

**National Institute of Post Harvest Technology's
Horticulture Training Center, Talegaon Dabhade Dist. Pune**

**Model
Entrepreneurship and Leadership
Development Programme for Horticulture
Entrepreneurs
Desirous of applying to Schemes of
National Horticulture Board**

Crop / Activity	Protected cultivation of Flowers
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2019-20

<i>Become Entrepreneur</i>	
	<i>Lead Change and Innovation</i>
<i>Be creative</i>	
	<i>Lead Profits</i>

NATIONAL INSTITUTE OF POST HARVEST TECHNOLOGY (NIPHT),

S. No. 398-400, Old Pune- Mumbai Highway, Next to CRPF Campus,

TALEGAON DABHADE, TAL. MAVAL, DIST. PUNE

Ph. No.(02114) – 255480 /255481, Mobile No. 9422030775

Email: htc_td@yahoo.co.in, website: www.nipht.org

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Training Programme Name	Entrepreneurship and Leadership Development Programme for Horticulture for Protected cultivation of Flowers - Rose, Carnation, Gerbera, , Anthurium, Lilium, Chrysanthymum & Orchids (Dendrobium / Cymbidium etc) Crops
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Introduction: Indian floriculture market was worth Rs 130 billion in year 2017 it has been projected to reach 394 billion by 2023 at CAGR of 20% during 2018-2023. GOI has identified as sunrise industry and accorded it 100% export oriented status. Owing to steady increase in demand commercial floriculture has emerged as Hi-Tech activity taking place under controlled climatic conditions inside greenhouse. The liberalization of industrial and trade policies paved the way for development of export oriented production of cut flowers. Floriculture crops like Rose, Carnation, Gerbera, Anthurium, Lilium, Chrysanthymum & Orchids (Dendrobium/ Cymbidium etc) etc are grown in greenhouses. Total flower production include 2392000 MT from 306000 Ha during 2016-2017.

National Horticulture Board, an autonomous organisation under the Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, Government of India has been promoting and developing commercial horticulture in the country since 1984. Appreciating both the challenges and prospects of commercial horticulture, so as to mitigate constraints and risks and maximise benefits and net income, NHB has taken a number of initiatives viz., Model Detail Project Reports, conducting both awareness and technical workshops and simplification of scheme implementation process. One another measure taken up is encouraging farmers, entrepreneurs and applicants desirous of availing benefit under its schemes to have requisite entrepreneurship and leadership by undergoing a 06 days training programme at one of the best training institutes recognised by it.

Rationale for the Training: NHB projects are credit linked and back ended and are capital intensive running from several lakhs to several crores. In addition these involve good documentation and timebound activities on the part of promoter, banker and other stakeholders. So endeavour should be to ensure that the project is successful by all means be addressing all possible risks. Over the years it has been observed by NHB that most of the promoters of NHB projects are not having the required understanding of scheme documentation, timebound activities and lack knowledge and skills of handling the project themselves and thus become subjected to vagaries of others ignorance and omissions and commissions. The result is a number of projects have failed or became ineligible for subsidy consideration. Thus so as to rule out any these omissions and commissions and risks, NHB has made it mandatory for every applicant to undergo a 06 days training programme at one of the NHB recognised /approved institution, with a goal of zero rejection of a project for which IPA is issued.

Importance of Project: Crop / Activity: Global/National/State and role in horticulture development

Name of Activity
Protected cultivation of Flowers- Rose, Carnation, Gerbera, , Anthurium, Lilium, Chrysanthymum & Orchids (Dendrobium/ Cymbidium etc) Crops

Profile of the Institute:

National Institute of Post Harvest Technology's Horticulture Training Center, TalegaonDabhade Dist. Pune

The Maharashtra State Agricultural Marketing Board, Pune has established a full fledged Post Harvest Technological Institute in the year 1993 and subsequently got registered as Non Government Organization (NGO) under the Society Act, 1860 on 10.12.1998 and as a Trust under the Trust Act, 1950 on 12.1.1999. to address the post harvest issues facing the farming community. Since its inception, the institute has been continuously engaged in carrying out practical and applied training, research and technology development work. Under the NIPHT, a specialized Horticulture Training Center (HTC) has been set up with financial support from MSAMB and the Netherlands Development Finance Company of the Netherlands Government along with technical support from the Practical Training Center Plus (PTC+) of the Netherlands. HTC is presently engaged in conducting short duration practical training programs of one week in high-tech horticulture.

AIM AND OBJECT OF NIPHT

- The aim of the institute is to escort relevant post harvest technology from lab to land for value addition.
- The main object of the institute is to develop a core competence for lab to land activities relating to agriculture in general and agricultural marketing in particular.

HORTICULTURE TRAINING CENTER -“First of its kind in India & Asia”

THE GENESIS:

There has been a paradigm shift in the sector of protected cultivation of high-value flowers and vegetables with advent of small and marginal farmers taking active participation in horticulture, which was earlier considered to be a forte of Corporate Houses.

