>(03/03/21) at 15:00 hrs</b> at the Office of the Managing Director, West Bengal State Food Processing and Horticulture Development Corporation Limited, Benfish Tower, Kolkata – 700 091.
<b>EOI document Fee</b>	<b>Rs. 5,000/- (Rupees Five Thousand Only)</b>
<b>EOI Fee Payable to</b>	West Bengal State Food Processing and Horticulture Development Corporation Limited, RTGS/NEFT in case of offline payment through bank account in any Bank



<b>Price Offer</b>	The agency shall submit their best possible price offer in electronic format only on website, <a href="http://www.wbtenders.gov.in">www.wbtenders.gov.in</a> after digitally signing the same. Offers which are not digitally signed will not be accepted. No offer in physical form will be accepted and any such offer if received will be rejected. Also any reference of the price, quotes etc. in physical submission may result in rejection of the offer of the agency.
<b>Joint Venture/Consortium</b>	Not allowed
<b>EOI currency Setting</b>	Indian Rupee (INR)

## 1. **BID PROCEDURE**

### a. **Registration of Bidder:**

Any bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the **Government e-Procurement System / Portal:<http://www.wbtenders.gov.in>**

### b. **Digital Signature Certificate (DSC)**

Each bidder is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders from the approved service provider of the National Informatics Centre (NIC).

### c. **Collection of Tender Documents**

The intending Bidders can search and download NIT and Tender Document(s) electronically / from the **Government e-Procurement System / Portal** using the Digital Signature Certificate. **This is the only mode of collection of Tender Documents.**

**d. Submission of Tenders**

Tenders are to be submitted online on the website <http://www.wbtenders.gov.in> in a single folder before the prescribed date and time using the Digital Signature Certificate (DSC). The documents are to be uploaded in the form of virus scanned copy duly signed. The documents will get encrypted (transformed into non readable formats).

**e. EOI document Fee**

**Detailed procedure for online submission of EOI document Fee**

Procedure to be followed for online submission of **EOI document Fee** is as below-

**i. Login by Bidder**

- a. A Bidder desirous of taking part in the tender invited by the Corporation shall logon to the e-procurement portal of <http://www.wbtenders.gov.in> using his login ID and password.
- b. He will select the tender to bid and initiate payment of pre-defined **EOI document Fee** for that tender by selecting from either of the following payment modes:
  - i. Net banking (any of the Banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI Bank payment Gateway.
  - ii. RTGS/NEFT in case of offline payment through bank account in any Bank.

**ii. Payment by Net Banking (any listed Bank) through ICICI Bank Payment Gateway**

- a. On selection of net banking as the payment mode, the Bidder will be directed to ICICI Bank Payment Gateway webpage (along with a string containing a Unique ID) where he will select the Bank through which he wants to do the transaction.
- b. Bidder will make the payment after entering his Unique ID and password of the Bank to process the transaction.

- c. Bidder will receive a confirmation message regarding success/failure of the transaction.
- d. If the transaction is successful, the amount paid by the Bidder will get credited to the concerned pooling account maintained with the Focal Point Branch of ICICI for collection of **EOI document Fee**.
- e. If the transaction is failure, the Bidder will again try for payment by going back to the first step.

**iii. Payment through RTGS/ NEFT**

- a. On selection of RTGS/NEFT as the payment mode, the e-procurement portal will show a pre-filled challan having the details to process RTGS/NEFT transaction.
- b. The Bidder will print the challan and use the pre-filled information to make RTGS/NEFT payment using his bank account.
- c. Once payment is made, the Bidder will come back to the e-procurement portal after expiry of a reasonable time to enable the NEFT/RTGS process to complete, in order to verify the payment made and continue the bidding process.
- d. If verification is successful, the fund will get credited to the concerned Pooling account maintained with the Focal Point Branch of ICICI Bank for collection of **EOI document Fee**.
- e. Hereafter, the Bidder will go to e-procurement portal for submission of his bid.
- f. But, if the payment verification is unsuccessful, the amount will be returned to the bidder's account.

**iv. Clarification of Bidding Document**

- a. If there be any discrepancy or obscurity in the meaning of any clause of the bid document or if there be any query of the intending bidder, the bidder shall set forth in writing such discrepancies, doubt, obscurity or queries and submit the same to the Corporation marked to the 'MD, WBSFP&HDCL' prior to the date fixed for pre-bid meeting.
- b. The queries may be sent by email also to [wbsfphdcl@gmail.com](mailto:wbsfphdcl@gmail.com) up to one day before the date fixed for pre-bid meeting.
- c. The queries received by email up to one day before the date fixed for pre-bid meeting only shall be considered for response.
- d. Verbal queries will be accepted on the day of the pre-bid meeting. After the pre-bid meeting no query shall be entertained.
- e. **The clarification given in response to the queries and issues raised in the pre-bid meeting shall be final and binding on the bidder.**

**v. Amendment of Bidding Document**

At any time, prior to the deadline for submission of bids, WBSFP&HDCL may, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing amendments. Any such amendment shall form the part of the bidding document. **Such amendments and clarifications in response to pre-bid meeting will be published on the same website and also on the website of the Deptt. of Food Processing Industries & Horticulture (<http://www.wbfpih.gov.in>). Prospective bidders are requested to visit the mentioned websites on a regular basis to keep abreast of any news. WBSFP&HDCL will bear no responsibility or liability for bidders failing to do so.**

In order to afford the prospective bidders reasonable time in which to take the amendment into account in preparing their bids, WBSFP&HDCL may extend the deadline for submission of bids. Such amendments, clarifications etc. shall be binding on the bidders and will be given due consideration by the bidders while they submit their bids and invariably enclose such documents as a part of the bid.

**vi. Penalty for suppression / distortion of fact**

If any bidder fails to produce the original hard copies of the documents (especially Credential Certificates and audited balance sheets), or any other documents on demand of the Tender Committee within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies or if there is any suppression, the bidder will be suspended / debarred / blacklisted / disqualified from participating in the tenders of the WBSFP&HDCL for a period of 3 (Three) years. Besides, WBSFP&HDCL may take appropriate legal action against such defaulting bidder.

- vii. Conditional and incomplete bids will be summarily rejected.
- viii. Any type of canvassing by the Bidder in furtherance of a bid is strictly prohibited. Such canvassing may lead to cancellation of its bid.
- ix. The Tender Committee reserves the right to accept or reject any offer without assigning any reason whatsoever and is not liable for any cost that might have been incurred by any Bidder at any stage of bidding.
- x. The Bidder shall bear all costs associated with the preparation and submission of the Bid and the purchaser will no case be responsible and liable for those cost.

**General Instructions**

- 1.0** The Agency shall be responsible for all of the costs associated with the preparation of their Bids and their participation in the Bidding Process. WBSFP&HDCL shall not be

responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

**2.0** Agency has to submit best price offer in electronic form only. Technical proposal will have to be accompanied by required forms and documents, and instrument for payment of EOI Document Fee.

**3.0** EOI Document Fee and EOI Security shall have to be paid as stated in the Notice Inviting Online Tenders section.

**4.0 SUBMISSION OF BIDS:-**

The bidder shall submit the bid in two separate parts in electronic format only on website [www.wbtenders.gov.in](http://www.wbtenders.gov.in):

**Part-I shall be named “Technical Bid” and shall comprise of as below:**

- i. Format for No. of Greenhouse/Net House/Poly House/Poly Tunnel Work completed in last three years for **subsidized case – Annexure 4 (A)**
- ii. Format for Performance Guarantee – Annexure 7
- iii. Proforma of General Power of Attorney- Annexure 8
- iv. Detail of Competent Personnel – Annexure 9
- v. Draft format of Work Order to be given to empanelled agency by farmer – Annexure 10
- vi. CA certificate format -Annexure-11
- vii. PAN Card
- viii. Audited Profit & Loss Statements and Balance Sheets for the last three preceding financial years
- ix. **Part-II shall be named “Financial Bid “ and shall be in different type and size of Structures –Annexure 5(A)**

**5.0** Services offered should be strictly as per specifications mentioned in this EOI Document. The agency is expected to spell out any unavoidable deviations, article-wise, in proposal under the heading “Deviations” with full justification.

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### **Objective of the EOI**

- To ensure that the design of structure meets the guidelines prescribed by National Committee on Plasticulture Applications in Horticulture (*NCPAH*) and the specification as prescribed in this EOI.
- To ensure that the fabricator/manufacturer delivers the prescribed quality input material /components such as GI pipes, Polythene, Agriculture net, clamps, nuts & bolts etc. and a maximum period of warranty.
- To derive the lowest possible price for each type of technology/structure through price discovery method.
- To ensure that the farmer gets proper after sales service support and agronomical advisory services from the fabricator/manufacturer.
- To scrutinize and empanel the competent fabricators/manufacturers for procuring, erection and commissioning of Net house / Poly-house/Poly Tunnel structures at farmer's place.

### **Need for Empanelment**

- In present scenario, due to lack of agreement on uniform standards, material specification and quality for construction of Net house / Poly house/Poly Tunnel structures, the farmers are facing troubles such as
  - Not getting quality of construction.
  - Sub-optimal durability of the structures requiring additional cost for repairs.
  - Use of substandard material.
  - Inadequate agronomical services.
  - High Cost of the project.

- Delay in project implementation.
- Lack of after sales services, etc.

Hence to overcome the above problems with an objective to safe guard the interest of farmers it was envisaged to empanel agencies.

### **Scope of Work**

#### **Erection, Procurement and Commissioning**

- i.)** The agency shall supply the material and construct the Net house / Poly house / Poly Tunnel at farmer's field according to the guidelines prescribed.
- ii.)** If there are amendments in standards by the National Committee on Plastics Applications in Horticulture (NCPAH) or any other Government body during the period of empanelment and the specification as prescribed in this EOI the agency shall follow the same subject to approval of the Department of Food Processing Industries and Horticulture.
- iii.)** The agency shall implement the project using material and components of minimum Indian standards prescribed or of the suggested manufacturer only. The details are attached. The type of polythene/net is to be used based on the crop selected by the farmer, however the quality criteria should fall with the minimum standards suggested in the guideline.
- iv.)** The agency shall construct the Polyhouse/Net house/Poly Tunnel within the time period set by the Authority.
- v.)** The agency will take a trial run of the entire project and handover the same to farmer.
- vi.)** The agency must handover, after commissioning of Green house/ Net house/Poly Tunnel, a complete and updated "Operational Manuals" in local language. Selected

Agency must submit the sample of “Operational Manuals” for all the structures in English and Bengali for necessary approval of the appropriate authority.

#### **After Sales Services, Repair and Maintenance**

- i.)** The warranty period for the components / equipment shall be for three years from the date of completion of the project and handover to beneficiary.
- ii.)** The agency will provide after sales services at least for 3 years from the date of handover to the farmer.
- iii.)** The agency can charge for replacement of spare parts and components which are out of warranty period. These should be indicated in the operations manual.
- iv.)** In the event any instrument / component gets broken or damaged during installation and trial run at the site before handing over the structure to the farmer, the agency shall replace the same at free of cost.

