Desai Fruits & Vegetables Pvt Ltd. Navsari, Gujarat

Model

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

Crop / Activity	**Banana Cultivation**

2019-20

Become Entrepreneur	
	Lead Change and Innovation
Be creative	
	Lead Profits

Desai Fruits and Vegetables Pvt. Ltd.
Plot No. 49, N. H . No. 8, At/Post- Amadpore, Dist.- Navsari, Gujarat-396445

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Training Programme Name	Entrepreneurship and Leadership Development Programme for Horticulture Entrepreneurs desirous of applying to Schemes of National Horticulture Board

Introduction: India is the second largest producer of Fruits and Vegetables globally. During 2017-18 the production of Fruits is 97 Million MT and that of Vegetables is 184 million MT and that of flowers is 2.4 Million MT. The salient features of commercial Horticulture are Perishability, intense Technology, High Profitability accompanied with high investment and High Risks including vulnerability to post-harvest losses. Overall it demands very good entrepreneurship and leadership.

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 day 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 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 day 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

1. Training on Production technology to achieve High Quality and higher yield of Bananafor Export & Domestic market	Banana

Profile of the Institute:

Desai Fruits and Vegetables Pvt. Ltd. (DFV), Navsari

Desai Fruits and Vegetables Private Limited (DFV) is India's leading banana supplier, focused on both, the rapidly growing Indian domestic and global markets. DFV has developed a core strength in managing quality control right from tissue plant, providing full traceability right down the to the individual farmer field level. DFV's excellence stems from its technical know-how and ability to ensure end-to-end supply chain management. DFV's strength in sourcing of high quality bananas sets the foundation for a strategic upside in future through forward integration, by extending control of value chain to distribution ex-ripening chamber.

DFV is the first company in India to introduce technology driven Banana cultivation which has enormously helped farmers to increase their yield, improve produces quality and get higher returns. At present more than 3000 farmers are working directly and indirectly with DFV with an annual production volume of over 100,000 MT.

DFV takes great pride in its expertise of building an end to end supply chain, ensuring consistent and superior quality Cavendish bananas as per global quality standards with timely delivery. DFV's 'Happy Banana' brand is recognized as India's most premium banana brand in both India's domestic and global market. In India, 'Happy Banana' is available in both retail and HoReCa segments. We ensure consumers get their daily dose of happiness through safe and healthy Happy Bananas.

Institute having functional Divisions *viz.*Research and Development, Quality Assurance, Operation, Supply chain Management, Sales- Export & Domestic, Agri. Engineering and Information Technology. Institute has experts in Banana Business Management.

Institute has enlarged vision of conducting basic and applied research in frontier areas for development of cost effective and viable technologies for enhancing production and productivity of Banana, besides human resource development and technology dissemination among the Banana Farmers across India. National Horticulture Mission has also identified the Institute as nodal centre for imparting training on Banana Cultivation Package of Practice.

DFV is also impacting the social and environmental aspects, by generating employment opportunities and improve the livelihood status of the farmers and educating the local community on soil& water conversion, Food safety advisories on insecticide and fungicide residues in agriculture produce etc.

Basic infrastructure and collaboration to be in place

1. Competent Faculty:
   Experienced Expects with more than 15 years is working in Banana specialized field *viz.*Research and Development, Quality Assurance, Operation, Supply chain Management, Sales- Export & Domestic, Agri. Engineering and Information Technology*etc.* along with technical staff are working in the institute.
2. Research & Development expertise and farm / Demonstration experience:
   Faculties having wide experience up to 30 years in the Banana Cultivation of specialization and demonstration experience at farmers field.
3. Excellent classrooms with all Audio-visual equipment and aids including PPT facility:
   Institute has two class room of 40 number of seating capacity in each with up to date sitting arrangements and audio visual arrangements of PA system, LCD projector facilities at KVK centre of Navsari Agriculture university campus. Institute is equipped with one conference hall of more than 400 seating arrangements and one committee room within the campus.
4. Excellent living/ residential accommodation.
   Scientist cum farmer's guest house at at KVK centre of Navsari Agriculture university campus with 5 numbers of rooms with double occupancy and two number of dormitory with a capacity to accommodate 10 persons in each dormitory with all amenities.
   Has good networking with experts across India, to invite best of the faculty in a particular area of expertise:
   Institute has good network with state and central Govt. Agencies working in India and Gujarat& Maharashtra in particular. Institute has good network with state universities, extension functionaries and central universities and extension functionaries working in the field of agriculture and Horticulture.
5. Has collaboration with entrepreneurs and Industry:
   Institute is promoting entrepreneurs by way of providing technical training, incubation of entrepreneurs, field visit at the field level and liasioning with research and developmental agencies.
6. Willing to provide internships with FPOs/ FPCs/entrepreneurs:

