

# SHARAD PAWAR INSPIRE FELLOWSHIP A Journey from Inspiration to Excellence

Agriculture

Winter Batch 2021

1444

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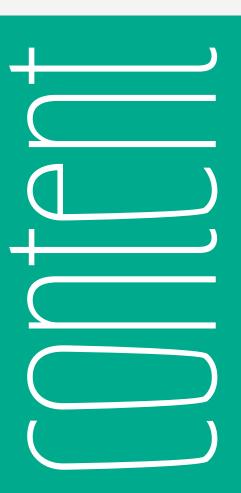
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**Dr. S.S. Magar** (Former Vice Chancellor, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli)

**Dr. S.N. Puri** (Former Vice-Chancellor, Central Agricultural University Imphal)



## **AN OVERVIEW OF WINTER BATCH**



SMART Goal Setting: Fellows will be asked to convert their GOAL to a SMART GOAL by following the below methodology

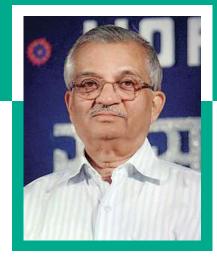
- S Specific
- M Measurable
- A Achievable
- R Realistic
- T Timely

Fellows will develop SMART GOAL on Day 1 and Day 21 to observe the difference in their approach before and after the Bootcamp. The SMART GOAL will be targeted towards solving the major problem in the Fellow's PIR

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- 04 Advanced Dairy Technology & Practices, Orientation to COE Dairy and Laboratory
- 05 Milk Products preparation & Interactive Session
- 06 Consumer Centric Approach in Marketing & journey as an entrepreneur
- 07 Climate Resilient Approach in Agriculture
- 08 Abiotic stresses on crop plants under climate change
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- 12 Fundamentals and Management of FPO's and Strengthening of Farmer Producer Companies. Sustainability and Institutional Capacity Development
- 13 Augmented Reality
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#### WORD OF APPRECIATION



This overview of the progress made for the 2021 winter batch of Sharad Pawar Inspire Fellowship (SPIF) in Agriculture brings out salient aspects of the scheme including the twenty-one-day bootcamp that was organised for the fellows at Baramati. Clearly a lot of detailed thinking and planning has gone into shaping of this programme as even a quick glance of this booklet would reveal.

Our country has a distinctive feature of being a land of youth. A larger fraction of them come from the rural domain and thus are connected with agriculture in one way or other. It is thus vital that we create opportunities for them to explore their ideas to make a significant positive difference to agriculture and allied sector leveraging the full potential of new knowledge and technologies. Developments in industrial era have led to creation of greater opportunities in urban areas leading to significant migration from villages to cities and growing disparities between the two. The present knowledge era potentially reverses the situation. Through proper education, training and capacity building of youth and leveraging decentralised and democratised mode possible in the knowledge economy, rural domain can in-principle contribute in all the three sectors of economy viz. the agriculture, manufacturing and service sectors in a much more significant way. This could mean a major boost to rural economy and more importantly bridging of the urban-rural divide. Sharad Pawar Inspire Fellowship constitutes an innovative and important platform for this purpose.

It is nice to see that the bootcamp has created a very broad firsthand exposure for the Fellows in a broad range of new technologies and processes. Apart from seeing many of them in action, the bootcamp has also created life time opportunity for the fellows to listen to and interact with leaders and icons in these areas. I am certain, the fellows have emerged fully charged to take their respective ideas forward leveraging mentorship and incubation support that would come forward in days to come. A further outcome expected through this platform is the leadership development through peer-to-peer exchange among fellows and the conducive ecosystem that the platform enables. My best wishes to all Sharad Pawar Inspire Fellows for full success in their respective endeavours. May their collective efforts contribute to a new movement for accelerated development and growth of Maharashtra. That would be a fitting salute to glorious career of Hon. Shri Sharad Pawar.

I would also like to pay tributes to the initiative and leadership of Hon. Smt. Supriya Sule in shaping this very meaningful and creative endeavour and to the efforts and contribution of all colleagues involved in implementation of the Sharad Pawar Inspire Fellowship in Agriculture.

