Krishi Vigyan Kendra, Baramati, Pune.
Model
Entrepreneurship and Leadership Development Programme for Horticulture Entrepreneurs
Desirous of applying to Schemes of National Horticulture Board

Crop / Activity	Protected cultivation of Vegetables Crops

2019-20

Become Entrepreneur	
	Lead Change and Innovation
Be creative	
	Lead Profits

Krishi Vigyan Kendra, Baramati

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Training Programme Name	**Entrepreneurship and Leadership Development Programme of Horticulture for Protected cultivation of vegetables :** Capsicum , Cucumber, Tomato, Chilli, Exotic Vegetables & open plot Vegetables crops etc.

Introduction: Indian Vegetables 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 Vegetables . Capsicum , Cucumber, Tomato, Chilli, Exotic Vegetables & open plot Vegetables crops etc. etc is grown in greenhouses. Total Vegetables productions 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 is capital intensive running from several lakhs to several crores. In addition these involve good documentation and time bound 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, time bound 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 recognized /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 Vegelables- Capsicum , Cucumber, Tomato, Chilli, Exotic Vegetables & open plot Vegetables crops etc.

Profile of the Institute:

Krishi Vigyan Kendra, Baramati

KVK Baramati was established on 1st August 1992 under the affiliation of ICAR. It is a high-technational & international award-winning KVK model of India, working for farming communitiesfor 25 years todevelop and enhance sustainable agriculture.
The aim of Krishi Vigyan Kendra is to reduce the time lag between the technology transfer from research institutions to farmers' fields for increasing production, productivity and income from agricultural and allied sectors on a sustained basis.The main target groups arefarmers, farming women, rural youth & extension functionaries of the operational area. KVK transfers the technology to the farming community in form of trials, demonstrations, discussions, trainings, field days, technology weeks, exhibitions et cetera.

Centre of Excellence (CoE) for Vegetables

In May 2012, an overall MOU was signed between the Dutch and Indian agricultural ministries and work plans were outlined. India and the Netherlands agreed to make available Dutch agro-knowledge, technology, research and education for Indian food production and processing sectors. Furthermore, both governments agreed to support public-private collaborative projects between their countries. The concept of a CoE as proposed in the action plan is a showcase and knowledge repository of the best-in-class Dutch technical practices in the product/ area in focus as relevant to the specific Indian context.
The government of India has approved the project on CoE for Vegetables on 11th September 2014 &the implementing agency for this project is Krishi Vigyan Kendra, Baramati, Dist. Puneand Maharashtra and operates as an umbrella for the embedded CoE. The main objective of starting the CoE is to establish a demonstration hub for vegetable production and 'Transfer of Technologies' through trainings to extension officers and farmers in the region. Investigation and introduction of technologies that are required to increase vegetable production and reduce losses in the supply chain (Field/ PHT/ Storage/ Transportation) are being shown. These can be machinery, but also techniques such as protected cultivation, hydroponics, improved seeds and quality planting material, fertigation, use of INM, IPM practices, GAP et cetera.

Objectives of the CoE Project

- To demonstrate high-tech protected cultivation technologies to farmers and extension workers of the State Department of Agriculture& various NGO's.
- To test and verify technologies for farmers'socio-economic conditions and identify their production constraints.
- To conduct the trails of different inputs such as seeds, pesticides and fertilizers under Dutch type as well as Indian poly house types.
- To produce & supply high-quality planting material to growers.
- To organize training programs to farmers as well as extension officers.
- To standardize 'Good Agricultural Practices' (GAP) for succeeding international standards of food safety.

1. Competent Faculty.

SN	Name of Faculty	Designation	Qualification	Expertise	Experience in years
1	Mr.Yashwant Lalaso Jagdale	Co-Incharge	M.Sc (Horticulture)	Greenhouse Flowers Cultivation	12 years Professional and Teaching Experience in the field of Protective Cultivation
2	Mr.Babar Sandip Sayaji	Project Assistant	B. Sc (Agri) PGDABM	Irrigation and Fertigation**,** Vegetable Cultivation, Flower Cultivation	8 years Professional and Teaching Experience in the field of Protective Cultivation
3	Mr.Vijay Dattatray Madane	Project Assistant	B. Sc (Horticulture)	Post Harvest technology	6 years Professional and Teaching Experience in the field of Protective Cultivation
4	Mr.Tushar Jawahar Jadhav	Project Assistant	B. Sc (Agri) PGDABM	Marketing of Flowers and Vegetables	6 years Professional &Teaching Experience in the field of Protective Cultivation
5	Mr.Date Chandrakant	Project Assistant	B. Sc (Agriculture)	Soil sterilization and Bed Preparation	16 years Professional &Teaching Experience in the field of Protective Cultivation
6	Mr.Asim shaikh	Project	B. Sc	Pest and disease	5 years