Institute is ready to offer internships for FPOs/ FPCs/entrepreneurs in the specialized field of Banana Cultivation

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 Banana crop intensification and high productivity and ecological sustainability.
    a. How to select suitable variety and source quality planting material on market demand and sustainability.

b. Technology: Banana 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 Asses 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, size of the produce, post-harvest practices, cleaning, sorting, grading, packing, labelling, pre-cooling, storage and transportation.
    b. To know required infrastructure- Supply Chain/ Cold Chain and Marketing infrastructure and Gap analysis to the context of trainees.
5. Processing and value addition
6. Marketing and value chain development
    a. To know value chain and documentation of trainees context.
    b. To know how to 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.
7. Supply/ Cold-chain development both for fresh and processed produce
8. Producing quality produce: Healthy, Food Safety / Traceability and Standards
    a. To know Global /National norms of Food Safety & traceability- Good Agricultural Practices, and standards, MRL, IPM, logistics, GMP, Organic certification, etc. Encourage trainees to document a roadmap for availing certification in 1 year time.
9. DPR and 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 trainees 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.
10. Cluster development / Collaborative farming: What is cluster? Essential elements? To know importance of cluster approach,

11. Government organisations and Schemes related to Horticulture and laws to be complied.
12. Horticulture Statistics sources including DAC&FW website and State Horticulture Dept. website.
13. Technology and Entrepreneurship

Pedagogy: Training methods / styles are:

a. Lectures- with two way communication using Audio-visual aids, videos etc.
b. Group &Panel discussion
c. Skill practice
d. 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 75 % 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. Food safety (Good Agricultural Practices), traceability, 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.

Attitude: developing confidence and leadership to successfully complete NHB project timely as per NHB norms, specifications/standards, protocols etc.

1. Networking with various Government and Non-Government Agencies and mentors.
2. To know various schemes and future useful training programmes across the country.

Outcomes expected(in 12 months)

1. Successful completion of the project with right technology and processes complying with all NHB Scheme requirements.
2. Reduced cost of production; improved crop health, productivity &Reduced losses.
3. Improved food safety, certification, standards compliance- at least process is initiated.
4. Improved infrastructure.
5. Improved profits/ net income.

Programme in Brief

<table>
<tr><td>Training Programme Name</td><td colspan="4">Entrepreneurship and Leadership Development Programme for Horticulture Entrepreneurs (Banana)</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 or 2 and also for those who want to improve their knowledge and leadership in protected commercial horticulture.</td></tr>
<tr><td>Training Coordinator with Designation and Address Tel, Mobile and email id</td><td colspan="4">Dr.Sundeep Priyadrashi, Head R&D, Desai Fruits and Vegetables Pct. Ltd.
Navsari, Gujarat- 396445
+91-9561436226 (M)
Email: sundeep.priyadrashi@desaifruits.com</td></tr>
<tr><td>Languages</td><td colspan="4"></td></tr>
<tr><td rowspan="10">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>August 2019</td><td></td><td></td><td></td></tr>
<tr><td>September 2019</td><td></td><td></td><td></td></tr>
<tr><td>October 2019</td><td></td><td></td><td></td></tr>
<tr><td>November 2019</td><td></td><td></td><td></td></tr>
<tr><td>December 2019</td><td></td><td></td><td></td></tr>
<tr><td>January 2020</td><td>25th Dec., 2019</td><td>15th Jan., 2020</td><td>16-25th Jan., 2020</td></tr>
<tr><td>February 2020</td><td>19th Jan., 2020</td><td>9th Feb., 2020</td><td>10-19th Feb., 2020</td></tr>
<tr><td>March 2020</td><td>25th Feb., 2020</td><td>15th Mar., 2020</td><td>16-25th Mar., 2020</td></tr>
<tr><td>How to Apply</td><td colspan="4"></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*</td></tr>
<tr><td>15 & above</td><td>2000</td><td>1700</td><td>3700</td></tr>
<tr><td>10-15</td><td>2000</td><td>1700</td><td>3700</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="4">*Figures are in Rs on per head per day basis
Payment system and address:
Name of the Bank: ICICI Bank Ltd.
Name: Desai fruits and Vegetables Pvt. Ltd.
A/C. No.: 000505022534
IFSC: ICIC0000005</td></tr>
<tr><td>Enrolment</td><td colspan="4">Is voluntary on the part of trainee and on his/her submission of willingness in writing to undergo training.</td></tr>
</table>