With compliments and best wishes,

Anil Kakodkar

#### **ABOUT SHARAD PAWAR INSPIRE FELLOWSHIP**



Agriculture sector in India faces many challenges and has both explored and unexplored opportunities to grab with. India ranks second worldwide in farm outputs. As per 2018, agriculture employed more than 50% of the Indian work force and contributed 17–18% to the country's GDP. With the rapid onset of climate change, agriculture is facing a multiplicity of challenges namely deteriorating soil health, reducing productivity per acre, extreme floods and droughts etc. This however means that all of the above listed challenges bring with them the opportunity to disrupt the current practices to bring about positive change. To actualize this opportunity the youth of this nation need to be able to grasp, shape and harness the rapidly evolving technological advances in the agriculture and allied sectors. Youth need to be well acquainted with latest technologies in agriculture and allied sectors such as artificial intelligence, internet of things, controlled environment agriculture, genetic improvements in animals etc.

#### GENESIS

To salute the glorious career of revered Hon. Sharad Pawar Saheb, Yashwantrao Chavan Pratishthan, Mumbai is awarding 'Sharad Pawar Inspire Fellowship in Agriculture' to meritorious Student in the field of Agriculture from the year 2021.

Agriculture, Literature and Education are three areas of fellowship announced this year and the fellows were awarded in an inauguration ceremony which was held recently at Nehru Science Centre, Mumbai on 11th December 2021.

The idea for this fellowship was first mooted by Mrs. Supriya Sule under the guidance of Dr. Anil Kakodkar and Dr. Vivek Sawant, as per the objectives, Innovation & Incubation Centre, ADT took charge of the implementation of 21 Days Bootcamp for this fellowship programme.







#### **OBJECTIVES OF SPIF**

Create an inspiration and learning platform for youth in the state of Maharashtra who undergo a 12-month long journey of discovering their own leadership potential and being inspired to bring about transformative change. It includes training, mentorship, reflections and hands-on experience with grass root organizations working on the issues that the fellowship program has selected.



To inspire and empower the youth to take up leadership roles in agriculture and allied sectors



To familiarize fellows in applications of advanced technologies such as artificial intelligence, augmented reality, blockchain, quantum computing etc. in food and agriculture sectors



To provide an introduction to the technical aspects of new technologies such as artificial intelligence, protected cultivation, animal genetic improvement etc. and their various applications in agriculture and food industries



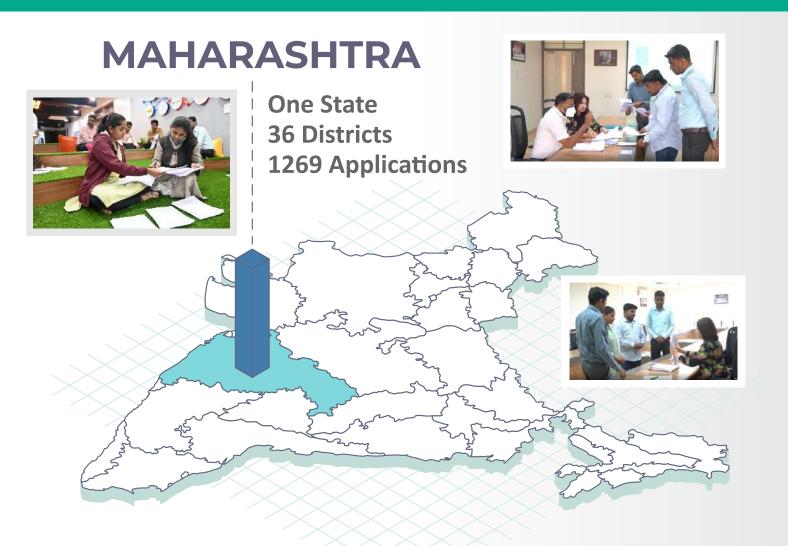
To provide hands on training to students in design, development and execution of various artificial intelligence projects



To develop an end-toend understanding of the process of innovation right from basics of sensors and sensor development to advanced applications of AI in quantum computing

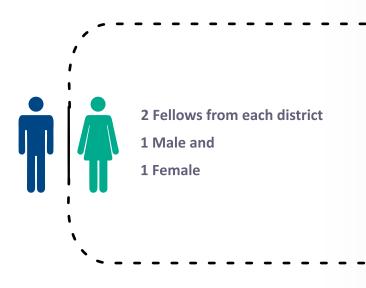


To engage students with a varied panel of international experts accomplishing groundbreaking results on real world problems with the help of AI in industrial setting



#### SELECTION PROCESS

Screening of Application based on certain criteria





Winter Batch Summer Batch 40 Fellows Each

#### **21 DAYS BOOTCAMP STRUCTURE AND DESIGN**

Innovation and Incubation Centre at Agricultural Development Trust, Baramati organized 21 days of Handson training on advanced Agricultural technology for these fellows starting from **27th December 2021 to 19th January 2022.** These 21 Days programme covered the topics like Greenhouse Technology and Practices, Advanced Dairy Technology & Practices, Consumer-Centric Marketing, Climate Resilient Approach in Agriculture, IPR, Agricultural Marketing, Virtual Sessions on Quantum Computing, Augmented Reality, GIS/ Computer Vision, IoT /ML, Basics of 3D Printing, Introduction to Robotics in Agriculture, Design Thinking sessions & Concept Prototyping, Business Model & Pitch, Soft Skill & Personality Development and Critical Report Writing. We also organized a few interactive guidance sessions for these fellows where we called Agri-entrepreneurs, Renowned Educationists, Start-up Founders to inspire these fellows with their success stories and share the insights on their journey as an entrepreneur.