		Assistant	(Agriculture)	management	Professional and Teaching Experience in the field of protective cultivation
7	Mr.Namdev Kalane	Project Assistant	Diploma (Agriculture)	Nursery management and Landscaping	14 years Professional and Teaching Experience in the field of protective cultivation

Basic infrastructure and collaboration to be in place

INFRASTRUCTURE

KVK,Baramati is spread out on a picturesque 110 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 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 educational equipments including PPT facility. There are nine classrooms available.
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,Biocontrol, 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 16500 Sq. m.
    - Fully automated, computer controlled Dutch type greenhouses
    - Naturally ventilated type greenhouses
    - Fan and Pad Type
    - Poly-tunnel
    - Shade net house
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 equipment such as de leafing, 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.

10. **Hostels and Dining** - 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 130 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 KVK. Gerbera, Gypsophila are in soil; Orchids and Gerbera in hydroponics and Capsicum, Tomatoes, Cucumber in soil; Nursery,

    In the open field horticulture crops like Guava, Mango, Aonla are planted.

Has collaboration with entrepreneurs and Industry.

- KVK works with
    - International level- Holland Door,VHL university The Netherlands
    - National Level- NIAM, NHB, APEDA, MANAGE, NABARD, ATMA/NHM
    - State level- SHM, YASHADA, VASUNDARA, ATMA, APMC.

- Maharashtra State Horticulture Mission has accredited KVK, Baramati 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, KVK, Baramati is willing to provide internships with FPOs/ FPCs/entrepreneurs on chargeable basis.

Previous experience:

ACHIVEMENTS OF KVK, Baramati

- 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 and Shetakari Melawas at various villages for increasing awareness regarding importance of soil and water testing.
- 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 Vegetable" is in established 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.

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(enclosed)
    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. Cold-chain development both for Export and Domestic Markets
7. Producing quality produce: MPS registration will be taken into account Breeders rights
8. DPR for Vegetables viz Capsicum , Cucumber, Tomato, Chilli, Exotic Vegetables & open plot Vegetables crops 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 trainee's context 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.

9. Cluster development / Collaborative farming: What is cluster? Essential elements? To know importance of cluster approach,
10. Government organisations and Schemes related to Horticulture and laws to be complied.
11. Horticulture Statistics sources including DAC&FW website and State Horticulture Dept. website.
12. 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 06 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. Good Agricultural Practices, PBR, MPS registration. Traceability and standards etc.
    d. Documentation of analysis of current scenario of trainee's 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

<table>
<tr><td>Training Programme Name</td><td colspan="4">Entrepreneurship and Leadership Development Programme for Horticulture for Protected cultivation of Vegetables- Capsicum , Cucumber, Tomato, Chilli, Exotic Vegetables & open plot Vegetables crops etc.</td></tr>
<tr><td>Duration</td><td colspan="4">6 working days: 1 Weeks</td></tr>
<tr><td>Participant Target Group</td><td colspan="4">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.</td></tr>
<tr><td>Training Coordinator with Designation and Address Tel, Mobile and email id</td><td colspan="4">Mr.Yashwant Jagdale
Subject Matter Specialist, Horticulture.
Mobile No. 9623384287
At/Post-Malegaon Khurd Tal.Baramati Dist-Pune
Phone no.02112255527
Email id: coekvkbaramati@gmail.com</td></tr>
<tr><td>Languages</td><td colspan="4">English/Hindi/Marathi</td></tr>
<tr><td rowspan="5">Training calendar for 2019-20</td><td>Month</td><td>Last date for Registration</td><td>Training reporting dates</td><td>Training Dates</td></tr>
<tr><td>December 2019</td><td>5 December 2019</td><td>8 December 2019</td><td>9 to 14 December 2019</td></tr>
<tr><td>January 2020</td><td>1January 2020</td><td>5January 2020</td><td>6 to 11 Jan.2020</td></tr>
<tr><td>February 2020</td><td>30 January 2020</td><td>2 February 2020</td><td>3 to 8 February2020</td></tr>
<tr><td>March 2020</td><td>27 February 2020</td><td>1March 2020</td><td>2 to 7 March 2020</td></tr>
<tr><td>How to Apply</td><td colspan="4">By E mail</td></tr>
<tr><td>Next review/ revision of Training Design</td><td colspan="4">February 2020</td></tr>
<tr><td rowspan="6">Batch size and cost and Payment system</td><td>Batch size</td><td>Course Fees</td><td>Hostel: Accommodation, Boarding: BF+L+D + Morning Tea + Afternoon Snacks</td><td>Total cost for 6 days</td></tr>
<tr><td>15 & above</td><td>Rs.1500/ day / Farmer</td><td>Including above facility</td><td>Rs.9000/-</td></tr>
<tr><td>10-15</td><td>Rs.1500/ day / Farmer</td><td>Including above facility</td><td>Rs.9000/-</td></tr>
<tr><td>5-10</td><td>Rs.1500/ day / Farmer</td><td>Including above facility</td><td>Rs.9000/-</td></tr>
<tr><td><5</td><td>Rs.1500/ day / Farmer</td><td>Including above facility</td><td>Rs.9000/-</td></tr>
<tr><td colspan="4">Payment system and address: In cash submission at Training Centre</td></tr>
</table>