Considering the newly introduced technology of protected cultivation in India there was a growing need to meet the demand for organized practical training in the field of horticulture. Anticipating this prerequisite, Maharashtra State Agricultural Marketing Board (MSAMB), the visionary organization, was convinced that the only way through which the Indian produce will gain global acclamation and acceptance would be by providing the best knowledge, practice, and technology to the farming community.

This urge led to a synergy between MSAMB, Pune and Practical Training Center Plus (PTC+) of the Netherlands in forming of a premier institute in India- namely the Horticulture Training Center, a project co-financed by the Netherlands Development Finance Company (FMO), Den Hag, a Government of Netherlands enterprise. HTC is located at a distance of 40 km north of Pune, in the picturesque ambiance of Talegaon-Dabhade town. HTC is providing practical training in the field of protected and open field cultivation of flowers, vegetable, and fruit crops, round the year making it the only one of its kind of institute in Asia, which is well equipped with latest cutting-edge technology, infrastructure and trained faculty to provide such specialized practical training. Other customized training program in the field of organic farming and standardization of cultivation practices of aromatic/medicinal plants will also be offered in the near future.

MISSION:

To provide cutting edge technology, sophisticated hi-tech farming systems and most appropriate and timely intelligence through state-of the-art training and information supply.

VISION:

To create sophisticated farm community through advanced technology training and to make the farmer self-reliant, globally recognized, and a vital player in the world market.

1. Competent Faculty with requisite qualifications .

SN	Name of Faculty	Designation	Qualification	Expertise	Experience in years
1	Mr. Sanjay Dashrath Parade	Manager	M. Sc (Agri), MBA	Greenhouse/Shade net house Construction, Crop protection, Irrigation and Fertigation, Flower Cultivation	25 years Professional and Teaching Experience in the field of Protective Cultivation
2	Mr. Ravindra Namdeo Deshmukh	Manager	B. Sc (Agri) DBM	Greenhouse/Shade net house Construction, Crop protection, Irrigation and Fertigation, Vegetable Cultivation, Flower Cultivation	25 years Professional and Teaching Experience in the field of Protective Cultivation
3	Mr. Vishwas Vishnu Jadhav	Manager	B. Sc (Agri)	Greenhouse/Shade net house Construction,	19 years Professional and Teaching
				Crop protection, Irrigation and Fertigation, Post Harvest and Marketing Flower Cultivation	Experience in the field of Protective Cultivation
4	Mr. Sampatrao Subrao Yadav	Asst. Manager	M. Sc (Agri)	Crop protection, post harvest and Marketing	16 years Professional & Teaching Experience in the field of Protective Cultivation
5	Mr. Santosh Madhukar Doiefode	Asst. Manager	B. Sc (Horti)	Vegetable Cultivation, Irrigation and Fertigation, Soil sterilisation and Bed Preparation	16 years Professional & Teaching Experience in the field of Protective Cultivation
6	Mr. Amol Ganpat Bhong	Asst. Manager	B. Sc (Horti), MBA	Flower Cultivation, Post harvest and Marketing, Landscaping	12 years Professional and Teaching Experience in the field of protective cultivation

7	Mr.YatinVasantGundekar	Asst. Manager	B. Sc (Horti),	Greenhouse Constuction, Soil sterilisation and Bed Preparation	8 years Professional and Teaching Experience in the field of protective cultivation
8	Mr.ShashikantBapura oBharane	Asst. Manager	M. Sc (Agri)	Soil sterilisation and Bed Preparation, Irrigation	8 years Professional and Teaching Experience in the field of protective cultivation

2) Basic infrastructure and collaboration to be in place

INFRASTRUCTURE:

NIPHT is spread out on a picturesque 50 acre campus with landscaped gardens and elegant buildings. Our stimulating campus and its soothing environment provides an ideal setting for an enriching and a rewarding experience. The state of the art facilities at the institute are:

- 1. Administrative Building** – The administrative building of area 7317 sq. ft. is available which comprises of the offices of the Director, Principal and faculty members with administration and account department and reception counter.