#### **Agronomical Services**

- i.)** The agency shall provide operational training to the farmer or its nominated family member only.
- ii.)** For the successful implementation of the project and to ensure envisaged benefits out of this project, the agency shall provide agronomical services related with Polyhouse/Nethouse/PolyTunnelcultivation technology to the beneficiary.
- iii.)** The final decision regarding the selection of crop, marketing *etc.* should only be taken by farmer itself.
- iv.)** A competent person, deputed by the agency will pay visit at least once in a month to the site upto one year. The list of competent person along with detail of

qualification and experience has to be provided to the Authority as per the format given.

- v.) The agency will maintain records of such visit and submit the same to the Authority as and when required.

**Terms of Reference for the Agency**

- i.) The price offer discovered would be applicable for a period of at least one year.
- ii.) The subsidy shall be released by the Authority to the concerned beneficiary after due verification of the structure as per the technical specifications and fulfillment of terms & conditions specified.
- iii.) The Authority may levy a penalty on the empanelled agency if found that supplied component are not conforming to minimum specifications. Any such deviations may also invite removal of agency from the panel for the rest of the period of empanelment.
- iv.) The agency should provide help to the interested farmer for settlement of insurance claim and assist in submitting *prima facie* report of the damages sustained within the scope of the insurance policy, if required.
- v.) The empanelled agency shall not sub-contract the work of construction of net house/polyhouse/poly tunnel to the associate dealer/distributor/other party. If agency is found to be sub-contracting the work of construction, the empanelment of such agency shall be cancelled by the Authority.
- vi.) The Authority has right to cancel the empanelment at any point of time during the contract period without assigning any reason.
- vii.) The Authority has right to disengage the empanelment of the agency if is found that work carried out by agency is not satisfactory.

- viii.)** The Authority will carry out inspection through its nominated agency or officials of the each project. On getting the inspection report and if the project is found to be as per prescribed standards, the Authority will release the subsidy amount to the farmer.
- xiv.)** The subsidy shall not be released if the structure or any component is not as per the specifications and standards prescribed.

### **Selection Process**

The agency will have to qualify technically based on the eligibility criteria given in this document. EOI of agency not meeting the eligibility criteria will not be processed further. The documents to be submitted for fulfillment of eligibility criteria are given in **Annexure-2**.

- i.)** The EOI of all such agency who had faced serious complaints about their past work may get rejected before the scrutiny of EOI.
- ii.)** The price offer of all eligible agencies will be analyzed. The agencies fulfilling the criteria of EOI document will be considered for empanelment. The list of empanelled agencies will be shared with all districts. The farmer is free to select the agency from the panel only.

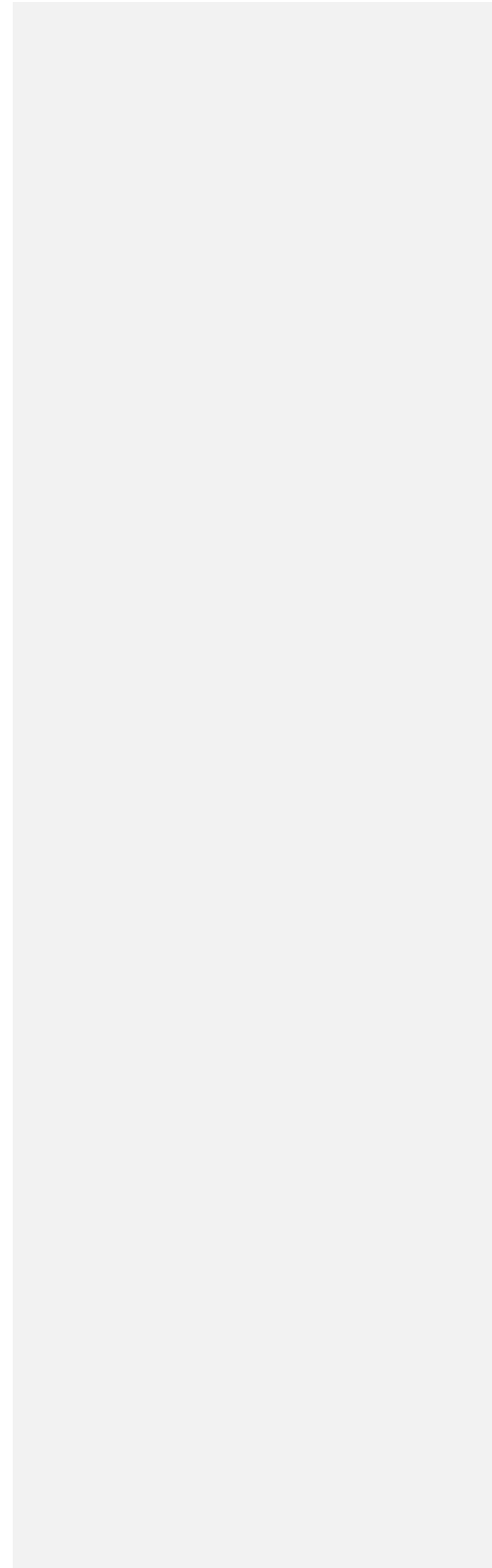
### **Minimum Eligibility Criteria**

The following are the minimum eligibility criteria for empanelment of agency:

- i.)** Minimum 03 (three) years of experience in the field of Green house/Polyhouse/Net house/Poly Tunnel installation and maintenance. The agency has to submit a CA certificate to establish experience of minimum three years as per format given at Annexure-11.
- ii.)** The agency should have Minimum Average Annual Turnover of Rs. 25 lakhs in

the last 3 years (i.e.2018-19, 2019-20 and 2020-21) from construction activity of greenhouse/nethouse/poly house/poly tunnel only.

- iii.) The agency should have its own manufacturing/assembling facility within the state or the agency shall give an undertaking that they will establish such facility in the state within six months after being empanelled.



**Price Offer**

- i.)** To safeguard the interest of farmer and to streamline the cost of specified Polyhouse/Nethouse/Poly Tunnel structure of different size, the authority on behalf of farmer, is asking the agency to submit their best possible price offer for various items of Greenhouse.
- ii.)** The agency shall offer their best price for construction of play house/net house/ Poly Tunnel and agronomical services as specified in the scope of work of this document as per the format given at **Annexure-5 (A)**
- iii.)** The agency shall have to offer consolidated price for each project component mentioned in the format for different sizes separately. The price should be inclusive of all applicable taxes.
- iv.)** The price offer has to be submitted online only. Any mention of price offer in the physical form of EOI will render the offer liable for rejection. Agency shall categorically confirm strict compliance with the following stipulation in respect of their offer.

  - a) Any effort by Agency or Agency's agent/consultant or representative howsoever described to influence the Authority in any way concerning scrutiny/ consideration/ evaluation/ comparison of the EOI or decision concerning empanelment shall render their offer liable for rejection.
  - b) Price offer of only qualified agency as per eligibility criteria shall be opened.
- v.)** Authority reserves the right to seek clarification/ justification from the agency on the price offer in case Authority deems it necessary. Based on the justification provided by the agency, if Authority feels that the price offer is unrealistic/ unfeasible in order to execute a project of this nature, Authority reserves the right to reject the said price offer. The agency shall be governed by the decision of

Authority.

**Monitoring mechanism**

- i.) The empanelled agency will intimate the Authority to carry out inspection after completion of the project in all respect. The Authority will try to carry out the inspection through its nominated agency/ committee or official within 15 working days from the date of the call received from empanelled agency in written.

**Performance Security**

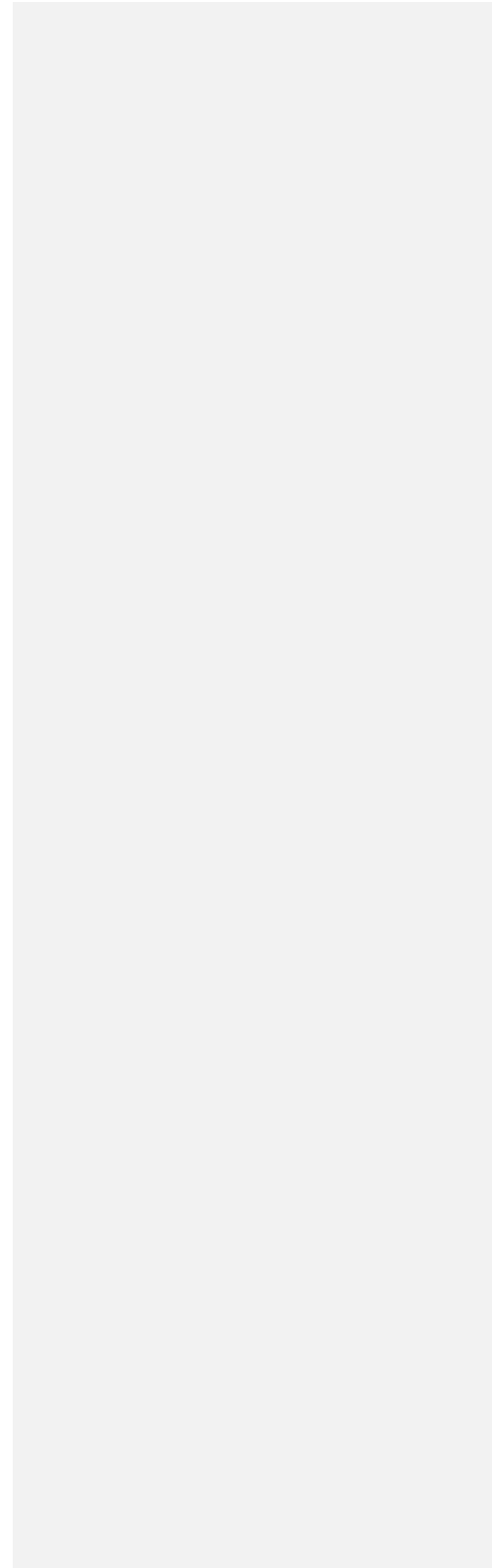
- i.) The empanelled agency shall submit a Performance Security of Rs. 2, 50, 000 (Rupees Two lakh Fifty Thousand only) in the form of Bank Guarantee on successful selection for empanelment. The performance security may be appropriated against breach of the terms and condition of this EOI document. The bank guarantee shall be for a period of threeyears. The Bank Guarantee format is given in the **Annexure-7**.