Certificate	Upon successful completion of training with 75% 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 95% 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't's, Agenda and Checklist, List of documents to be submitted.
5. Hardcopy of applicants' eligibility and General Conditions.

Day wise schedule

Session	Module	Learning	Expert
Day1 S1	**Registration**	**Registration** Prior-Assessment of knowledge, attitude and skills	
	Orientation / Inauguration	• General discipline in class room (Do's and Don'ts) • Every trainee to share their introduction with expectations. • Motivational Talk	Successful entrepreneur
S2	Economic / Marketing Potential and Specific State/ UTs context: Scope and opportunities and Success stories.	1. Crop Origin, Botany and economic products: 2. Fresh product & Processing & Value added products. 3. India: Area, Production, Productivity, Prices & value. 4. State/UT : Area, Production, Productivity, 5. Prices & value, variation across markets. 6. Global: Area, Production, Productivity, Prices; 7. Domestic market : Supply and Demand; 8. Export and Import scenario; 9. Case study of success stories-2 10. Concerns for growers / entrepreneurs!	
S3	Personal skills development	1. Improve listening, reading, writing and communication skills, team work; reading of signs etc. 2. To learn/ improve IT/ social media and know how to benefit from Internet and newspapers/media. 3. To improve leadership / social skills common informed vision, communication, team work, negotiation skills; with an exercise and success story. 4. To explore leadership roles required in horticulture business and realign and recalibrate self with new knowledge, concepts and tools. 5. Managing change and innovation and Taking charge and leading strategy.	**HR DEPT.**
S4	NHB Scheme Guidelines, Annual Design and Processes of successful implementation and DPR, Bank Appraisal and Sanction of own Project	Group Discussion and Presentation by each group: 1. Scheme guidelines 2. Flow chart 3. Do's and Don't, List of documents to be submitted and Agenda and Checklist. 4. Technology standards/ Specifications etc. 5. Issues with Banks. 6. Common reasons for rejection of Projects at NHB. 7. Q & A on Queries.	**DD NHB**
	Government organisations and Schemes and applicable	List of Institutions for promotion of Horticulture: State/ UT Govt., DAC&FW- CDB, NHB, CPCRI, UT Government, Central Schemes – SFAC, NCDC, MoFPI, APEDA, NABARD etc.	

	laws.	Applicable laws / clearances etc. for Horti-business- As may be applicable- • Crops: IPR, PPVFR, • Technology: TM, Patent, licensing. • Cold Storage: Fire Safety, Pollution, Agriculture Marketing, Conversion of Land use etc.	
	Quiz	Today's learning	
	Reading material for next day*	1. Study of NHB Scheme guidelines and come up with queries. 2. Reading material on Banana cultivation technologies 3. Reading material on good practices. 4. Post-harvest management practices, technologies and infrastructure – specific to each trainee.	
	Evening/Nigh Home work/ Assignment#	• Creation of Whats' app group of all trainees. • Joining of NHB crop specific/Project specific Whats' app group.	

*: To be read in the night before attending next day class.

#: Are evaluated/tested the following day.