2. **Classrooms and Demonstration Halls** – Unique design facilitating active interaction between the „trainer“ and the „trainee“. Well equipped with modern Audio- Visual Aids, Operative Study Models, display boards and educationalequipmentsincluding PPT facility . There are eight classrooms available. New Classroom building is constructed which comprising of 4 classrooms, computer center and conference room
3. **Laboratory Complex-** For scaling up of operations in case of newly developed technologies in laboratories of agricultural universities across the state and from around the country, the laboratory complex comprising of soil and water testing laboratory, plant tissue analysis lab., tissue culture laboratory with practical rooms.
4. **Greenhouses** – Complete range of protective structures with flower and vegetable crops demonstrating the differences in crop growth, quality and yield. There are following 9 different types of polyhouses having the total area of about 15500 Sq. m.
 - Fully automated, computer controlled Dutch type greenhouses (4000 sqmt)
 - Naturally ventilated type greenhouses (9000 sq mt) crops – rose/gerbera/carnation ,
chrysanthemum
 - Glasshouse- Fan and Pad Type (500 sq mt)- aeroponic cultivation
 - Poly-tunnel (300 sq mt) - vegetables
 - Shade net house(2000 sq mt)- vegetables/nursery
 - Nursery shadenet house (480 sq mt)- ornamental nursery
5. **Library** – The state of art library with a digital section comprising a range of computers with internet facility. The library consists of latest issues of national and international books, journals, magazines, etc. There are separate enclosures /cubicles for independent study.
6. **Meteorological Station** - Provides climatological data to the climate control computer required for greenhouse automation. It is housed in utility building.
7. **UtilityBuilding** – This building has the weather station & climate control computer, which also controls the fertigation systems in the greenhouses. It also houses the pack house, cold storage and pre-cooling unit equipped with post harvest equipments such as deleafing, grading machines etc. The building also has irrigation and crop protection classrooms with operative and cut models and exhibition hall cum vase life testing center.
8. **Soil and Water Testing Laboratory** - The laboratory is equipped with latest digital equipments for quick and reliable soil and water analysis. The reports are generated immediately accompanied by appropriate recommendations.
9. **Tissue Culture Lab** - The state of art tissue culture lab having the capacity of 12 lakh plants per annum has been set up. Good quality banana crops are produced in the lab. The production ornamental crops has been planned this year.

10. Hostels and Dinning - Excellent accommodation for ladies and gents in well furnished rooms with a canteen serving Indian, Continental & Oriental cuisine. Total capacity of the hostel is around 260 participants. Computers and internet facility is in process.

11. Plantations - The entire varieties of flowers and vegetables, which can be grown under protected cultivation, are planted at NIPHT. Gerbera, Carnations and Roses are in soil; Capsicum, Tomatoes, Cucumber in soil; Nursery, Ornamental and Potted Plants in shade net.

In the open field horticulture crops like Guava, Mango, Aonla, Coconut, asparagus, heliconia, song of India, hibiscus are planted.

Has collaboration with entrepreneurs and Industry.

- NIPHT works with
 - International level- Lentiz, PTC+, The Netherlands
 - National Level- NIAM, NHB, APEDA, MANAGE, NABARD, ATMA/NHM
 - State level- SHM, YASHADA, VASUNDARA, ATMA, APMC
- Maharashtra State Horticulture Mission has accredited NIPHT-HTC as state level training Institute.
- We have been already empanelled as a training Institute on Hi-tech Horticulture by Ministry of Agriculture, Govt of India.

Willing to provide internships with FPOs/ FPCs/entrepreneurs.

Yes, NIPHT HTC is willing to provide internships with FPOs/ FPCs/entrepreneurs on chargeable basis.

Previous experience:

ACHIVEMENTS OF NIPHT

- Set up Horticulture Training Center- an International Standard training center- a joint venture project between MSAMB and PTC+, Holland, in all respect.
- Starting of Soil and Water Testing Laboratory.
- Training of farmers under the Agri Export Zone in respective AEZ districts.

- Training and Shetakari Melawas at various villages for increasing awareness regarding importance of soil and water testing.
- Preparation of DPR of Export Farming of Potted plants - A High Tech Horticulture Joint Venture between India and Denmark for FILA ROZIL, Pune.
- Preparation of training material for the course of post harvest techniques of various fruits and vegetables as well as grain crops.
- The project proposal of “Maharashtra Centre of Excellence for flowers” is in progress which is training and demonstration activity and commissioned as part of National Action Plan of Indo-Dutch Cooperation Project.
- Up-gradation and Modernization of the tissue culture lab is in progress.
- Turnkey Green House Project erection for various departments of State and Central Govt. Till today 125 projects completed.
- Appraised and Inspected Pre Cooling/Cold Storage/Ripening Chamber/Refer van Projects under MIDH submitted to MSHMPB, Pune. Till today 194 projects were inspected and 207 projects were appraised.

DETAILS OF TRAININGS:

The full fledged training programs at the National Institute of Post Harvest Technology's Horticulture Training Center (HTC) have commenced from October 2003, on regular basis. With a view of creating awareness, developing entrepreneurship and in order to facilitate making a techno commercial decision of venturing under protected cultivation, One/ Two days, four days and one week, ten days, one month training programs are organized by NIPHT. The details of onsite and insight the training programs conducted from October 2003 to March, 2019 are as under:

Duration wise Training Conducted from October 2003 to March, 2019

S.N.	Programs	No. of Programs	No. Trainees
1	1 day	125	7054
2	2 day	46	1830
3	3 day	199	4171
4	1 week(5 days)	936	31002
5	10 days	07	141
6	1 Month	09	225
7	Onsite Co-op Program	02	215
8	Onsite Other State	03	303
9	Mali Training	02	50
	Total	1329	44916

Objectives of Training Programme :