**ANNEXURE –I**  
**COMPANY PROFILE**

	<b>Particular</b>	<b>Detail</b>
1	Name of Organization	
2	Nature of the Organization	
a	In case of Public/Pvt. Ltd company (Certified copy of Certificate of incorporation for companies & Memorandum and Articles of Associations)	
b	In case of Partnership Firm (Partnership deed)	
c	In case of Proprietorship (Registration certificate, Factory registration, DIC –industrial registration)	
d	In case of society (Certified copy of registration deed with objects of constitution of society)	
e	In case of Corporation (Authenticated copy of the parent statute)	
3	Address with Phone No. and email ID:	

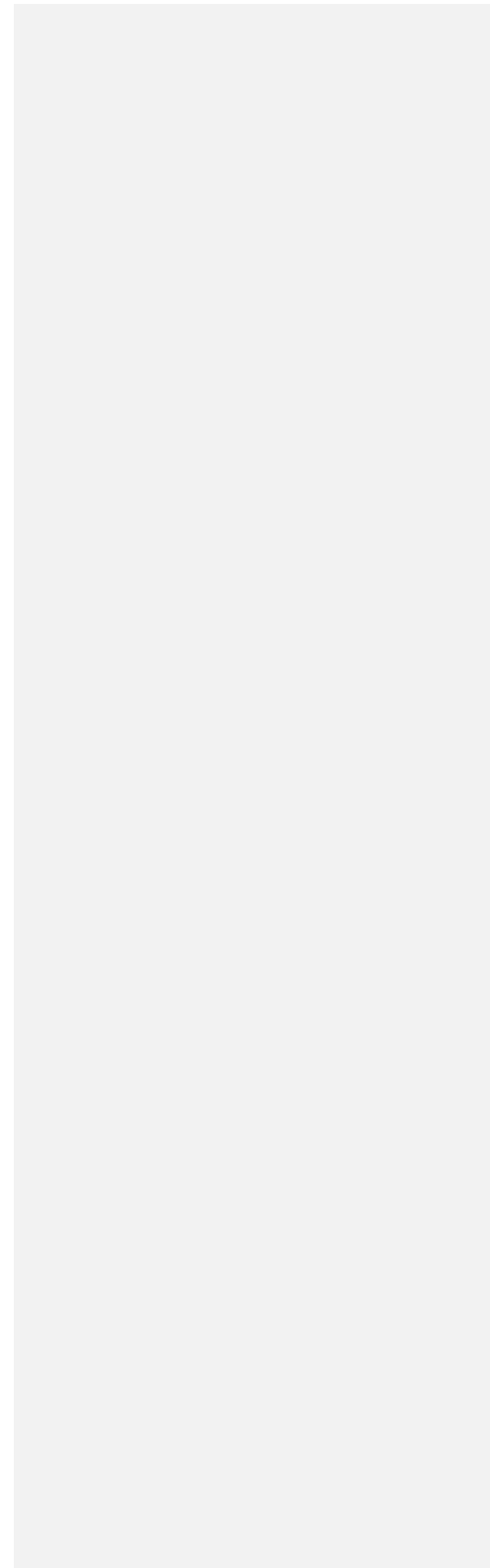
4	Name and Contact details of the Authorized Person	
5	Any other details in support of your office	
6	PAN (attach attested copy )	



**ANNEXURE - 2****CHECKLIST FOR FULFILMENT OF ELIGIBILITY CRITERIA**

	<b>Criteria</b>	<b>Documents/Detail required</b>	<b>Documentary Proof attached (Y/N) Pg No.</b>
1	Minimum 03 (three) years of experience in the field of Greenhouse/Net house in supply, installation and maintenance.  <b>The last date for considering experience will be 31<sup>st</sup>March,2021</b>	Certificate of incorporation, Business commencement certificate, Works to be demonstrated by Contract/Agreement/ Work Order from clients showing clearly 3 years of experience	
2	Minimum Average Annual Turnover in the last three financial years (i.e.2018-19, 2019-20 and 2020-21) should not be less than <b>Rs. 25 lakh.</b>	1. Certificate from Chartered Accountant showing Minimum Average Annual Turnover of the agency in last 3 years (i.e.2018-19, 2019-20 and 2020-21) clearly indicating the Turnover from construction activity of Greenhouse/net house/polyhouse/poly tunnel  2. Audited Reports for last 3years.	

3	The agency should have its own manufacturing /assembling facility within the State <b>OR</b> the agency should give an undertaking that they will establish such facility in the State within six months after beingempanelled.	Factory registration, MSME registration, self_certified list of machine and equipment OR UNDERTAKING.	
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**ANNEXURE-3 (A)****NATIONAL COMMITTEE ON PLASTICULTURE APPLICATIONS IN  
HORTICULTURE(NCPAH)****MINIMUM TECHNICAL SPECIFICATIONS OF GREENHOUSE/ POLYHOUS/ NET HOUSE  
AND WALK IN TUNNEL.****1. NATURALLY VENTILATED GREENHOUSE (TYPE-I)**

<b>Sr. No.</b>	<b>Items</b>	<b>Description/Specifications</b>
1	Product	<b>Naturally Ventilated Greenhouse</b>
2	Size	500 m <sup>2</sup> /1000 m <sup>2</sup> /2000 m <sup>2</sup> /4000 m <sup>2</sup>
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6.5m to 7m depending upon the climatic conditions and Wind
5	Ridge Vent	1m - 1.2m opening fixed with 40 mesh insect net. Provision should be kept to close the vent with plastic film with manual mechanism for opening and closing the vent. However, if the farmer wants the motorized operation of the same, the agency should implement the same on charging additional cost.
6	Gutter height	4m - 4.5m from floor area
7	Gutter slope	2% slope need be provided in civil foundation work/ structure
8	Gutter frame	20 gauge or 2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint having provision of rain water harvesting system.

9	Structural design	The structural design needs to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m <sup>2</sup> . There should be provision for opening one portion at either side for entry of smalltractor/power tiller for intercultural practices.
10	Structure	Complete structure made of galvanized steel tubular pipes /C- channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 3.2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2.9 mm thick
	Trusses member/Top arches	48 mm OD, 2.9 mm thick
	Purlins	Top purlins 48/42 mm OD, 2.6 mm thick
	Purlins member & others	33/25 mm, 2.3 mm thick
	Foundations	Insert GI pipes of minimum 60 mm with 2.9 mm thick to have foundation depth of 75 mm with 3.2mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120GSM).

11	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m (L x W x H) need be provided, covered with 200micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2mwidth&2.5mheightdoubleleafmadeinplastic/FRP(FibreReinforced Plastic) sheets mounted in suitable frame.
12	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS 15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti-virus, UV blocking and also having minimum 80% level of light transmittance.
13	Fixing of cladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtain top. Wooden batons or PVC grippers need not be used for fixing the cladding materials.
14	Spring Insert	Zigzag high carbon steel spring action wire of 2-3 mm diameter must be inserted for fixing shade net into Aluminum Profile.
15	Curtains and insect screen	Roll up UV stabilized 200 micron transparent plastic film as curtains need be provided up to 3.5 m height on all sides with manually operated crank mechanism for opening and closing of curtains. However, if the farmer wants the motorized operation of the same, the agency should implement the same on charging additional cost. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains, Anti-flapping strips are suggested to ensure smooth functioning of the curtain.

16	Shade Net	Use UV stabilized Aluminate of 50% shade factor with motor operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
17	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design and water tank and fittings & accessories. Provision for micro sprinklers need be kept for top of the vents of the greenhouse (Applicable only BIS standards for all irrigation components as well as water tank).
18	Footpath	1m wide and 10 cm thick footpaths made of cement concrete ratio of 1:2:4 should be provided inside the greenhouse for required intercultural operation.
19	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p><b>Note:</b> In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profile. However, the cost of the apron should be computed on the basis of material used.</p>		
<ul style="list-style-type: none"> <li>Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and</li> </ul>		



particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm<sup>2</sup>, valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3mm/hr.

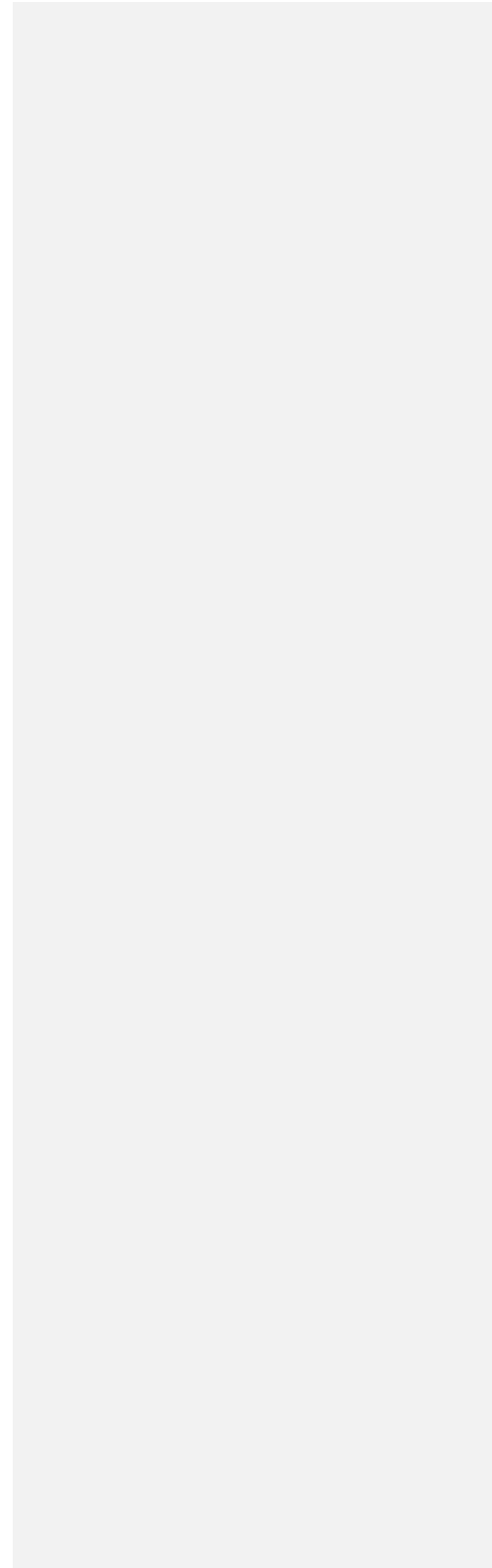
2. **NATURALLY VENTILATED GREENHOUSE (Type-2) 2mm thickness of structural members**

Sr. No.	Items	Description/Specifications
1	Product	<b>Naturally Ventilated Greenhouse</b>
2	Size	500 m <sup>2</sup> /1000 m <sup>2</sup> /2000 m <sup>2</sup> /4000 m <sup>2</sup>
3	Bay size	8m x 4m, width of greenhouse should be at least 35 % of the desired length.
4	Ridge height	6.5m to 7m depending upon the climatic conditions and Wind
5	Ridge Vent	1m - 1.2m opening fixed with 40 mesh insect Net. Provision should be kept to close the vent with plastic film with manual mechanism for opening & closing the vent. However, if the farmer wants motorized operation of the same, the agency should implement the same on charging additional cost.
6	Gutter height	4m - 4.5m from floor area
7	Gutter slope	2% slope need be provided in civil foundation work/ Structure
8	Gutter frame	20 gauge or 2mm thick GI sheet with perimeter of 0.5 m or more preferably of single length without joint having provision of rain water harvesting system.
9	Structural design	The structural design needs to be sound enough to withstand wind speed minimum 140km/hr and having trellis mechanism to withstand minimum crop load of 25kg/m <sup>2</sup> . There should be provision for opening one

