



## **SSPN Portfolio :**

### **Seed/Seedling Processing and Nursery Automation Centre (SSPN).**

The Indian Council of Agricultural Research (ICAR) and World Bank have hand to hand work to strengthen the field of agriculture in education research and develop both public and private sector. The National Higher Agriculture Education Program is also a multi-Global Practice collaboration (Agriculture and Education) and is expected to support activities and results directly related to cross-cutting strategic areas of climate change, jobs, and gender. Demand for a skilled workforce with industry orientation has increased significantly in both the public and private sector especially in the areas of agricultural education research and agro-based industries in the last several years. Higher workforce participation of agriculture graduates has been enhancing the lifetime earnings and quality of life along with multiplier effects, positively contributing to economy and society through saving and investments it is implied that improving levels of higher agriculture education could be beneficial from both economic and social justice point of view in India. The Project supports the Country Partnership Strategy and addresses the three engagement areas of integration, transformation, and inclusion. These engagement areas foresee increased agricultural productivity and support quality improvements of higher education to create a more skilled workforce that continuously improves the productivity of key sectors, including agriculture.

There are 4 Portfolios Under NAHEP-CAAST VNMKV Parbhani.

1. Climate-based Digital Knowledge Support Centre (CDKS).
2. Seed/Seedling Processing and Nursery Automation Centre (SSPN).
3. Smart Portable Machinery Centre (SPM).
4. Food Processing Automation Centre (FPA).

### **SSPN Portfolio Objectives:**

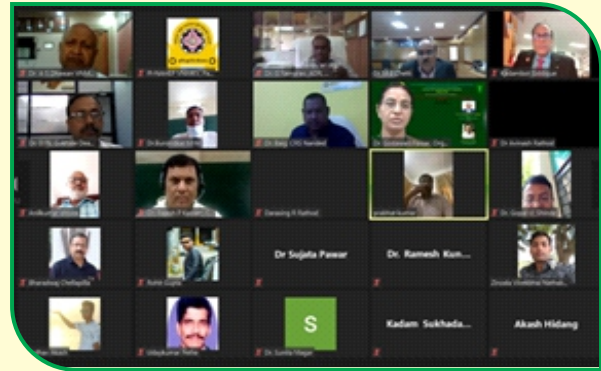
- Involvement of PG/ Ph D students and faculty in certificate courses related with digital agriculture.
- Organization of training/ Workshops (one week/ Two week) for students, faculty in Seed Processing and nursery automation.
- Development of national/ international collaborations with Universities including IIT Kharagpur and IIT Bombay for knowledge exchange in the field of SSPN portfolio.
- Capacity building of students and entrepreneurs for self-employment.

### **Events/Achievement.**

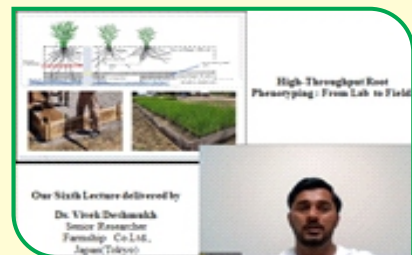
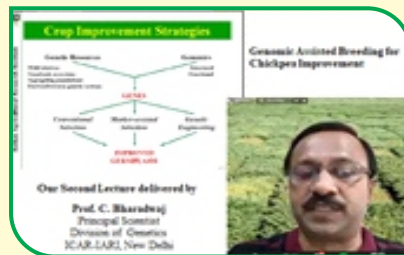
The Centre for Advance Agricultural Science and Technology (CAAST) for Digital Farming Solutions for Enhancing Productivity by Robots Drones and AGV'S (DFSRDA), Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra (India) is organized a one week online International training programme on **“Recent Physio-Molecular Digital Tools in Abiotic Stress Management for Crop Modeling”** from 29<sup>th</sup> June -3<sup>rd</sup> July, 2020. One of the main objectives of this centre is the capacity building among PG/PhD students and faculties of VNMKV and other universities about recent advances in agricultural science and technology.

Abiotic stress drastically limits agricultural crop productivity worldwide. Climate change threatens the sustainable agriculture with its rapid unpredictable efforts, making it difficult for agriculturist and farmers to respond to the challenges coping up with environmental stresses. This challenge comes at a time when plant sciences are witnessing remarkable progress in understanding the fundamental processes of plant growth and development. In order to deal with the challenge of crop improvement in the era of Climate change, it is essential that we adopt the approaches in which plants respond to environmental changes in terms of producing novel phenotypes.