1. Knowledge: Ensure every trainee acquires adequate knowledge and understanding of NHB Scheme Operational guidelines, Annual design and procedure viz.
 - a. Eligibility of applicant including definition of family, and project, the process and steps involved in the scheme implementation, timelines, Scheme cost norms, pattern of assistance etc. Calculation of Eligible Project cost, Eligible components for subsidy, NHB standards, Basic Data Sheet & Protocols to be complied for availing subsidy,; Crop / Project specific Model DPR Template, Terms and conditions of IPA, Do's and Don'ts for Applicants /Banks/NHB officials for IPA ,
 - b. List of documents to be submitted.
 - c. To acquaint with NHB website including registration and modes of online application, operation of online account and contact persons, helpdesk and grievance redressal.
 - d. Subsidy claim process through Bank/FI and list of documents to be submitted along with claim, JIT process, JIT Format, Documentation, Circumstances to request for and consider Re-JIT& Post-JIT process.
 - e. Formats of Agenda and check list used for processing subsidy claim.
 - f. How to expand understanding based on the minutes of meetings of previous IC and PAC available on website. It helps the applicant to understand how decision on subsidy is being made.
 - g. To know and appreciate specific Horticultural commodity / crop economic importance and potential of fresh commodity and processed / value addition commodity; Country and Global scenario and State/UT Scenario.
 - h. To learn / visit success stories / best practices including cluster development / FPOs; interact with successful entrepreneurs; and recognise key factors responsible for success and failure.
2. Personal leadership and skills development
 - a. To explore leadership roles required in horticulture business and realign and recalibrate self with new knowledge, concepts and tools.
 - b. Managing change and innovation and Taking charge and leading strategy.
 - c. To learn/ improve IT/ social media and know how to benefit from Internet and newspapers/media.
 - d. To improve leadership / social skills especially common informed vision, communication, team work, negotiation skills; with an exercise and success story.
3. Selection of cultivar, Technology to be adopted and Production practices for crop intensification and high productivity and ecological sustainability.
 - a. How to select suitable variety/hybrid/cultivar and source quality planting material/ seed based on market demand and sustainability.
 - b. Technology: Protection cultivation Technology-various kinds, customisation based on Agro-climatic condition, crop and pest and diseases profile; familiarisation of components and Mechanisation and Automation.

- c. To know scientific production, harvesting and post-harvesting practices, technology and management and Analyse gap analysis with that of the current practices, technology and management of trainees.
- 4. Harvesting, Post-Harvest Management practices, technologies and Infrastructure
 - a. Time of Harvesting, Moisture level of the produce, post-harvest practices, cleaning, sorting, grading, packing, labelling, pre-cooling, storage and transportation.
 - b. To be aware of Post-harvest and storage practices, protocols and technologies.
 - c. To know required infrastructure- Supply Chain/ Cold Chain and Marketing infrastructure and Gap analysis to the context of trainees.
- 5. Marketing and value chain development
 - a. To know value chain and document current value chain of trainees context.
 - b. To know how to source inputs from reliable and quality sources economically and explore best way / place to sell.
 - c. To know market based production concept; crop planning and preparing crop calendar.
 - d. Analyse market prices of various markets and causes of instability. Document market efficiency and share of grower in consumer price realisation and possible way to minimise price spread.
 - e. To know importance of branding and promotion.
 - f. How to become an Exporter and know the roles of APEDA.
- 6. Supply/ Cold-chain development both for fresh and processed produce
- 7. Cold-chain development both for Export and Domestic Markets
- 8. Producing quality produce: MPS registration will be taken into account Breeders rights
- 9. DPR for Flowers viz Rose, Carnation, Gerbera, Anthurium, Lilium, Chrysanthymum & Orchids (Dendrobium/ Cymbidium etc) and their Project Management including Finance & Credit.
 - a. To empower selection of crop based project based on Agro-climatic/soil/ water suitability, Market, Finance and Technical viability.
 - b. To empower the trainees to prepare Detail Project Report of his/her project. In case it is already prepared with the help of external expert, the trainee is made to understand and critically analyse the same.
 - c. To know about Banks/ Financial Institutions; Loan procedure-how to avail finance/ credit- challenges and prospects. Document difficulties in traineescontext and facilitate in possible solutions on expeditious and easy access to credit.
 - d. To know risks viz., including natural calamities in production and business and their management strategies including insurance schemes.
 - e. To learn about Farm record book keeping.
- 2. Cluster development / Collaborative farming: What is cluster? Essential elements? To know importance of cluster approach,
- 3. Government organisations and Schemes related to Horticulture and laws to be complied.

4. Horticulture Statistics sources including DAC&FW website and State Horticulture Dept. website.
5. Technology and Entrepreneurship

Pedagogy: Training methods / styles are:

- a. Lectures- with two way communication using Audio-visual aids, videos etc.
- b. Group discussion
- c. Panel discussion
- d. Skill practice
- e. Interactive field visits etc.