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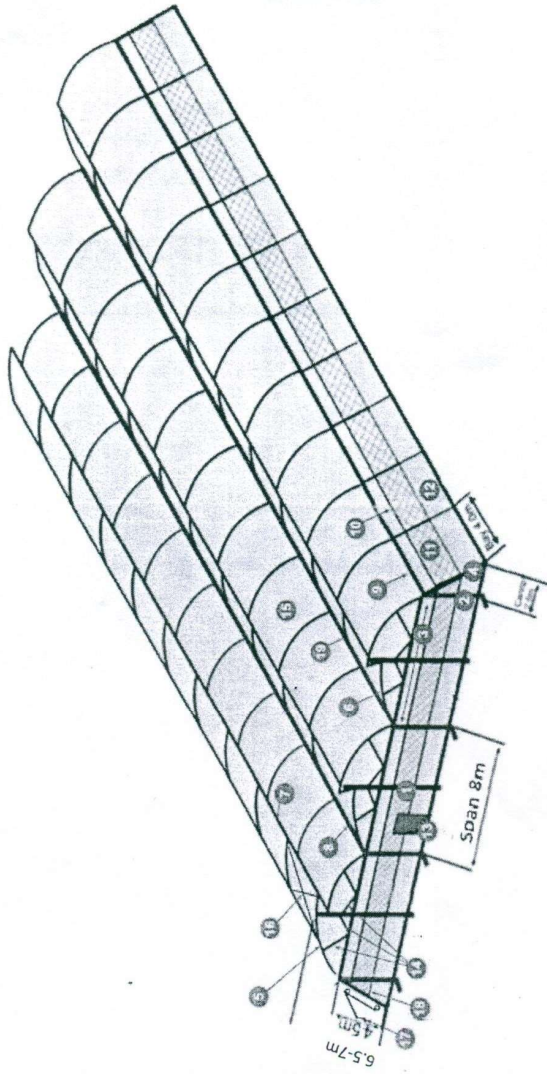
		portion at either side for entry of small tractor/power tiller for intercultural practices.
10	Structure	Complete structure made of galvanized steel tubular pipes /C- channel of light class or equivalent section conforming to Indian Standards IS 1161: 1998 and the structural member should be joined with fasteners properly. Welding of structure is not recommended.
	Columns	76 mm OD, 2 mm thick
	Trusses/Corridor	Bottom chord 60 mm OD, 2 mm thick
	Trusses member/Top arches	48 mm OD, 2 mm thick
	Purlins	Top purlins 48/42 mm OD, 2 mm thick
	Purlins member & others	33/25 mm, 2 mm thick
	Foundations	Insert GI pipes of minimum 60 mm with 2 mm thick to have foundation depth of 75 mm with 2mm thick depending upon soil type and prevailing wind velocity, grouting of foundation column with cement concrete mixture of 1:2:4 using telescopic insertion of column is recommended.
	Fasteners	All nuts & bolts must be of high tensile strength and galvanized (120 GSM).
11	Entrance room & Door	One entrance room of size 3 m x 3 m x 3 m (L x W x H) need be provided, covered with 200micron UV stabilized transparent plastic film conforming Indian Standards (IS 15827: 2009). Two hinge doors of size 2m width and 2.5 m height double leaf made in plastic/FRP

		(FiberReinforced Plastic) sheets mounted in suitable frame.
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12	Cladding material	UV stabilized 200 micron PE film conforming to Indian standards (IS 15827:2009) having properties like Anti dust, Anti-drip, Anti-fog, IR thermic, light diffusion and optional properties like Anti-sulphur, anti- virus, UV blocking and also having minimum 80% level of lighttransmittance.
13	Fixing ofcladding materials	All ends/joints of plastic film need to be fixed with two way aluminum profiles with suitable locking arrangement along with curtaintop.WoodenbatonsorPVCgrippersneednotbeusedforfixingthecladding materials.
14	Spring Insert	Zigzag high carbon steel spring action wire of 2-3 mm diameter mustbe inserted for fixing shade net into Aluminum Profile.
15	Curtains and insect screen	Roll up UV stabilized 200 microntransparent plastic film as curtains need be provided up to 3.5 m height on all sides having Manual operated crank mechanism for opening and closing of curtains. However, if the farmer wants the motorized operation of the same,theagency should implement the same on charging additional cost. 40 mesh nylon insect proof nets (UV stabilized) of equivalent size need to be fixed inside the curtains, Anti-flapping stripsare suggested to ensuresmooth functioning of the curtain.
16	Shade Net	Use UV stabilized Aluminate of 50% shade factor with motor operated mechanism for expanding and retracting. Size of net should be equal to the floor area of greenhouse.
17	Drip Irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, By-pass Assembly, Air Release Valve, NonReturnValve, Throttle Valve, Flush Valve,Venturi Injector

		with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers and misters to be fixed w.r.t design, and water tank and fittings & accessories. Provision for micro sprinklers need be kept for top of the event of the greenhouse (Applicable only BIS standards for all irrigation components as well as water tank).
18	Footpath	1m wide and 10 cm thick footpaths made of cement concrete ratio of 1:2:4 should be provided inside the greenhouse for required intercultural operation.
19	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p><b>Note:</b> In place of curtain wall apron, UV stabilized 200 micron transparent sheet can be used and anchored with zigzag high carbon steel with spring action wire of 2-3 mm diameter using aluminum profile. However, the cost of the apron should be computed on the basis of material used.</p>		
<ul style="list-style-type: none"> <li>Fogging System: suitable as per the crop, consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm<sup>2</sup>, valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3mm/hr.</li> </ul>		



- |                     |                                |                                |
|---------------------|--------------------------------|--------------------------------|
| 1. Main column      | 2. 2 <sup>nd</sup> main column | 3. Bottom cord                 |
| 4. Corridor         | 3. Long arch                   | 6. Small arch                  |
| 7. Top purlin       | 8. Gutter                      | 9. Side purlin                 |
| 10. Corridor purlin | 11. Inset net                  | 12. Apron                      |
| 13. Door            | 14. Bracing                    | 15. UV stabilized Plastic film |
| 16. Cross bracing   | 17. Curtain handle             | 18. Corridor support           |
| 19. Gutter purlin   |                                |                                |

**2. MINIMUM TECHNICAL SPECIFICATIONS OF NET HOUSE(Type-1)**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Descriptions/Specifications</b>
1	Product	Flat roof net house/ Gable roof net house
2	Size	500 sqm/1000 sqm/2000 sqm/4000 sqm/ (Bay size 4 x 4 m for Gable/parabolic roof and 6 x 4 m / 6 m x 6 m for others)
3	Height	4-4.5 m from floor area. If gable roof, the side height should be in between 3 m - 3.5 m and Centre height 4 m - 4.5 m.
4	Structural design	The structural design must withstand wind speed of minimum 130km/hr. and withstand crop load up to 25 kg/m <sup>2</sup> crop load. The structure must have the provision for opening one portion at either side for entries of small tractor/ power tiller for inter- cultural operations. The aerodynamics shape should be preferred to avoid wind load.
5	Structure	Complete structure should be made of galvanized steel tubular pipes or equivalent section of light class conforming Indian Standards IS: 1161-1998, the structural member should be joined with fasteners properly.
6	Columns	60 mm OD, 2.9 mm thick
	Trusses, purlins and hockey	48 mm OD, 2.9 mm thick
	Member for Truss, purlins & others	42 mm OD, 2.6mm thick



7	Entrance room & Door	Two entrance room of size 2.5 m x 2.5 m x 2.5 m(L x W x H) made of GI square pipe size 38mm x 38 mm having minimum wall thickness 2.6 mm or Aluminum profile need to be provided and covered with UV stabilized net. Two hinge lockable doors of size 2.5m width & 2.5m height double leaf made in plastic/FRP sheets mounted in suitable strong frame.
8	Cladding material	UV stabilized shade net having 50 % shading factors having minimum weight of 70-80 GSM. The selection of shade net colour depends on the selection of crops. For insect net house GSM should be minimum 120, of 40-50 mesh size insect net, may be used to cover the structure.
9	Fixing of cladding materials	All ends/joints of net house to be fixed with two way aluminum profile with suitable locking arrangement such as zigzag high carbon steel with spring action wire of 2-3mm diameter. Wooden batons or PVC grippers must not be used.
10	Civil work	Depth of foundation need be kept at 60 mm or more depending upon soil type and prevailing wind conditions. GI pipes of 48 mm light class conforming to Indian Standards IS: 1161-1998 or equivalent sections should be grouted in cement concrete mixture with 1:2:4 ratios.
11	Floor	-
12	Plinth	1 foot plinth protection around the structure.

13	Drip irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, Bypass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed with respect to design and water tank and fittings & accessories (applicable BIS standards for all irrigation components as well as water tank).
14	Footpath	1m wide and 10 cm thick footpaths made of cement concrete ratio of 1:2:4 should be provided inside the greenhouse for required intercultural operation.
15	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).

- **Note:** Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm<sup>2</sup>, valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3mm/hr.

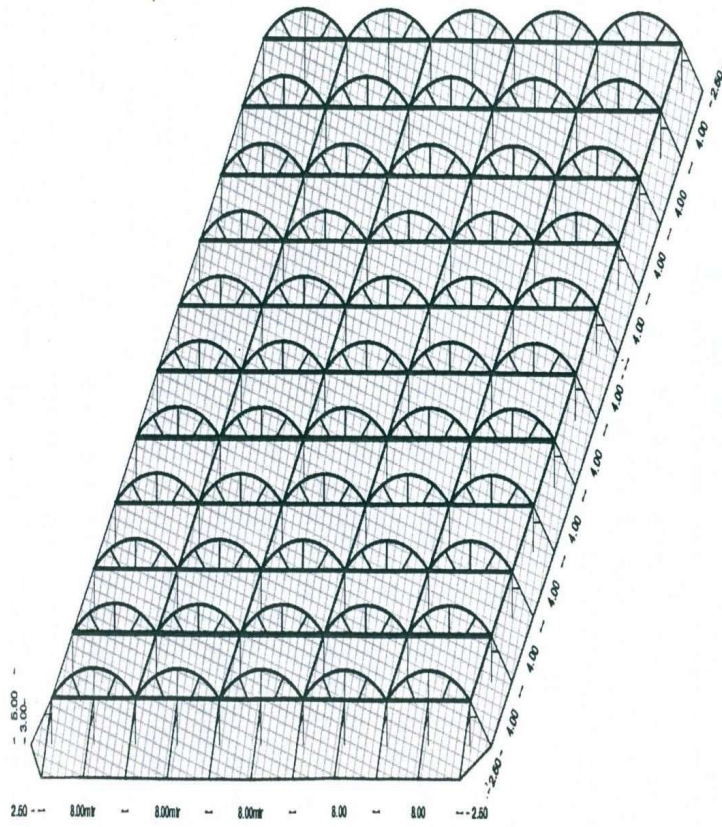
**3. MINIMUM TECHNICAL SPECIFICATIONS OF NET HOUSE (Type-2)- 2mm thickness of structural members**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Descriptions/Specifications</b>
1	Product	Flat roof net house/Gable roof net house
2	Size	500 sqm./1000 sqm/2000sqm/4000sqm (Bay size 4 x 4 mforGable/parabolic roof and 6 x 4 m / 6 m x 6 m for others)
3	Height	4-4.5 m from floor area. If gable roof, the side height should be in between 3 m - 3.5 m and Centre height 4 m - 4.5 m.
4	Structural design	The structural design must withstand wind speed of minimum 130 km/hr. and withstand crop load up to 25 kg/m <sup>2</sup> crop load. The structure must have the provision for opening one portion at either side for entryof small tractor/ power tiller for inter-cultural operations. Anaerodynamic shape shouldbe preferredto avoid wind load.
5	Structure	Complete structure should be made of galvanized steel tubular pipes or equivalent section of light class conforming Indian Standards IS: 1161-1998.The structural membersshould bejoinedwith fasteners properly.
6	Columns	60 mm OD, 2 mm thick
	Trusses, purlins and hockey	48 mm OD, 2 mm thick
	Member for Truss, purlins & others	42 mm OD, 2 mm thick