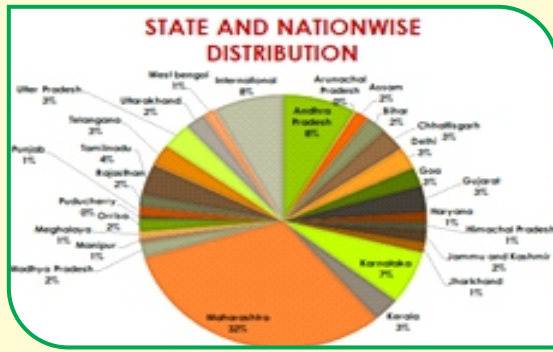
The online training aims to share the knowledge b experience of the researchers about various methodologies, strategies Et recent scientific development about management of abiotic stresses of the crops in addition to the immediate challenges of climate change in agriculture Et allied sectors. This training will helps to bring together researchers / scientists from different institutions working in the area of development of climate resident varieties and to equip the young scientists to face the challenges posed by changing climatic condition by using plant phenomics tools and to discuss how effective the plant physio-molecular research should be conducted and integrated within multidisciplinary research team.



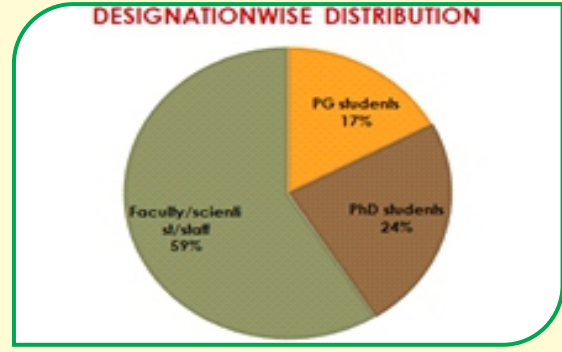
## INAUGURAL SESSION OF ONE WEEK ONLINE INTERNATIONAL TRAINING PROGRAMME ON DATED 29 JUNE



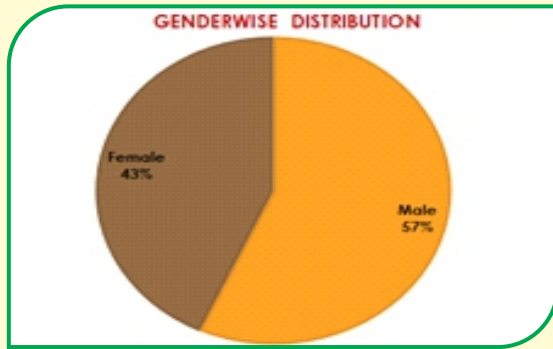
## SESSIONS CONDUCTED BY EMINENT SPEAKERS



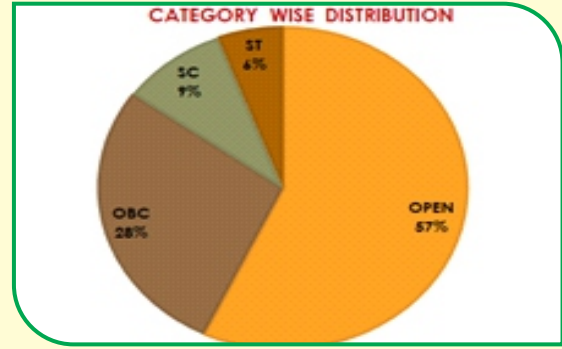
STATE AND NATION WISE DISTRIBUTION



DESIGNATION WISE DISTRIBUTION



GENDIRE WISE DISTRIBUTION



CATEGORY WISE DISTRIBUTION

### Student awareness activities

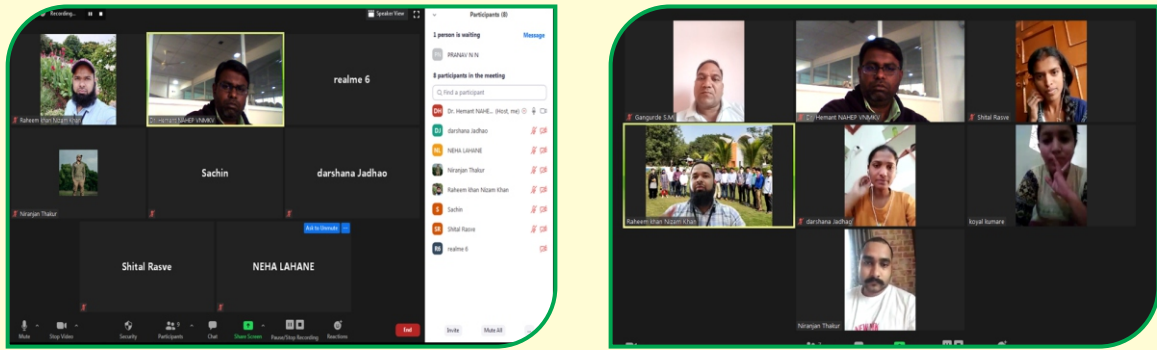
PG/ Ph.D. Student of VNMKV having the various issues regarding their research work and some problem and facing the challenges in adaptation of digital technology incorporated in their research work. NAHEP Staff member having the friendly discussion with them and try to solve the issue and guide them.



DISCUSSION WITH THE STUDENT AND DEMONSTRATION OF HAND OPERATED GRAFTING TOOLS



In the pandemic situation student were out of the campus and they doing their research work from home. During this period SRF and JRF were telephonic contact with them and meet them in zoom platform for the discussion of issue facing in technical report writing.