Outputs expected: (As on the last date of 6 days training)

1. 100% attendance of all Classes prescribed.
2. Daily studying of reading material provided.
3. Successful and timely completion of assignments.
4. A score a minimum of 65 % in final assessment by each trainee.
5. Knowledge: by each of the trainee
 - a. Essential elements of NHB Scheme guidelines, documentation & processes and Do's and Don'ts, understanding DPR, Bank Appraisal and Sanction, identification of risks and vulnerabilities and measures to address the same, Processes and documentation of NHB scheme implementation for successful subsidy release.
 - b. Essential elements of scientific and commercial Production, harvesting, post-harvest, Marketing, Exports etc. in English/Hindi/trainees' language..
 - c. Documentation of analysis of current scenario of trainees context- production, harvest, post-harvest, supply chain, marketing and gap analysis and possible road map.
6. Skills: by each of the trainee
 - a. Curiosity and continuous learning.
 - b. Crop: Modern scientific Cultivation, harvesting, post-harvest, food safety, traceability certification and standards.
 - c. Project: PHM&CC: Modern scientific operations, technology, safety etc.
 - d. Familiarisation of Technology, Standards, Protocols and hands on experience.
 - e. Good understanding of DPR and Project Management:
 - f. A 3 year Strategic action plan: A Year to Year strategy for 3 years to achieve set goal in 3 years- for improved production & productivity with economy, modern harvest, post-harvest practices, infrastructure, marketing and organisational systems for improved incomes.
 - g. Problem solving- to solve existing problem being faced by the trainees.
7. Attitude: developing confidence and leadership to successfully complete NHB project timely as per NHB norms, specifications/standards, protocols etc.
8. Networking with various Government and Non-Government Agencies and mentors.
9. To know various schemes and future useful training programmes across the country.

Outcomes expected (in 18 months)

1. The proposed training completed successfully with right technology and processes complying with all NHB Scheme requirements.
2. Cost of production reduced; crop health improved, productivity increased & losses reduced.
3. Food safety Improved, certification / standards compliance
4. Quality infrastructure created.
5. profits/ net income increased.

Programme in Brief

Training Programme Name	Entrepreneurship and Leadership Development Programme for Horticulture for Protected cultivation of Flowers Rose, Carnation, Gerbera, ,Anthurium, Lilium, Chrysanthymum & Orchids (Dendrobium/ Cymbidium etc)			
Duration	6 working days: 1 Week			
Participant Target Group	Individuals desirous of availing NHB benefit under Scheme No.1 and also for those who want to improve their knowledge and leadership in protected Cut Flower cultivation.			
Training Coordinator with Designation and Address Tel, Mobile and email id	Mr.Vishwas Jadhav Manager- Training and Marketing Mobile No. 9423085894/9422030775 S. No. 398-400, Next to CRPF Campus, Old Pune- Mumbai Highway, Talegaon Dabhade Tal. Maval, Dist. Pune Email id: htc_td@yahoo.co.in			
Languages	English/Hindi			
Training calendar for 2019-20	Month	Last date for Registration	Training reporting dates	Training Dates
	December 2019	12 December 2019	15 December 2019	16 to 21 December 2019
	January 2020	23 January 2020	26 January 2020	27 Jan to 1 Feb. 2020
	February 2020	20 January 2020	23 February 2020	24 to 29 February 2020
	March 2020	19 February 2020	22 March 2020	23 to 28 March 2020
How to Apply	By E mail on htc_td@yahoo.co.in			
Next review/ revision of Training Design	February 2020			
Batch size and cost and Payment system	Batch size	Course Fees	Hostel: Accommodation, Boarding: BF+L+D + Morning Tea + Afternoon Tea	Total cost for 6 days
	15 & above	Rs.1500/day/Participant	Including facility above	Rs.9000/-
	10-15	Rs.1500/day/Participant	Including facility above	Rs.9000/-
	5-10	Rs.1500/day/Participant	Including facility above	Rs.9000/-
	<5	Rs.1500/day/Participant	Including facility above	Rs.9000/-
	Payment system and address: By Cash at the time of training registration			

Enrolment	Is voluntary on the part of trainee and on his/her submission of willingness in writing to undergo training.
Certificate	Upon successful completion of training with 65% marks in final assessment, the candidates are awarded completion certificate with marks.
NHB & HTI Role	<ol style="list-style-type: none"> 1. The training programme is voluntary for any individual or trainee. 2. The cost of training is to be borne by trainee him/herself. 3. The training is not sponsored by NHB nor by any Government. 4. Upon 100% attendance and upon scoring 65% marks is considered as successful completion and then are eligible for training completion certificate. 5. Successful completion of training programme by the applicant and submission of completion certificate is one of the requirement for obtaining In-Principle Approval (IPA). 6. It is compulsory to reside in the hostel/accommodation provided by the institute in the interest of training. 7. The training institute has no say in NHB decision making either in approval or rejection of IPA or sanction or not sanction of Subsidy. 8. Trainees are responsible for their conduct and wellbeing issues 9. NHB has no liability towards IPA and Subsidy release or non-release 10. HTI has no liability towards IPA and Subsidy release or non-release.