7	Entrance room & Door	Two entrance room of size 2.5 m x 2.5 m x 2.5 m(L x W x H) made of GI square pipe size 38mm x 38 mm having minimum wall thickness 2.6 mm or Aluminum profile need to be provided and covered with UV stabilized net. Two hinge lockable doors of size 2.5m width & 2.5m height double leaf made in plastic/FRP sheets mounted in suitable strong frame.
8	Cladding material	UV stabilized shade net having 50 % shading factors having minimum wt. of 70-80 GSM. The selection of shade net colour depends on the selection of crops. For insect net house GSM should be minimum 120, of 40-50 mesh size insect net, may be used to cover the structure.
9	Fixing of cladding materials	All ends/joints of net house to be fixed with two way aluminum profile with suitable locking arrangement such as zigzag high carbon steel with spring action wire of 2-3mm diameter. Wooden batons or PVC grippers must not be used.
10	Civil work	Depth of foundation need be kept at 60 mm or more depending upon soil type and prevailing wind conditions. GI pipes of 48 mm light class conforming to Indian Standards IS: 1161-1998 or equivalent sections should be grouted in cement concrete mixture with 1:2:4 ratio.
11	Floor	-

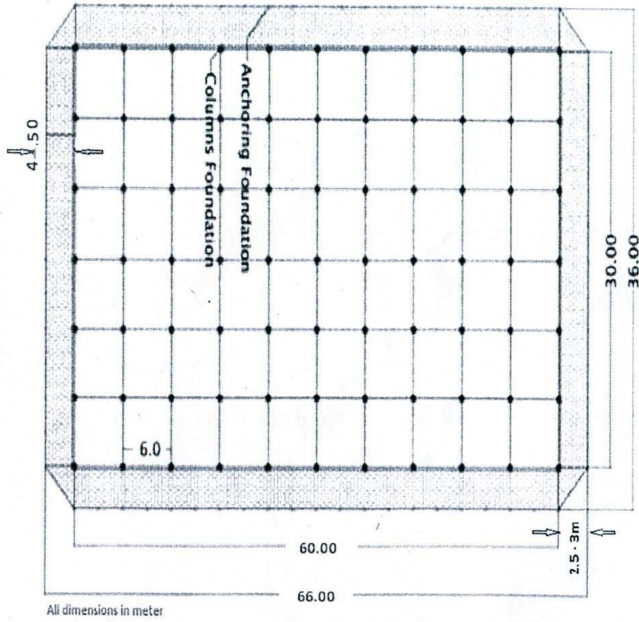
12	Plinth	1 feet plinth protection around the structure
13	Drip irrigation System with fogging & misting facility	Drip irrigation system inside greenhouse need to be selected based on crop spacing along with fogging and misting facilities. The suggested bill of materials must have Sand Filter, Screen Filter, Control Valves, Bypass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed with respect to design and water tank and fittings & accessories (applicable BIS standards for all irrigation components as well as water tank).
14	Footpath	1m wide and 10 cm thick footpaths made of cement concrete ratio of 1:2:4 should be provided inside the greenhouse for required intercultural operation.
15	Testing	All plastic materials used in the greenhouse to be tested by the CIPET or any other testing Institute for quality assurance (if required).
<p>• <b>Note:</b> Fogging System: suitable as per the crop, in consist of four way anti leak fogger 10-28 lph flow rate (working pressure should be mentioned at which it be able to get required particle size, fogger spacing along the lateral and lateral spacing) and particle size 80-100 micron, 16 mm lateral class-3, PVC pipe 6kg/cm<sup>2</sup>, valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensors etc. complete application rate 3mm/hr.</p>		

National Committee on Plasticulture Applications in Horticulture (NCPAH)



Gable/parabolic roof type Shadenet house

National Committee on Plasticulture Applications in Horticulture (NCPAH)



Flat roof type Shadenet house

Note: The suggestive technical specifications can be modified wrt agro- climatic conditions, locations etc. However the cost per square varies with the type of structure.

#### 4. Suggested technical specifications of polytunnels:

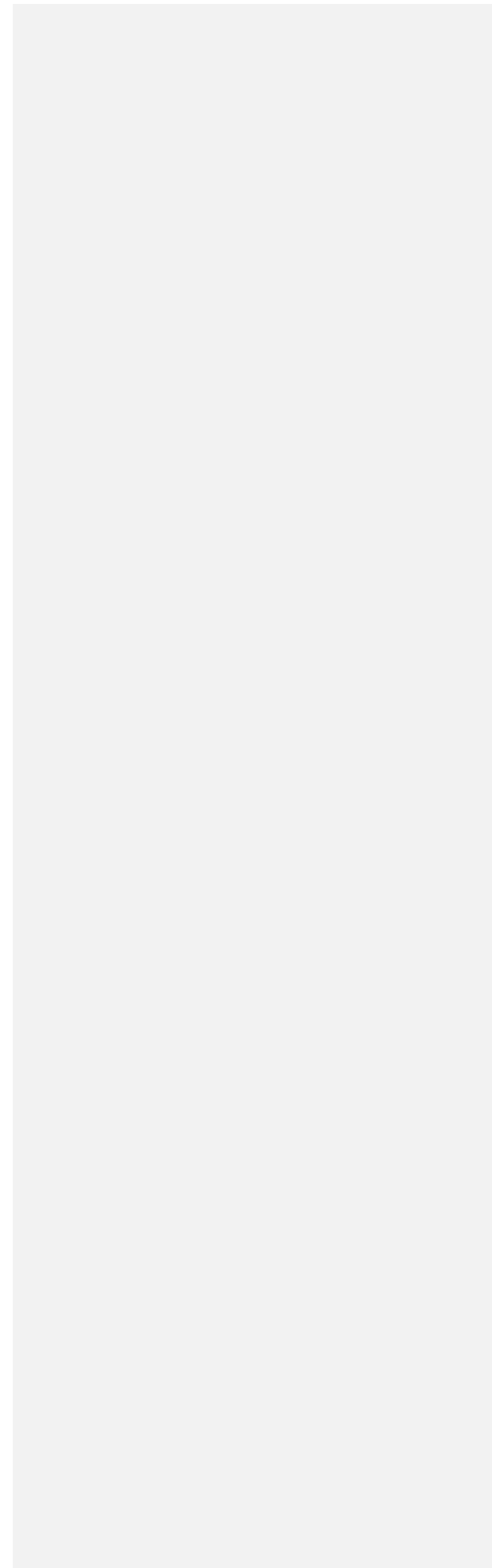
Sr. No.	Item	Indicative Specifications
1	<b>Structures: Structure should withstand to 120 km/hour wind velocity, without weld.</b>	
1.	Main Column	Tubular structure: Size 48 mm [?] OD, Thickness 2.0 mm, Length- 4 m, or Square Closed Pipe structure: Size 40 mm × 40 mm, thickness 2.0 mm, Length- 4 m; made up of hot dip galvanized having minimum 300 GSM zinc galvanizing
2.	Purlins	Tubular structure: Size 33/32 OD, Thickness 2.0 mm, length- 4 m, Channel/Square Closed Pipe Structure: Size 37 mm, thickness 1.8 mm, Length-4 mm made up of hot dip galvanized having minimum 300 GSM Zinc galvanizing
3.	Trusses	Tubular structure: Bottom horizontal 42/43 mm OD/2.0 mm thick, top chords and truss members 32 mm OD 2.0 mm thick, Bracing 25 mm OD/2.0 mm thick.  Channel/Square Closed Pipe Structure: Bottom horizontal 40 mm × 20 mm/2.0 mm thick, top chords, truss & bracing members 37 mm × 37 mm/1.8 mm thick,made up of hot dip galvanized having minimum 300 GSM zinc galvanizing.
4.	Height	Centre height 4.5 meter, dome type structure.
5.	Profile	C type Aluminum/GI profile to fix plastic film to the structure by means of self-tapping screws. Weight of aluminum/GI profile is 200-220/400-450 GSM.