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	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.

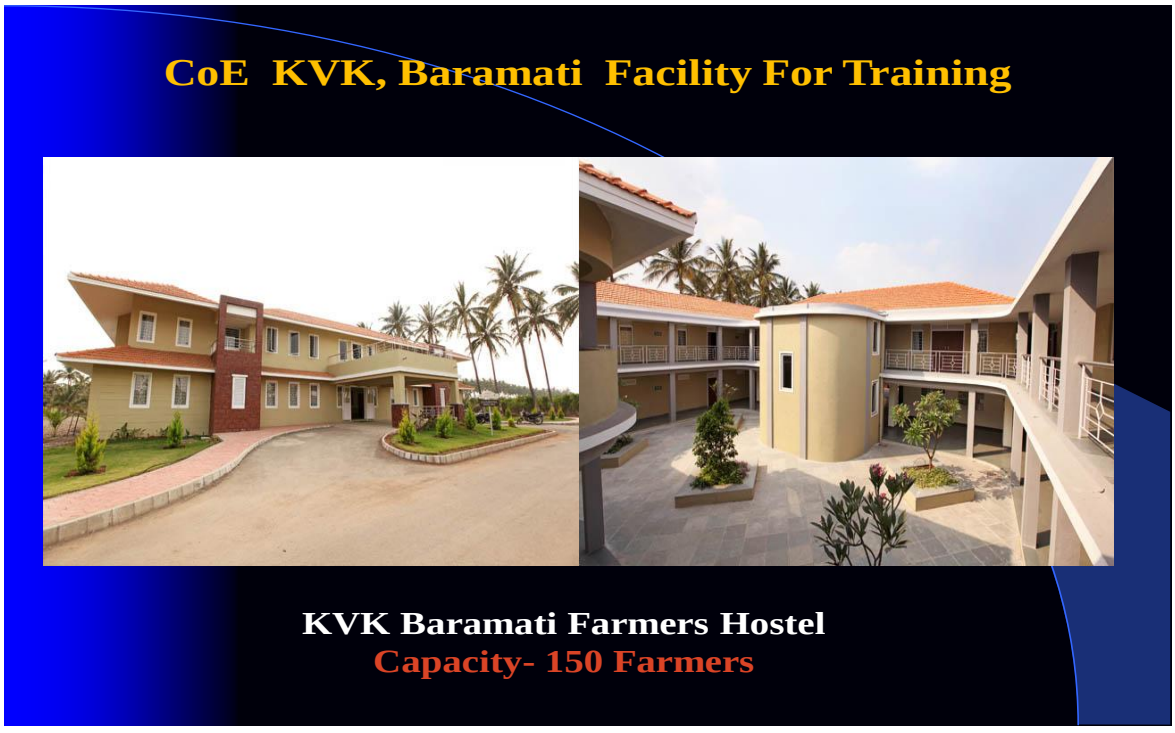
Expectations from trainee before the arrival to the Training institute:

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, and 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.

Available Infrastructure



*: TO be read in the night before attending next day class.
#: Are evaluated/tested the following day.