Expectations from trainee before the arrival to the Training institute:

1. Study NHB scheme guidelines of all schemes with emphasis on specific component for which application is being/ is made including General conditions, Basic structure, Applicant eligibility, Technical standards, Basic Data sheet and Protocols, Budgetary allocation for his/her state/UT, Guidelines for submitting application, cost of application, various prescribed formats, FAQs, Dos and Don'ts, Agenda and Checklist, List of documents to be submitted both for Pre-IPA and IPA available in NHB website and as received in their online account.
2. Study one's own Detail Project Report along with Model DPR available in NHB website.
3. Visit NHB website and study various services available- especially Scheme guidelines, Model DPRs, Technical Standards, Statistics, NHB interactive, Minutes of meetings (past), Public circulars to the extent possible.
4. Should see him/her self whether he/she is satisfying NHB Scheme requirements.
5. To cooperate with Horticulture Training Institute.
6. To share specific problems/ gaps / barriers in horticulture growth and profits in his area.

Material to be brought by each of trainee:

1. Hardcopy of application already submitted to NHB if any.
2. Hardcopy of DPR already submitted to NHB or prepared if any.
3. Hardcopy of Model NHB DPR if possible.
4. Hardcopy of copy of Dos and Don'ts, Agenda and Checklist, List of documents to be submitted.
5. Hardcopy of applicants' eligibility and General Conditions.

6 Day Training program schedule

Day	Session	Topic	Topic Details	Expert
1	Session 1	Registration and Inauguration	Inauguration of Training programme	Course Coordinator
	Session 2	Soil and Soilless Culture	Soil selection and Media preparation ,Soil Sterilisation and Bed Preparation,soiless culture	NIPHT Faculty
	Session 3	Greenhouse Construction	<ul style="list-style-type: none"> Greenhouse construction -Types of greenhouses, Site selection, Layout, Design &Dimensions. Quality norms of Greenhouse erection materials. Operation & maintenance, automation in Greenhouses. 	NIPHT Faculty
	Session 4	Practical -Greenhouse Construction	<ul style="list-style-type: none"> components of Greenhouses, practical on greenhouse erection 	NIPHT Faculty
2	Session 1	Flower Cultivation	Cultural practices of Rose Cultivation	NIPHT Faculty
	Session 2	Flower Cultivation	Cultural practices of Gerbera, Carnation Cultivation	NIPHT Faculty
	Session 3	Irrigation Management	Irrigation water quality and treatment, critical stages of crop , irrigation schedule	NIPHT Faculty
	Session 4	Irrigation Management	Irrigation system (Drip / foggers/ misters),design ,specifications and maintenance	NIPHT Faculty
3	Session 1	Flower Cultivation	Cultural practices of Anthurium and Orchid(Dendrobium/ Cymbidium) Cultivation	NIPHT Faculty
	Session 2	Flower Cultivation	Cultural practices of Lilium and Chrysanthemum Cultivation	NIPHT Faculty
	Session 3	Pest Management	Management of major pests	NIPHT Faculty
	Session 4	Disease Management	Management of major diseases.	NIPHT Faculty
4	Full day Field Visit		<ul style="list-style-type: none"> Floriculture Park, Ambi and KF Bioplants, Pune 	Couse Coordinator
5	Session 1	Fertigation Management	<ul style="list-style-type: none"> Fertigation-meaning, methods equipments, schedule. Nutrient Management (Macro & Micro) Role of nutrients, deficiency and toxicity symptoms 	NIPHT Faculty
	Session 2	Fertigation Management	Practical on Fertigation equipment, measurement of PH and EC of fertigation Solution and Drain water, preperation of A,B & C	NIPHT Faculty

			tanks, Fertigation in Soil and soilless culture	
	Session 3	Post Harvest Management	<ul style="list-style-type: none"> • Pre harvest care • Harvesting – time, stage & method • Proper technique & do's and don'ts of Harvesting; 	NIPHT Faculty
	Session 4	Post Harvest Management	<ul style="list-style-type: none"> • Post harvest handling practices like deleafing , precooling sorting ,grading bunching ,packaging, storage and transport • Quality standards for export and domestic market • Post harvest solution and value addition in flowers • Packaging material for Export & domestic market and standards • Marketing and Economics 	NIPHT Faculty
6	Session 1	NHM Schemes for protected Cultivation	Govt. Schemes	Resource person from Agril. Department/NIPHT Faculty
	Session 2	NHB Schemes for protected Cultivation	Govt. Schemes	Resource person from NHB, Pune/NIPHT Faculty
	Session 3	Couse Evaluation	Course Evaluation , Question and answers	Course Coordinator
	Session 4	Validation	Feedback/ Validation and certificate Distribution	Course Coordinator

Trainers' Material: to be used for preparing Participants Handbook first in English and then in local language as far as possible.

The following weblinks are illustrative. Training Institute is requested to explore more and the best fit material for the trainees socio-economic condition, crop and enterprise.