6.	Spring Insert	Zigzag spring insert to fix shade net to Aluminum profile 2.3 mm diameter of spring wire with cold galvanization/enamel coated.
7.	Side wall curtain	1.5 meter and above with rolling flap of poly film 200 micron thick, U.V. stabilized, diffused, thermic, anti-drip and anti-dust made up of multi layer plastics. All the sides, 40-50 mesh UV stabilized white insect net with minimum 120 gsm.
8.	Bottom apron	Woven polythene 160 GSM/200 micron plastic sheet, UV stabilized, 0.50 m height.
9.	Entrance	Double doors, Polycarbonate sheet door with 2 m width and 2 m height and another door of 1 m × 2 m box section frame is embedded inside for the strength.
II	Film & Nets	
1.	Poly film	200 micron thick, U.V. stabilized, diffused, thermic, anti-drip and anti-dust made up of multi layer plastic films conforming to Indian Standards (IS 15827: 2009).
2.	Insect Proof Net	40-50 mesh and white in colour on both sides of ventilation

		portion with gsm 120 and UV stabilized
III.	Trellis System	Support Up to 30 kg/m <sup>2</sup> hanging load. Thick GI wire, 2 mm main wire to the plant and 4 mm cross wire to support the trellis system. The GI Wire shall move parallel as per the design and orientation of structure. The plant support wire should be parallel and above the plantation bed - to and from, 120 cm apart or as per bed width.
IV	Civil Works	
1.	Foundation	Columns area fitted over ground “inserts” and bolted to suitable insert pipe of 3.0 mm thickness. Length of insert 1/10 meter, PCC of CM ratio 1:2:4 of 40 cm × 40 cm × 100 cm sizes & filling the pit with 1:2:4 concrete mixed with appropriate grade cement. It is clarified that in case of round filling the diameter of foundation will be 40cm.
V	Drip Irrigation System with fogging & misting facility	Drip irrigation system under poly tunnel should match design on spacing 30cm x 30 cm along with fogging facilities. Assembly with manifold, PVC pipe 63mm/6kg/cm <sup>2</sup> , PVC pipe 50mm/6kg/cm <sup>2</sup> , PE lateral 16mm, Emitting pipe lateral 16mm - @ 0.30 m spacing, hanging type micro sprinkler nozzle (four-way take off assembly) for very fine water particles (anti leak foggers) to be fixed in PE pipe of diameter 16mm, water tank of capacity 500 liter and fittings & all necessary accessories also 10 HP submersible three phase motor should be provided. Roof Sprinkler System to wash the plastic film with uniform

		overlapping.
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**ANNEXURE-3(B)****LIST OF COMPONENT, INDIAN STANDARDS****AND INDICATIVE SUPPLIER OF MATERIAL**

<b>Sr.</b>	<b>Component</b>	<b>Minimum Standard/specification to be followed</b>	<b>Name of Company</b>
1	GI Pipes	IS 1161:1998  However, 2 mm <b>thickness of pipes can be allowed only for Type-2 structures</b>	<ol style="list-style-type: none"> <li>1. Tata Structures,</li> <li>2. Jindal Pipes Ltd., Mumbai</li> <li>3. Asian Tubes Ltd., Gujarat</li> <li>4. Swastik Pipes Ltd., Ahmedabad</li> <li>5. Surya Roshni Ltd. New Delhi</li> <li>6. Bhusan Power &amp; Steel Ltd., UP.</li> <li>7. APL Apollo Tubes, Gujarat</li> <li>8. JTL Infra Ltd., Delhi</li> <li>9. GI Pipes India Ltd., UP.</li> </ol>
2	Polythene	IS 15827:2009	<ol style="list-style-type: none"> <li>1. Ginegar, Israel</li> <li>2. Politive</li> <li>3. Agripolyane, France</li> <li>4. Plastica Kritis , (mkt'd by SPA Bangalore)</li> <li>5. Hyplast, Belgium</li> <li>6. Essen Multipack Ltd, Rajkot</li> </ol>
3	Shade Net/ Agri Net	IS 16008: 2012	<i>Refer Note-1</i>
4	Insect Net	<i>Refer Note-2</i>	

5	Fixtures		
(I)	Nuts, Bolts & Washer	Galvanised- 120 GSM	Company manufacturing bolts, nuts and washers as per the IS standard
(II)	Clamps	As per the prescribed guideline and the clamps to be used should be galvanized.	GI sheet to be used for clamps should be made from IS standard material to be sourced from: <ol style="list-style-type: none"> <li>1. TATA shaktee, Kolkata</li> <li>2. JSW Steel, Mumbai</li> <li>3. SAIL, New Delhi</li> <li>4. Asian Tubes Ltd, Gujarat</li> <li>5. Bhushan Steel, New Delhi</li> </ol>
(III)	Brackets & cleats	As per the prescribed guideline for design.	
6	Foundation	As per the prescribed guideline for design.	Cement to be sourced from: <ol style="list-style-type: none"> <li>1. Ambuja Cements Ltd.</li> <li>2. Siddhi, Cement Ltd.</li> <li>3. Ultratech Cement Ltd.</li> <li>4. J K Lakshmi,</li> <li>5. Sanghi Cement Ltd.</li> <li>6. Binani Cement Ltd.</li> <li>7. Birla Corporation</li> <li>8. JK cement</li> <li>9. JP cement etc.</li> </ol>

1. *Note-1:* For Shade Net and Agri Net, a majority of the companies are manufacturing the goods as specified in the IS standard, it is learnt that few manufacturers have started process for getting IS standard for their products. At present following Indian companies are having good presence in Domestic market CTM Agrotech, Rishi Tectex, TuflexIndia, Neocorp International Ltd., Essen Multipack Ltd., SatvaAgrishade Net, Kasturi Agro Net, Kwality Nets, Agro net, etc. There are few Importers/Traders who are supplying Shade net/Agri net/Insect net of International Standard in India. The foreign companies such as Polysack, Growell, Meteor Agriculture Nets, etc. are represented by its dealers in the country.

2. *Note-2:*

**Insect Net Specifications**

Mesh	GSM	Yarn Diameter	Knitting Grid	U.V. Life
50 Mesh	130	0.24 mm	50 x 24	5 Yrs
40 Mesh	120	0.24 mm	40 x 24	5 Yrs
25Mesh	130	0.28 mm	25 x 24	5 Yrs

- Variance (+-) range of 3 to 5% in above specs.
- Use of Air Circulating Fans is mandatory with 50Mesh InsectNet.

3. *Note-3*

Foreign companies such as Gineagar, Polysack, AgriPolyane etc. are represented by its dealers in the country. For Polythene, majority of the companies are manufacturing the goods as specified in the IS standard, it is learnt that few manufacturers have started process for getting IS standard for their products.

**ANNEXURE-4(A)**

**FORMAT FOR NUMBER OF GREENHOUSE/NET HOUSE/POLY  
HOUSE/POLY TUNNEL WORK COMPLETED IN LAST THREE YEARS  
FOR SUBSIDISED CASES**

**TO WHOEVER IT MAY CONCERN**

This is to certify that M/s \_\_\_\_\_ has executed  
greenhouse/nethouse/polyhouse/polytunnel projects in the State of \_\_\_\_\_ as  
follows:

<b>Project Executed ( in Nos.)</b>								
<b>Year</b>	<b>Greenhouse (1)</b>	<b>Greenhouse (2)</b>	<b>Net house (1)</b>	<b>Net house (2)</b>	<b>Poly House (1)</b>	<b>Poly House (2)</b>	<b>Poly Tunnel (1)</b>	<b>Poly Tunnel (2)</b>
2018-19								
2019-20								
2020-21								

**Note:**

**(1.) Name of Beneficiary for whom the Project is executed in the State.**

**(2) Area of Project**

**Agency has to submit separately for each state where work is executed.**

**Name of Authority of State Nodal Agency:**

**ANNEXURE-4(B)**

**CA CERTIFICATE FORMAT FOR  
NUMBER OF GREENHOUSE/NET HOUSE/POLY HOUSE/POLY TUNNEL  
WORK COMPLETED IN LAST THREE YEARS FOR NON-SUBSIDISED  
CASES**

**TO WHOEVER IT MAY CONCERN**

This is to certify that M/s \_\_\_\_\_ has executed  
greenhouse/nethouse/polyhouse/polytunnel projects in the State of \_\_\_\_\_ as  
follows:

<b>Project Executed (in Nos.)</b>				
<b>Year</b>	<b>Greenhouse (1)</b>	<b>Net house (1)</b>	<b>Poly House (1)</b>	<b>Poly Tunnel (1)</b>
2018-19				
2019-20				
2020-21				

**Note:** No. of projects executed yearwise



**ANNEXURE-5 (A)**

**PRICE OFFER FOR DIFFERENT TYPE AND SIZE OF STRUCTURES AS PER  
ANNEXURE -3(A), 3(B) and 3(C)**

**EOI Notice No.:262/WBSFPHDCL/1770/2020-21      Date: 19.02.2021**

**To:**

The Managing Director

West Bengal State Food Processing & Horticulture Development Corporation Limited

Benfish Tower, Kolkata – 700 091

**Dear Sir:**

I/ We hereby offer best price to the farmer for construction of poly house, Net house, Polythene, Net, Fogger & Misting system and MI system as per the Terms of Reference given in this EOI Document. The rates are quoted in the prescribed format given below:

**(Amount in Rs. lakh)**

<b>Sr.</b>	<b>Particular</b>	<b>500 Sqmtr</b>	<b>1000 Sqmtr</b>	<b>2000 Sqmtr</b>	<b>4000 Sqmtr</b>
<b>1</b>	<b>Greenhouse – Naturally Ventilated (Type-1)</b>				
(a)	Structure				

(b)	Polythene (polythene along with installation mechanism)				
(c)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				
(d)	Fogging System				
(e)	Misting System				
(f)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				
<b>2</b>	<b>Net house with Gable roof (Type-1)</b>	<b>500 Sqmtr</b>	<b>1000 Sqmtr</b>	<b>2000 Sqmtr</b>	<b>4000 Sqmtr</b>
(a)	Structure				
(b)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				
(c)	Fogging system				

(d)	Misting system				
(e)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				
<b>3</b>	<b>Net house with Flat roof (Type-1)</b>	<b>500 Sqmtr</b>	<b>1000 Sqmtr</b>	<b>2000 Sqmtr</b>	<b>4000 Sqmtr</b>
(a)	Structure				
(b)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				
(c)	Fogging system				
(d)	Misting system				
(e)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				
<b>4</b>	<b>Greenhouse – Naturally Ventilated (Type-2)</b>	<b>500 Sqmtr</b>	<b>1000 Sqmtr</b>	<b>2000 Sqmtr</b>	<b>4000 Sqmtr</b>
(a)	Structure				

(b)	Polythene (polythene along with installation mechanism)				
(c)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				
(d)	Fogging System				
(e)	Misting System				
(f)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				

5	Net house with Gable roof (Type-2)	500 Sqmtr	1000 Sqmtr	2000 Sqmtr	4000 Sqmtr
(a)	Structure				
(b)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				