Centre of Excellence for Vegetables, Krishi Vigyan Kendra, Baramati. 6 Days Training Programme of Beneficiary farmers of Vegetables Crop

Day	Session	Topic	Detail Topic	Expert
1	Session I	Inauguration of Training Programme	Inauguration of Training Programme	Dr.**Syed Shakir Ali**.Head& Senior Scientist, KVK, Baramati. Mr.Y.L.Jagdale SMS Horticulture
	Session II	Registration 25 min. KVK ,Baramati &CoEfilm Introduction Session	CoEfilm Introduction Session	
	Session III	Expectation and Question and Training need analysis	Expectations of participant's analysis.	
	Session IV	Introduction Session about Vegetable Production and Protected Cultivation Technology	Introductory Session on Protected Cultivation	
2	Session I	soil and Water Importance in Protected Vegetable Cultivation	1. PH and EC concept and its Importance in Protected Cultivation. 2. Soil PH & EC 3. Water PH & EC. 4. Water requirement	Mr. Sandip Babar
	Session II	Soil less Media and Its Importance in Protected Cultivation	1. Coco pit, Rock wool, Perlite, Vermiculite 2. Media Bag Selection 3. Soil less cultivation &Importance in vegetable cultivation	Mr. Sandip Babar
	Session III	Visit to Polyhouse and Shade net house in Kadbanwadi and Shelgaon	Production Technology of Protected Cultivation of Vegetable Crops	Mr.VijayMadane Mr. N.W. Kalane KVK Baramati
	Session IV	Visit to Polyhouse and Shade net house in Kadbanwadi and Shelgaon	Production Technology of Protected Cultivation of Vegetable Crops	
3	Session I	Site selection and Erection of Polyhouse and Shade Net house	1. Site selection. 2. Layout 3. Type of protective Structure	Mr. Sunil Khule MalshejAgrotech Pvt.Ltd.Pune. .
	Session II	Site selection and Erection of Polyhouse and Shade Net house.	1. Erection of Structure 2. Visit to Various Structure of Greenhouse in KVK	
	Session III	Pre Cultivation Practical session	1. Bed Preparation 2. Fumigation 3. Mulching 4. Plantation	Mr.Madane V.D KVK Baramati
	Session IV	Pre Cultivation Practical session	1. Basal Dose Preparation and Application	

Day	Session	Topic	Detail Topic	Expert
4	Session I	Cultivation of Vegetable Crop in Protected Cultivation	1. Cultivation of Tomato 2. Cultivation of Cucumber	Mr. Shirish Shinde Syngenta India Pvt.Ltd
	Session II	Cultivation of Vegetable Crop in Protected Cultivation	3. Cultivation of color Capsicum	
	Session III	Practical Session on Vegetable Cultivation	1. Pinching 2. Rolling & Thinning	Mr.Madane V.D Project Associate CoE,KVK Baramati
	Session IV	Practical Session on Vegetable Cultivation	Lowering & Side shoot Pinching & Staging	
5	Session I	Harvesting, Branding ,Grading ,Packaging of Vegetable	Harvesting Branding Grading Packaging of Vegetable	Mr. Tushar Jadhav Project Associate CoE,KVK Baramati
	Session II	Harvesting Branding Grading Packaging of Vegetable	Harvesting Branding Grading Packaging of Vegetable	
	Session III	Irrigation and Fertigation In Vegetable Crop	Irrigation & fertigation Management as per crop.	Mr. Sandip Babar KVK Baramati
	Session IV	Irrigation and Fertigation In Vegetable Crop	Irrigation &fertigation Management as per crop.	
6	Session I	NHM & NHB Schemes for Protected Cultivation.	Govt. Schemes for Protected Cultivation	Mr.TejomayGhadage. Tej Agro India Pvt. Ltd.
	Session II	NHM & NHB Schemes for Protected Cultivation	Govt. Schemes for Protected Cultivation	
	Session III	Training Analysis with the help of participants	Training Analysis with the help of participants	Mr.AsimShaikh&Mr.VijayMadane. Project Associate, CoE, KVK, Baramati.
	Session IV	Feedback & Valediction	Feedback & Valediction	