S.No	Module	Reading Material	
		For the Trainer	For the trainee
1.	Economic Potential and Specific State/ UTs context and Success stories.	<p>Horticulture Statistics at a glance: http://agricoop.gov.in/statistics/publication-reports</p> <p>World fruit and vegetable map: 2018: Robo Bank https://research.rabobank.com/far/en/sectors/regional-food-agri/world_fruit_map_2018.html</p> <p>APEDA AGRIEXCHANGE: http://agriexchange.apeda.gov.in/</p> <p>ICAR institutions publications on specific crop CII / FICCI/ASSOCHAM/ PHDCC reports</p> <p>http://www.fao.org/docs/eims/upload/210971/global_issues_paper.pdf</p> <p>Success stories: http://agritech.tnau.ac.in/success_stories/sstories_horti_2015.html</p>	
2.	Personal skills development	Internet and youtube	
3.	Selection of cultivar and Production practices for high productivity	<p>ICAR institutions publications on specific crop Package of practices of specific crop (s).</p> <p>e-learning: videos from authentic sources- ICAR/ SAU/SHU/Global Institutions. ICAR e-courses: https://ecourses.icar.gov.in/</p>	
4.	Harvesting, Post-Harvest Management / Infrastructure	<p>Analysis of FPO model for Vegetables https://nccd.gov.in/PDF/Analysis_FPO_model.pdf</p> <p>Doubling of Farmers Income Report: Vol.III and IV http://agricoop.gov.in/doubling-farmers</p>	
5.	Processing / Value Addition	<p>ICAR / Any reputed R&D Institution publications e-learning: videos from authentic sources- ICAR/ SAU/SHU/Global Institutions.</p>	
6.	Supply/ Cold-chain development both for fresh and processed produce	<p>Cold Chain Awareness program https://nccd.gov.in/PDF/Cold-chain%20Awareness%20Booklet.pdf</p> <p>Analysis of NDDB Model for Vegetables https://nccd.gov.in/PDF/Analysis_NDDB_veg_model.pdf</p> <p>All India Cold Chain Infrastructure Capacity : Gap Analysis https://nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf</p>	
7.	Marketing and value chain development	<p>Directorate of Marketing and Inspection website: http://agmarknet.gov.in/</p> <p>Crop specific market information sources</p>	
8.	Maintain quality of produce: Health & Food Safety /	<p>TNAU AgriTech portal on Food Safety: http://agritech.tnau.ac.in/gap_gmp_glp/gap_fresh%20_%20fruits%20&%20veg.html http://agritech.tnau.ac.in/food_safetyindex.html</p>	

	Traceability and Standards	<p>Global Gap: https://www.globalgap.org/uk_en/</p> <p>INDGAP: http://www.qcin.org/CAS/INDGAP/</p> <p>Global gap India facilities: http://agriexchange.apeda.gov.in/Market%20Profile/Market_Intelligence/Annexure_III.pdf</p> <p>Food Traceability in India: http://face-cii.in/sites/default/files/final_report-version_2.pdf</p> <p>FAO International Code of Conduct on Pesticide Management http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/en/</p> <p>TRACEABILITY IN FOOD AND AGRICULTURAL PRODUCTS: ITC, Switzerland publication at http://www.intracen.org/</p> <p>GRASP: Global GAP Risk Assessment on Social Practice The Global Social Compliance Programme GSCP https://www.gscpequivalenceprocess.com/</p>	
9.	Finance, Credit & Farm/ Project & Risk Management	Model DPR Templates for NHB Schemes www.nhb.gov.in	
10.	Cluster development : Collaborative farming/ FPOs/ FPC	<p>NHB Website: Proposed scheme: Horticulture Business Cluster and Supply chain development Programme</p> <p>FAO (2010) Agro-based clusters in developing countries: staying competitive in a globalized economy http://www.fao.org/docrep/012/i1560e/i1560e.pdf</p> <p>World Bank: Agriculture Clusters https://www.innovationpolicyplatform.org/sites/default/files/rdf_imported_documents/Agricultural_Clusters.pdf</p> <p>How Can the Poor Benefit from the Growing Markets for High Value Agricultural Products? FAO / UN Paper https://papers.ssrn.com/sol3/papers.cfm?abstract_id=944027</p> <p>Crop specific Producers Society and company online authentic sources</p>	
11.	Government organisations and Schemes	http://agricoop.gov.in/ http://mofpi.nic.in/ http://apeda.gov.in/ http://nhb.gov.in/ http://coconutboard.nic.in/Scheme.aspx	
12.	Knowledge and Statistics	<p>ICAR Indian Horticulture Magazine: https://icar.org.in/node/9420</p> <p>IIHR: https://iihr.res.in/documentary-video-clips-for-farmers</p> <p>FAO: http://www.fao.org/e-agriculture/stub-28</p>	
13.	Technology and Entrepreneurship	<p>Visit ICAR – Institutions / Directorates/ Bureaux/ NRCs: https://icar.org.in/</p> <p>Innovation in Agriculture: http://www.fao.org/3/CA2460EN/ca2460en.PDF</p> <p>Specific technologies: https://icar.org.in/content/agricultural-technologies</p> <p>e-learning: https://ecourses.icar.gov.in/</p> <p>ICAR Publications: https://krishi.icar.gov.in/jspui/</p> <p>Local University publications</p> <p>Local University success stories</p>	
14.	Protected (/Greenhouse /	National Committee on plasticulture Agriculture with the Horticulture https://www.ncpahindia.com/	