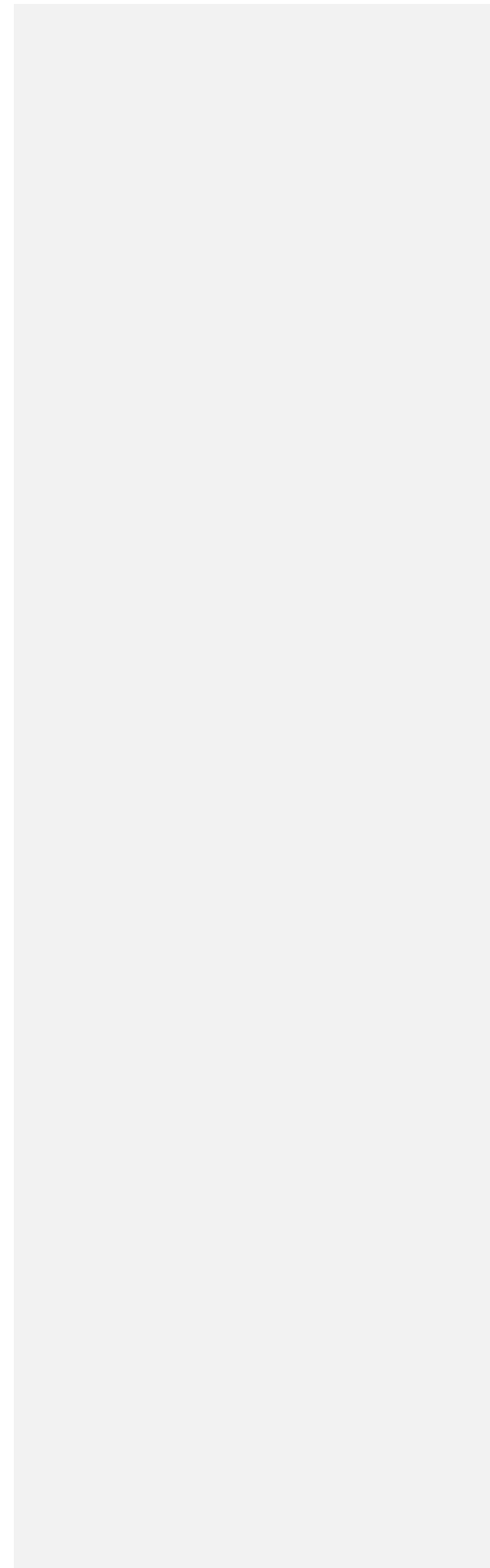
(c)	Fogging system				
(d)	Misting system				
(f)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				
<b>6</b>	<b>Net house with Flat roof (Type-2)</b>	<b>500 Sqmtr</b>	<b>1000 Sqmtr</b>	<b>2000 Sqmtr</b>	<b>4000 Sqmtr</b>
(a)	Structure				
(b)	Shade Net (shade net, curtains, insect screen along with installation mechanism)				
(c)	Fogging system				
(d)	Misting system				
(f)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				
<b>7</b>	<b>Poly Tunnel (Walk in Tunnels )</b>	<b>800 Sqmtr</b>			
(a)	Structure				
(b)	Shade Net (shade				

	net, curtains, insect screen along with installation mechanism)				
(c)	Fogging system				
(d)	Misting system				
(f)	MI system				
(g)	Agronomical Services				
	<b>Total Cost in Rs. Lakhs</b>				

**Note:**

- The price offer quoted is inclusive of all taxes.
- The price offer is inclusive of cost of material, foundation, civil work, fabrication, installation, commissioning, transportation, labour and miscellaneous expenditure upto project completion. The required power and water is to be provided by farmer.
- Structure: The cost of structure includes all item except the sub-items (b), (c), (d), (e), (f) and (g) of Sr.1 to 7 in the above price offer format.

**Signature of Agency**



**ANNEXURE-7**

**FORMAT FOR PERFORMANCE GUARANTEE**

(On Non-Judicial Stamp Paper)

To be stamped according to Stamp Act and to be in the name of the executing Bank

**To:**

The Managing Director

West Bengal State Food Processing & Horticulture Development Corporation Limited

Benfish Tower, Kolkata – 700 091

In consideration of the Managing Director, West Bengal State Food Processing & Horticulture Development Corporation Limited, having its registered office at 6<sup>th</sup> Floor, Benfish Tower, Sector-V, Salt Lake, Kolkata – 700 091 (hereinafter called the “Authority” which expression shall unless repugnant to the subject or context include its administrators

successors and assigns) having agreed under the terms and conditions of the Award Letter bearing No\_

dated \_\_\_\_\_ issued by the Authority, which has been unequivocally accepted by

the Agency (refer NOTE below) work of

\_\_\_\_\_ (hereinafter called the said Contract) to accept a Deed of Guarantee as herein

provided for Rs. \_\_\_\_\_ (Rupees

\_\_\_\_\_ only) from a Bank, in lieu of the security deposit to be made by the

Agency or in lieu of the deduction to be made from the Agency’s bill, for the due

fulfillment by the said Agency of the terms and conditions contained in the same Contract. We

\_\_\_\_\_ the

\_\_\_\_\_ (hereinafter referred to be "the said Bank" and having our registered office at \_\_\_\_\_ do hereby undertake and agree to indemnify and keep indemnified to the Authority from time to time to the extent of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) against any loss or damage, costs charges and expenses misused to or suffered by or that may be caused to or suffered by the Authority by reason of any breach or breaches by the agency and to unconditionally pay the amount claimed by the Authority on demand and without demand to the extent aforesaid. We,

\_\_\_\_\_ Bank, further agree that the Authority shall be the sole judge of and as to whether the said Agency has committed any breach or breaches of any of the terms and conditions of the said Contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Authority on account thereof and the decision of the Authority that the said Agency has committed such breach or breaches and as to the amount or amounts of loss, damage, costs charges and expenses caused to or suffered by or that may be caused to or suffered by the Authority from time to time shall be final and binding onus.

1) We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract and till all the dues of the Authority under the said Contract or by virtue of any of the terms and conditions governing the said Contract have been fully paid and its claims satisfied or discharged and till the owner certifies that the terms and conditions of the said Contract have been fully and properly carried out by the Agency and accordingly discharges this Guarantee subject, however, that the Authority shall have no claim under the Guarantee after 180 (One Hundred Eighty) days from the date of expiry of the contract period.



- 2) The Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity, from time to time to vary any of the terms and conditions of the said contract or to extend time of performance by the said Agency or to postpone for any time and from time to time any of the powers exercisable by it against the said Agency and either to enforce or forbear from enforcing any of the terms and conditions governing the said contract or securities available to Authority and the said Bank shall not be released from its liability under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the said Agency or any other forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Agency or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so releasing the Bank from its such liability.
- 3) It shall not be necessary for the Authority to take legal action against the Agency before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which the Authority may have obtained or obtain from the Agency shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealised.
- 4) We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Authority in writing and agree that any change in the Constitution of the said Agency or the said Bank shall not discharge our liability hereunder. If any further extension of this Guarantee is required the same shall be extended to such required periods on receiving instructions from M/s. on

whose behalf this guarantee is issued.

For and on behalf of (the bank)

Signature\_\_\_\_\_

Name&Designation

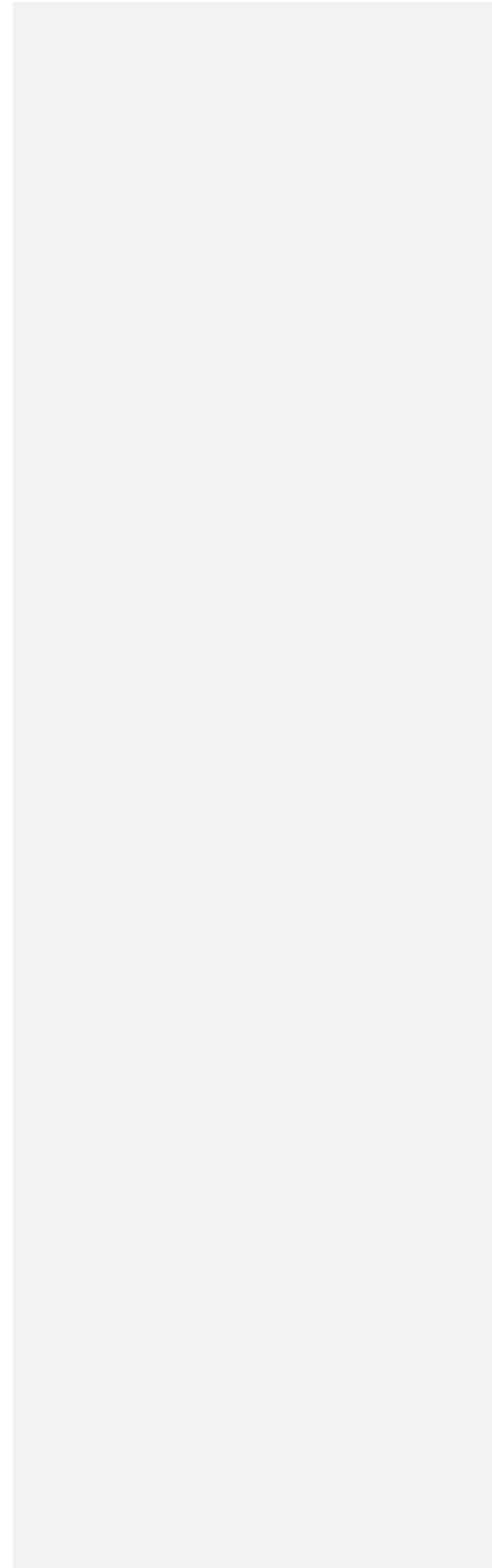
\_\_\_\_\_A

uthorisationNo.

Date and Place

Bank Seal

The above guarantee is accepted by the Authority.



**NOTES**

**FOR PARTNERSHIP CONCERNS**

M/s. \_\_\_\_\_ a partnership firm with its office \_\_\_\_\_ (hereinafter called “the said Agency” which expression shall unless the context requires otherwise include their heirs, executors, administrators and legal representatives); the name of their partners being

- 1) Shri \_\_\_\_\_ S/o
- 2) Shri \_\_\_\_\_ S/o

**FOR COMPANIES**

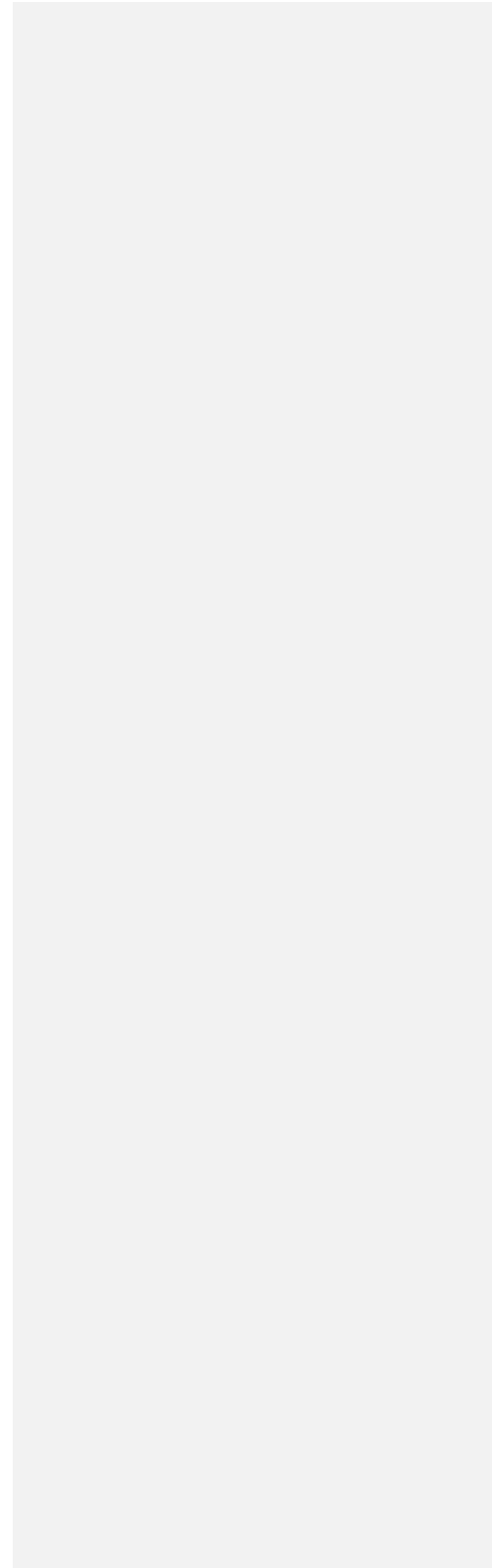
M/s. \_\_\_\_\_ a company registered under the Companies Act 1956 and having its registered office in the State of \_\_\_\_\_ (hereinafter called “the said Agency” which expression shall unless the context requires otherwise include its administrators, successors and assigns).