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

The following web links are illustrative. Training Institute is requested to explore more and the best fit material for the trainee's 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.	Horticulture Statistics at a glance: http://agricoop.gov.in/statistics/publication-reports World fruit and vegetable map: 2018: Robo Bank https://research.rabobank.com/far/en/sectors/regional-food-agri/world_fruit_map_2018.html APEDA AGRIEXCHANGE: http://agriexchange.apeda.gov.in/ ICAR institutions publications on specific crop CII / FICCI/ASSOCHAM/ PHDCC reports http://www.fao.org/docs/eims/upload/210971/global_issues_paper.pdf Success stories: http://agritech.tnau.ac.in/success_stories/sstories_horti_2015.html	
2.	Personal skills development	Internet and youtbue	
3.	Selection of cultivar and Production practices for high productivity	ICAR institutions publications on specific crop Package of practices of specific crop (s). E-learning: videos from authentic sources- ICAR/ SAU/SHU/Global Institutions. ICAR e-courses: https://ecourses.icar.gov.in/	
4.	Harvesting, Post-Harvest Management / Infrastructure	Analysis of FPO model for Vegetables https://nccd.gov.in/PDF/Analysis_FPO_model.pdf Doubling of Farmers Income Report: Vol.III and IV http://agricoop.gov.in/doubling-farmers	
5.	Processing / Value Addition	ICAR / Any reputed R&D Institution publications e-learning: videos from authentic sources- ICAR/ SAU/SHU/Global Institutions.	
6.	Supply/ Cold-chain development both for fresh and processed produce	Cold Chain Awareness program https://nccd.gov.in/PDF/Cold-chain%20Awareness%20Booklet.pdf Analysis of NDDB Model for Vegetables https://nccd.gov.in/PDF/Analysis_NDDB_veg_model.pdf All India Cold Chain Infrastructure Capacity : Gap Analysis https://nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf	
7.	Marketing and value chain development	Directorate of Marketing and Inspection website: http://agmarknet.gov.in/ Crop specific market information sources	
8.	Maintain quality of	TNAU AgriTech portal on Food Safety:	

	produce: Health & Food Safety / Traceability and Standards	http://agritech.tnau.ac.in/gap_gmp_glp/gap_fresh%20_%20fruits%20&%20veg.html http://agritech.tnau.ac.in/food_safetyindex.html Global Gap: https://www.globalgap.org/uk_en/ INDGAP: http://www.qcin.org/CAS/INDGAP/ Global gap India facilities: http://agriexchange.apeda.gov.in/Market%20Profile/Market_Inteligence/Annexure_III.pdf Food Traceability in Inda: http://face-cii.in/sites/default/files/final_report-version_2.pdf FAO International Code of Conduct on Pesticide Management http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/en/ TRACEABILITY IN FOOD AND AGRICULTURAL PRODUCTS: ITC, Switzerland publication at http://www.intracen.org/ GRASP: Global GAP Risk Assessment on Social Practice The Global Social Compliance Programme GSCP https://www.gscpequivalenceprocess.com/	
9.	Finance, Credit & Farm/ Project & Risk Management	Model DPR Templates for NHB Schemes ww.nhb.gov.in	
10.	Cluster development : Collaborative farming/ FPOs/ FPC	NHB Website: Proposed scheme: Horticulture Business Cluster and Supply chain development Programme FAO (2010) Agro-based clusters in developing countries: staying competitive in a globalized economy http://www.fao.org/docrep/012/i1560e/i1560e.pdf World Bank: Agriculture Clusters https://www.innovationpolicyplatform.org/sites/default/files/rdf_imported_documents/Agricultural_Clusters.pdf 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 Crop specific Producers Society and company online authentic sources	
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	ICAR Indian Horticulture Magazine: https://icar.org.in/node/9420 IIHR: https://iihr.res.in/documentary-video-clips-for-farmers FAO: http://www.fao.org/e-agriculture/stub-28	
13.	Technology and Entrepreneurship	Visit ICAR – Institutions / Directorates/ Bureaux/ NRCs: https://icar.org.in/ Innovation in Agriculture: http://www.fao.org/3/CA2460EN/ca2460en.PDF Specific technologies: https://icar.org.in/content/agricultural-technologies e-learning: https://ecourses.icar.gov.in/ ICAR Publications: https://krishi.icar.gov.in/jspui/ Local University publications Local University success stories	

14.	Protected (/Greenhouse / Shade net / Walk in Tunnel) cultivation:	National Committee on plasticulture Agriculture with the Horticulture https://www.ncpahindia.com/ 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://nrcb.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, practical's (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) : KVK,Baramati
    c. Safe hostel accommodation and healthy Boarding.
    d. Accommodation/Hostel is at: KVK,Baramati
    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:**

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.