Day2 S1	Pre-Evaluation Test	1. Banana Technology Know & How	**R&D DEPT**
	Selection of cultivar	2. Know -Agro-climatic, soil health, and water quality, 3. Know varieties with their features- High yielding, advantages and disadvantages 4. Ascertaining market/consumer preference -choice characteristics of commodity. 5. Understanding ecological challenges of project land and village. 6. How to select economically profitable and sustainable cultivar / variety. 7. Sources of Quality Planting Material Tissue Culture 8. Nursery/ Hardening Treatment Management	**R&D DEPT**
S2	Production Technologies	Types, Site selection, Layout & Design & Size; Selection based on crop, location, climate Required environment – RH, Temperature, light, as per crop requirement, care, operation & maintenance, automation Cost and Economics of Banana cultivation, register keeping, Annual Maintenance Contract, insurance etc.	**DFV Ops. Dept.**
		Familiarise technology and components of cultivation practices, practical on layout. Row orientation etc.	
		Agronomic practices: • Planting time & season • Plant population and spacing. • Banana package of practices.	
		• Soil & Water testing- PH & EC Concept, treatment and its importance. • Pit preparation and proper site/ field lay out / design • Plantation	
	Discussion	Evaluation of Assignment and observations	
	Quiz	Learning on yesterday and today	
	Reading for next day	Production technology, manual-specific to each trainee based on choice /NHB project	
	Assignment for next day	Difference between Applicants DPR and NHB's Model DPR- What are the learning.	

Day 3 S1	Information Technology Entrepreneurship & innovation	Information Technology areas & Providers • Quality Planting Material, Package of practices, IPM, Soil and Crop health, Crop monitoring, Pest and Disease Surveillance, Weather Forecasting • Advisory services • Use of IT, Automation- Drones etc. • Crop wise Experts across India and State. • Contacts at CDB/ CPCRI/NHB/ UT Agri.Dept./ KAU/ ATMA/NHM • Climate change Entrepreneurship: • What it is? Essential elements? • Entrepreneurship in Horti-business-salient features. • Steps involved in setting up an enterprise and laws to be complied. • Business avenues in trainees context. • How to minimise cost of production and maximise profits. Innovation • What is innovation? Innovation in Horti-business?	
	Knowledge and Statistics	• Maintain statistics- Growers, Area, Production, Productivity, Pest and Diseases, Age of plantation • What's app group; • ICAR/SAU/SHU News letters • Advisories • Online news • Market information- State/UT , Domestic and Export • Radio, • e-learning • Kisan Call centres	
S 2	Harvesting, Post-Harvest Management /Infrastructure to enhance holding life and to reduce post-harvest losses	1. Post-Harvest losses and Waste scenario in the country and measures to minimise the same. 2. Proper technique & do's and don'ts of Harvesting; 3. Careful Post-harvest handling / practices including use of crates, reception area, washing/cleaning, sorting, grading (standards), Ripening, Packaging, labelling, pre-cooling & Preservation & Traceability	**DFV Ops. Team**
	Processing / Value Addition	1. Fresh product: Minimal processing. 2. Processing / Preservation- & Value Addition • By product utilisation • Use of renewable energy on roof tops for processing energy	
	Producing Quality produce	Food Safety & Certification & Traceability activities: at pre-planting, Crop husbandry, Harvesting and Post-harvest. • Good Agricultural Practices-GLOBAL GAP/ INDIGAP • BRC/IFS/ FSSC/SQF/ • Codex Alimentarius/ • Organic certification	**Expert from FSSAI**

		For India based facilities and labs- visit websites or APEDA website. Health: Have knowledge of various health hazards relevant to work place including that of machinery & vehicles, chemicals usage, contamination; safety checks, farm personnel safety measures (protective clothing, gloves /gadgets) and first aid; Waste disposal, minimum damage to environment, emergency protocols for health and safety.	
		Standards • GSCP- Global Social Compliance Program; • Social code: GRASP • Fair food • Standards • EU MRL ;FAO-IPM • Sea based logistics certification: IFOAM; Cargo hand book • GMP- for processed / value added products	
	Quiz	Learning on 3 days	
	Reading for next day		
	Assignment	Technologies for Water, Nutrient and Integrated Pest and Disease management. Preparation of Crop calendar including Pest, and disease management	