**FOR TRUST**

M/s. \_\_\_\_\_ a company registered under the Bombay Public Trust Act 1850 and having its registered office in the State of \_\_\_\_\_ (hereinafter called “the said Agency” which expression shall unless the context requires otherwise include its administrators, successors and assigns).

FOR SOCIETIES

M/s. \_\_\_\_\_ a company registered under the Societies Registration Act, 1860 and having its registered office in the State of \_\_\_\_\_ (hereinafter called "the said Agency" which expression shall unless the context requires otherwise include its administrators, successors and assigns)



**ANNEXURE – 8**

**PROFORMA OF GENERAL POWER OF ATTORNEY**

(To be signed and executed on non- judicial Stamp Paper of Rs. 10/-)

Be it known all to whom it concern that:

1. Shri/Smt \_\_\_\_\_ S/O \_\_\_\_\_  
Residingat \_\_\_\_\_
  
2. Shri/Smt \_\_\_\_\_ S/O \_\_\_\_\_  
Residingat \_\_\_\_\_
  
3. Shri/Smt \_\_\_\_\_ S/O \_\_\_\_\_  
Residingat \_\_\_\_\_

I/ We all the Partners/ Directors/ Board members/ trustees/ Executive council members/ Leaders of M/S \_\_\_\_\_ having its registered officeat

\_\_\_\_\_ Herebyappoint Sri \_\_\_\_\_ S/O \_\_\_\_\_  
residingat

\_\_\_\_\_ as my/our attorney to act my/our name and on behalf and sign and execute all Documents/ Agreements binding the firm for all contractual obligations (including reference of cases to arbitrators) arising out of contracts to be entered into by the company/ Corporation/ society/ trust/ firm with theOfficeof .....(Authority),  
KrishiBhavan, Sector-10-A, Gandhinagar -382010 in connection with its EOI no.  
\_\_\_\_\_ dated \_\_\_\_\_

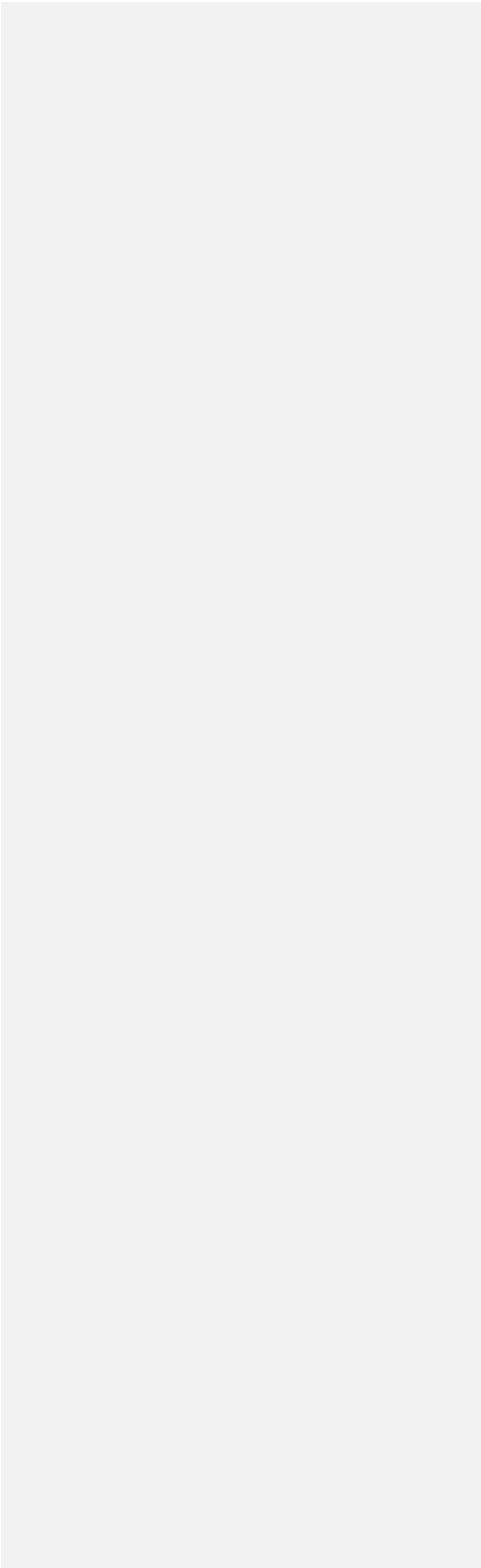
For \_\_\_\_\_ due for opening on \_\_\_\_\_.

In short, he is fully authorized to do all, each and every thing requisite for the above purpose concerning M/s \_\_\_\_\_ and I/We hereby agree to confirm and ratify his all and every act of this or any documents executed by my/ our said Attorney within the scope of the authority hereby conferred on him including references of cases to arbitration and the same shall be binding on me/ us and my/ our company/ Corporation/ society/ trust/ firm as if the same were executed by me/ us individually or jointly.

Witness (With address)

Signature of the Partners/ Directors/ Board  
Members Executives/ Trustees/  
Council members

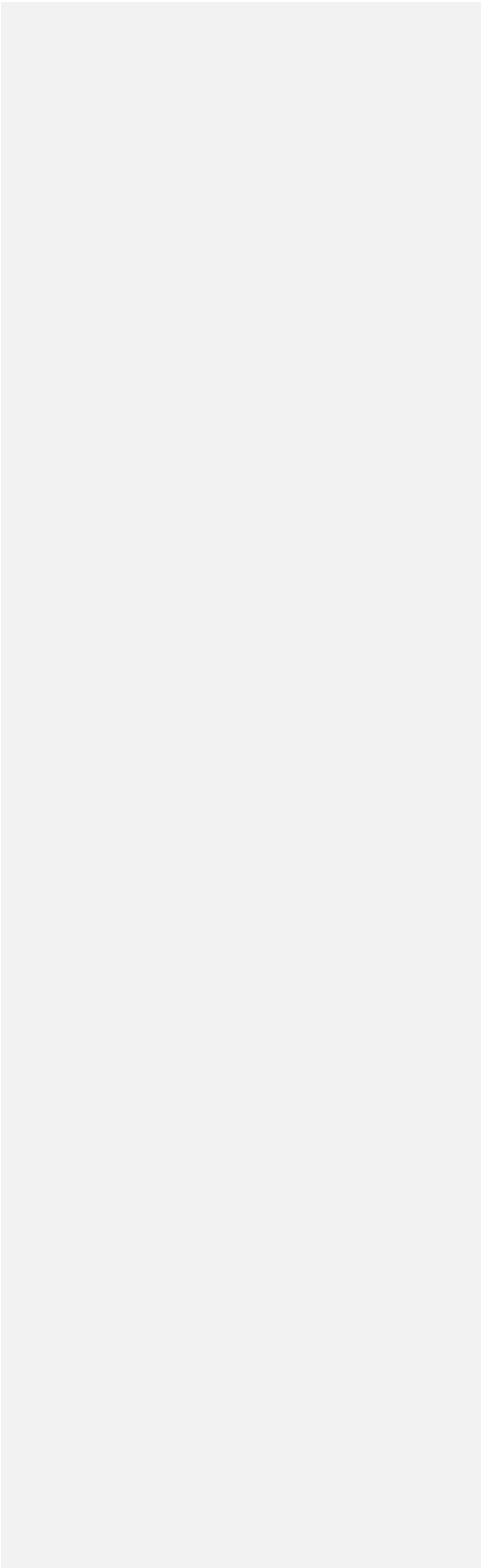
- 1)
- 2)
- 3)



**ANNEXURE-9**

**DETAILS OF COMPETENT PERSONNEL**

<b>Sr</b>	<b>Name of Person</b>	<b>Qualification</b>	<b>Exp. in years in providing agronomical services</b>	<b>Contact No.</b>	<b>Signature</b>
1					



**ANNEXURE-10**

**Draft Format of Work Order To Be Given To Empanelled Agency By Farmer**

**To,**

**M/s** \_\_\_\_\_

\_\_\_\_\_

**Sub:** Work Order for Construction of Greenhouse/Polyhouse/Net house on turnkey basis along with Agronomical services for three years

- Ref: 1. The List of Empanelment published Vide Directorate of Horticulture Letter No.----- --.
2. Scope of Work and Terms and Condition of the Empanelment.
3. Your visit to the site Dated-----
- 1 You offer Dated ----- for construction of Greenhouse/Net house/ Poly house along with the quotation submitted on the basis of price structure of empanelment.



**Dear Sir:**

In reference to the above herewith I am confirming and placing an order for construction of greenhouse/poly house /net house at my farm located at Survey no., Village\_\_\_\_\_, Block\_\_\_\_\_, Dist.\_\_\_\_\_, West Bengal. The other details are givenbelow:

<b>Sr. No.</b>	<b>Particular</b>	
1	Name of Farmer	
2	Contact Address:	
3	Contact Nos:	
4	Category	
5	Type/Category of Net House /PolyHouse/Poly Tunnel	
6	Area ofNet House / Poly House/Poly Tunnel	
7	Name of Crops proposed.	
8	Required Documents as attached	
9	Other specific Issues	

**Price and Payment Condition:**

<b>Sr</b>	<b>Item Name</b>	<b>Total Price (Amt. in Rs.)</b>	<b>Total Price as per Empanelment (Amt. in Rs.)</b>	<b>Remarks</b>
1	Structure			
2	Polythene			
3	Net			
4	Fogging/Misting System			
5	MI system			
6	Agronomical Services			
	<b>Total</b>			

The other terms and condition will remain as per the terms and condition of your empanelment.

Thanking you,

(\_\_\_\_\_)

Name of beneficiary \_\_\_\_\_

Address \_\_\_\_\_

Mobile: \_\_\_\_\_

**ANNEXURE-11**

TO WHOM SO EVER IT MAY CONCERN

**CHARTERED ACCOUNTANT CERTIFICATE**

On the basis of verification of books of accountants and other documents produced before us and maintained by the Company, we certify that M/s

\_\_\_\_\_ is engaged in construction of greenhouse/net house/poly house/poly tunnel. This is to certify that they have turn over from construction activities of greenhouse/net house/poly house/poly tunnel as under for the last 3years.

<b>Sr. No</b>	<b>Financial Year</b>	<b>Turnover (in Rs. Lakhs)</b>
1	2018-19	
2	2019-20	
3	2020-21	
	Avg. of above	