	Shade net / Walk in Tunnel) cultivation:	Agriculture Skill Council of India: Curriculum and Occupational / Qualification standards: http://asci-india.com/National%20Occupation%20Standards.php	
15.	Cold Storage / Cold Chain Development:		

Reading material for the trainee is to be prepared by the Training Institute based on trainers' reading material in local language either in brief or in detail based on the module and need. May share booklets or print out of detailed scientific package of practices recommended locally.

Success Stories: Illustrative

IARI	http://iari.res.in/index.php?option=com_content&view=article&id=539&Itemid=1516 http://www.iari.res.in/files/Pusa_Hydrogel.pdf
IIHR	https://iihr.res.in/success-stories
CISH	http://www.cish.res.in/success_story.php
CCRI Nagpur	https://www.youtube.com/watch?v=QwE6oFkq3F8
NRC Banana	http://nrce.res.in/success-stories.php
CITH Srinagar	http://www.cith.org.in/index.php?option=com_content&view=article&id=83&Itemid=11&lang=en
IIVR	https://iivr.org.in/success-stories
Grapes	https://rkvy.nic.in/Uploads/SucessStory/TAMILNADU/2018/20180440133.%20GRS%20Success%20story.pdf

https://www.innovationpolicyplatform.org/sites/default/files/rdf_imported_documents/Agricultural_Clusters.pdf

Activities prior to training by Horticulture Training Institute:

The training institute shall undertake

1. Desk Analysis:
 - a About specific commodity: State/ UT and District's Area, Production, Productivity, cost of cultivation, production, post-harvest and marketing problems etc.
 - b Road map formulated by State/UT government to develop the area/ crop / farmers income of the area including State/UT Economic Survey, Annual Report of Agriculture/Horticulture Dept., District website etc.
 - c Explore various research articles on crop production, marketing etc. of the State/ Area.
 - d Examine various study reports of Government agencies- State/ DAC&FW/ APEDA/ SFAC/MoFPI and private agencies- CII /FICCI/ASSOCHAM/ Others for the horticulture Development of the State, Specific location, India etc.
2. Preparation of training design and teaching-learning material.
 - a Preparation of training schedule with good mix of theory, practicals (both in class room and field visits) and home work (After class hours) and also physical fitness and site seeing.
 - b Participants Handbook: A brief note on each of teaching module in local language for circulation to each trainee, with the help of local technical expert.
 - c Preparation of case studies/ exercises for class room discussion / brain storming / homework.
 - d Access to internet and computers to explore the potential of technology.
 - e Identification of the best experts for each of the session and invitation of successful FPOs/ entrepreneurs/ experts for interaction session with the trainees.
 - f Identification of FPOs/Entrepreneurs/Firms/ Organisations for internship with clear Do's and Don'ts.
 - g Every trainee to come with 2 problems with respect to each of the session.
 - h Use of Audio-visual aids for teaching-learning& Good logistics for field visits
3. Identification of fields, FPOs, enterprises and operations etc. for the visit of trainees.
4. Good preparation of trainees accommodation, food (of trainees cultural context as far as possible), primary health care etc.

Services by the Horticulture Training Institute

1. Facilities to Participants during training

- a. Safe and joyful learning environment.
- b. Classrooms are (Venue) : NIPHT- HTC, Talegaon
- c. Safe hostel accommodation and healthy Boarding.
- d. Accommodation/Hostel is at: NIPHT, HTC , Talegaon (twin occupancy)
- e. Hostel check in: One day before training
- f. Hostel check out: following day of completion of course.
- g. Internet and computer systems.

2. Material to be made available to Participants by Horticulture Training Institute

- a. Training Brochure before training
- b. Reading Material during training

3. Faculty: NIPHT/ DGFR/IARI/MSAMB/ KVK/ Expert Guest Faculty

4. Post-training activities:

1. Take written feedback on each of session with respect to content, clarity and delivery style, opportunity for Q&A, accommodation, food, other facilities, suggestions for improvement etc. and share action proposed in future trainings, during valedictory session.
2. Submission of training report to be submitted within 15 days of completion of EDP:
 - a. Objectives, outputs and outcomes of training.
 - b. Training schedule
 - c. Trainee"s / participant list with postal address and contact numbers.
 - d. Photographs and Video (Also to be hosted by training institute and NHB)
 - e. Analysis of feedback and action taken report.
 - f. Action taken on networking with trainees local R&D Institution / experts for regular extension and entrepreneurship development activities.
 - g. Utilisation Certificate.

Photograph of NIPHT Campus



NIPHT Hostel Facility







NIPHT Classroom



NIPHT facilities