Day 4 S1	Marketing and value chain development	Marketing Basics: 1. Value Chain Analysis of product and the best possible solutions 2. Identification of markets- Export, Distant Market, Local markets- Mandis/ Traders, Processing units. 3. Demand – seasons / days etc. 4. Market differentiation&Market Driven Production- Concept: What? How? Challenges? Solutions 5. Promotion strategy: Branding; Differentiation of product 6. e-marketing	**DFV Experts-Sale Team**
		Market Intelligence / Transparency in Market prices/ Assimilation of Market Information 1. Knowing end market prices- Local market and distance market through Media-print, AIR, TV, internet, commission agents etc. 2. Analyse market information season wise. 3. Use market information to decide where to sell, when to sell, to whom to sell, and what quantity to sell etc to be profitable. 4. Arranging cost effective transportation. 5. Also use market information for growing next crop, season, area and release of produce into market etc.	
		Demand assessment and management: 1. Need to consolidate demand from all sources- retail outlets, chain, hawkers etc. 2. Assured quantum can be vertically integrated with producers. 3. Variable demand is linked with indirect or Mandi based procurement. 4. To know a balance sheet: demand and supply of commodity if possible.	
		Causes of market instability and measures to address 1. Causes: Low cost supplies from new production areas, Fluctuating demand in Transport availability, Market manipulation, weather vagaries, local disruptions (Bandhs etc.) etc. 2. Measures: Building brand loyalty, Efficient supply chain with dedicated transport on pre-determined schedules, Complementary storage option for buffers for 2 weeks; For perishables- back end sources and reefer transport, modern pack houses; Food processing capacity, Export markets. 3. Measures to check gluts.	
		Marketing models / Measures to minimise price spread / enhance price realisation. 1.Direct- 1.Bulk sale- fast tracked without any pre-cooling with daily dispatches. 2.Bulk or retail outlets- owned/ franchisee. 3.Through wholesale trader / Retail chain/	

		Exporter/Importer/ Street vendors/ vegetable sellers. 2.Marketing with /without legal contract with buyers, supply chain agents etc. 3. Models: • DFV Front end distribution model in Export and Domestic markets. • HOCOMS model: Both back end ownership of collection centres and transport and front end distribution, outlets. • Study of pricing / price realisation across the models	
		Potential niche Export& Domestic markets 1. Global Scenario- product wise; Success story, 2. State/UT s potential, Challenges for Export markets- sea based; 3. Interaction with Exporters and Importers. 4. Linkage with Distribution hubs 5. Indian Scenario- product wise; Challenges for Domestic – road based 6. List of processors, value added companies.	
S2	Economics, Finance, Credit &DPR and Project Management and Risk Management	1. Estimate cost of production and required investment; 2. To know about Banks/ Financial Institutions; Loan procedure-how to avail finance/ credit- challenges and prospects. 3. Facilitate in possible solutions on expeditious and easy access to credit in trainees context. 4. To prepare a proposal for loan duly considering Agro-climatic/soil/ water suitability, Market, Finance and Technical viability. 5. Model DPR Templates of NHB. 6. DPR preparation for various schemes 7. Farm record keeping. 8. Economics of enterprise & performance measurement using 2-3 financial indicators. 9. Managing Natural calamities 10. Mitigation, Insurance- risks covered, not covered, claims, assessment, settlement etc. 11. Monitoring and Evaluation of project	**Bank Manager**
S3	Supply/ Cold-chain development both for fresh and processed produce Agri / Horti-Logistics	1. What is Supply Chain and Cold Chain? Advantages. 2. For Local sale: where product selling cycle is < 48 hrs- to have aggregation, staging platforms at village level for sorting and grading and to consolidate volume for viable truck loads. 3. For Long distance: where product selling cycle is > 48 hrs- require aggregation platforms, pre-conditioning supply & cold chain management- Modern pack house, integration with reefer transport.	**DFV Experts- Supply Chain**
		4. Required infrastructure Gaps, 5. Strategy for phase wise Supply/ Cold Chain development in trainee's context. 6. For domestic market- Local & Distant	

		7. For export market. 8. Annual Maintenance, Contract of Infrastructure.	
	Discussion	Evaluation of Assignment and observations	
	Quiz	Learning on 4 days	
	Reading for next day		
	Assignment	**Explore: http://agmarknet.gov.in/** Documentation of difficulties being faced by trainees; Interaction with Bankers and growers Understanding ones own DPR and Model DPR format- critical comments. Role of Banker in NHB Schemes.	

Day 5 S1	Visit to Farm of Farmers, Modern Pack House, Cold Storage etc.	1. Sessions including training, Prunning, etc. 2. Skill/ Hands on training on Harvesting techniques + Post-harvest Practices 3. Sessions including training, Prunning, etc. 4. Skill/ Hands on training on Harvesting techniques + Post-harvest Practices	
S2	Discussion	Evaluation of Assignment and observations	
	Quiz	Learning on 5 days	
	Assignment	• Study of Agenda and Checklist of each project. • Examining previous IC and PAC meeting minutes from NHB website on grounds of rejection. • Identification of Risks and Measures to overcome these risks for successful and timely completion of project as per NHB scheme guidelines, standards and making profits.	