### ZOOM MEETING WITH THE PG/PHD STUDENT

Nursery Visits for material purchasing and collection of information for seedling propagation. As per the mandate of SSPN seedling preparation and development is to be done for that purpose we had visited to Sir Deshpande Agro Services Pathri Road Parbhani. We have purchased seeds and planting material with close observation of seedlings and their management.



### Visit to Nursery at SarDeshpande Agro Services Pathri Road Parbhani

#### Establishment of Cold storage Unit

One of the essential Activity develop under the SSPN which is use for the storage of Seed, Seedlings, Vegetable's Fruits and Food product stored under the low temperature which is useful for increase the shelf life of stored material



### VISIT OF DELEGATES TO COLD STORAGE UNIT Purchasing and Modification of Cold storage Van Under SSPN.

**Propagation and planting of Vegetables seedlings (tomato, chilli and brinjal etc) for various trials by using different digital tools under SSPN.**

Measeaure aim of SSPN Portpolieo is to deveploed different seedlings by using different digital tools and techniques used to enhance digital farming project.Under this various activties are proposed. Development of seedling for the experimental trial conducted for procured used of digital tools



**SEEDLING PREPARATION FOR THE FILLER TRIAL**

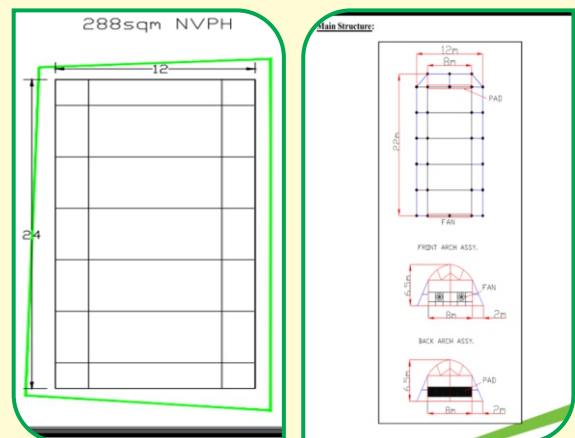


**EXPERIMENTAL SETUP FOR THE FILLER TRIAL OF SENSOR AND DIGITAL TOOLS**

**Hightech poly house (Proposed in Procurement plan).**

Hi-tech farming aims to provide productive water, fertilizer and control agents at the right time and in real-time. In the case of high-cost fertilizer, high-tech farming can reduce the loss of the elements and reduce the cost of production by utilizing them accurately in high-tech farming. It consists of different sensors (moisture sensor, temperature, humidity etc.) which controls environment inside poly house, different cameras (Real sense, Zed, Stereovision) for continuous monitoring of crop and soil health.

Polyhouse protects the crops from wind, rain, radiation, precipitation and other climatic factors. It creates microclimate surrounding the crops that help in maximum growth regarding production and quality. Polyhouse also provides higher concentrations of Co2 to increase the production to maximum level therefore Polyhouse yields are higher than open field cultivation.



**LINE DIAGRAM OF PRAPOSE POLYHOUSE UNDER THE SSPN**



**Grafting Robots(Proposed in Procurement plan).**

Grafting is a green, environmentally friendly and sustainable way to prevent soil-borne diseases. Although artificial grafting is the main grafting approach used for grafting production, Manipulators were employed to take out rootstocks, increase the distance between them, and transfer them to transfer cups for the simultaneous multi-plant grafting.



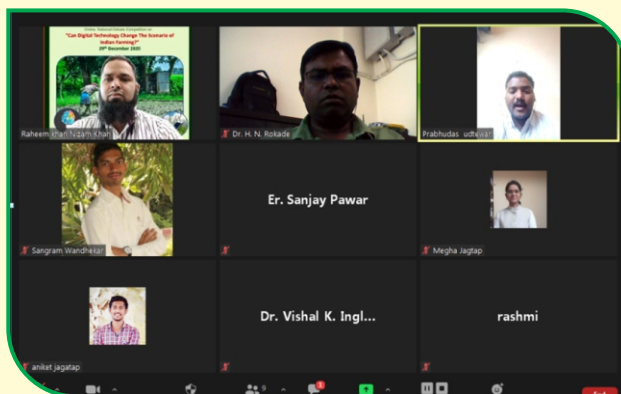
**Seed sorting Machine(Proposed in Procurement plan) .**

This machine used to maintain uniformity and purity of different seeds. It consists of different electronics tools like sensors, RFID, Controller, Camera, automatic conveyor belt. Seed sorting machine will be procured in mechatronics lab for understanding and learning purpose of students.



**Debate Competition**

Online debate competition has been conducted on the Occasion of “National Farmers Day”, link started on dated at 23/12/2020 link shared to all student for the encourage them to develop the skill.



**National Agriculture Higher Education Project (NAHEP CAAST)  
Centre of Excellence for Digital Farming Solutions for Enhancing Productivity by  
Robots, Drones and AGV's (DFSRDA)  
Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani (M.S.) INDIA**