Day 6 S1	Evaluation 1 Hour	Training evaluation /Test on 1. Knowledge 2. Skills 3. Attitude Marks in the test are		**R&D Dept.**
	Total Marks Final Assessment	1. Class room participation	25%	
		2. Timely submission of assignments	25%	
		3. Final evaluation	50%	
		Total Marks (Are recorded in Completion Certificate)		
S2	Feedback 30 Min			**R&D Dept.**
	Discussion on 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 weblinks 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	
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 produce: Health &Food Safety / Traceability and Standards	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 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, 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) :…….
    c. Safe hostel accommodation and healthy Boarding.
    d. Accommodation/Hostel is at:
    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.

What is cluster ? When a group of individual growers or farms are called as Cluster?
Essential elements / components of a cluster:

Cluster sprout: Large scale areas where a particular crop is under cultivation already, but lack all the characteristics of Cluster.

Cluster: A cluster is a geographic concentration of firms that work in a related value chain. (Professor C. Leigh Anderson 2015: Univ. Washington)

Principle (s):

1. Firms that operate close to related firms and supporting institutions are often more innovative and, therefore, more successful in raising productivity than firms that operate in isolation.
2. To counter increasing fragmentation in farm holding size, by promoting collaboration in land holders. This is expected to regain economy of scale- on inputs and on outputs.

The essential characteristics / elements of a horticulture cluster are :

1. Geography: Located within an identifiable & as far as practicable, contiguous area.

2. Specialisation: Similarity in the commodity (s) production and complementarity in the methods of production, Channels for communication among the members, quality control and testing,technology and marketing strategies/practices energy consumption, Common challenges and opportunities etc.
    i. In case of Fruits: Commodity specific
    ii. In case of Vegetables: 4-5 crops of similar nature capable of rotation.
    iii. In case of Floriculture: Commodity /Similar commodity specific

3. Intensive linkages viz., Horizontal, Vertical and Support relationships

    a. Horizontal relationships among producers:
        Cooperatives / FPOs/ Companies/Smallholder business consortia but for the NHB scheme it is within the FPC model.
    b. Vertical relationships -among
        i. Agricultural producers,
        ii. Production Input Suppliers,
        iii. Production, Harvest and Post-Harvest Service providers
        iv. Financial Institutions,
        v. Processors and exporters,
        vi. Logistics/ Supply Chain providers
        vii. Branded buyers and retailers;

Colocation of actors at multiple parts of the value chain is one of the defining features of agribusiness clusters. In such contexts co-location through agribusiness clusters can reduce transaction costs, and increase productivity and innovation.

c. Support relationships between producers and facilitating organizations:- that reinforce the quality, efficiency and sustainability aspects of the chain
    i. Governments, business service providers,
    ii. Research institutes, universities and
    iii. non-government service organizations).
    iv. Cluster members may benefit from linkages from supporting institutions that provide specialized training, education, information, research and technical support (Porter, 1998). Clusters also often involve private sector financial firms who provide access to financial services and investment.

4. Critical mass of Actors: Number of growers and size: Critical mass of actors, resources and competencies necessary for a cluster to effectively lower transaction costs, facilitate information flows, provide access to specialized factor markets and interact effectively with local, regional and national consumers.Area of willing growers with produce volume capable of viable capacity use of the post-harvest infrastructure components while retaining priority to reach distant markets.

5. Producer ownership: Holds ownership of trading / marketing of produce: Removes intermediary traders/Bypass wholesale traders. Deals with buyers / retailers directly.

6. Shall serve identified Targeted Market (s).

7. Undertake promotion of produce with collective branding

8. Evolution and diversification of commodity trade with time and entrepreneurship- Fresh produce, processing and Export, new markets.

9. Inclusiveness : have provision for enrolling new members to enable prospective entrepreneurs and utilise facilities / services within set limits.

10. Generate innovation and promote evolution of the business model.

India’s Success Story: Desai Fruits and VegetablesPvt. Ltd.