#### ORIENTATION DAY

Registrations of fellows for the bootcamp Orientation session and inauguration of the 21 days bootcamp Interaction with hon. Rajendra Pawar(Chairman, Agricultural Development Trust, Baramati) about the goals and ideas of the fellows

Mr. Vivek Sawant (Former MD, Maharashtra Knowledge Corporation Ltd.) guided fellows on the Smart Goal Setting on the first day of the Bootcamp.













Inspirational Movie-The Secret for inspiring the fellows to take up their dreamsforward.

Fun Games at the evening for replenishing the mood









The interaction of fellows with Hon. Shardchandra Pawar (President, Agricultural Developement Trust Baramati). Guiding Them on Their Goals Taking into account current Indian Situation.





DAY 1

The session on Indo-Dutch Greenhouse Technology and Climate Control Greenhouse Structure & Climate Control, Growing Media & Propagation, Irrigation & Fertigation Management conducted by Mr. Yashwant Jagadale (SMS, KVK), Mr. Vijay Madane, Mr. Tushar Jadhav and other team members (Centre of Excellence on Vegetable, Baramati).









Hands-on practical sessions on Integrated Pest Management of Vegetable Crops, Virtual session on Vegetables Crops Cultivation by Mr. Makar Nunhemps (COE, Vegetable) followed by the Exposure visit to the progressive farmer (Kambaleshwar)

In the evening Ms. Swati Shingade(Entrepreneur) guided fellows on Polyhouse, Organic Farming













Session on Advanced Dairy Technology & Practices, Orientation to COE Dairy and Laboratory: Visit to Center of excellence in Dairy to learn more about milk processing technology, In the afternoon fellows Prepared Milk Products by using these advanced equipment & learned about Packaging













Hands on practical session on Milk Products preparation Started with the various milk products like Curd, Lassi, Paneer, Flavoured Milk, Ice Cream etc.













In the afternoon session fellows visited to Trimurti Dairy processing unit at Someshwar Nagar, Baramati.



DAY 4



The day come to an end with an interactive session with Dr. Shankarrao Magar, Trustee, ADT Baramati.









Session on Consumer Centric Approach in Marketing on How to set Consumer-centric Marketing Strategies and Identify Business Opportunities and Communication Skills, Presentation Skills for Marketing; session delivered by Mr. Santosh Pise( President, Indo Science Education Trust).



In the evening Mr. Suhas Kachare (Director, Mahapeek Fertilizers) talked about his journey as an entrepreneur.







Session on Climate Resilient Approach in Agriculture with Mr. Vijay Kolekar (Agronomist, PMU, Pocra, Mumbai) Focusing on Climate Change and its Impact on Agriculture and Value Chain Development for Resilient Agriculture













In the evening Mr. Santosh Karanje (Subject Matter Specialist Agronomy, KVK, Baramati) guided the fellows about NICRA project

#### DAY 7





Session by Dr. Gurumurthy S. (Scientist plant Physiology, ICAR-NIASM)focusing on "Abiotic stresses on crop plants under climate change" followed by Visit to NIASM, Malegaon.













Session by Adv. Ganesh Hingmere (founder of Great Mission Group Consultancy and director of GMGC IPR Services Pvt. Ltd.), on "Intellectual Property Rights in Agriculture".











Entrepreneur Talk - In the evening Mr Sameer Dombe Patil (Managing Director, Dombe Patil Foods Pvt. Ltd.) shared his story of becoming an entrepreneur.













Session on Agricultural Marketing with Dr. Parashram Patil (Agricultural and Natural Resources Economist and Social Scientist) where he guided about Indian Agri. Export Economy, Contract Farming & Agri. Export followed by Visit to Kaybee Exports, Phaltan.





## DAY 10 DAY 10



Virtual Session with Mr. Deep Prasad (CEO, Quantum Generative Materials) for Quantum Computing and Machine Learning. In the afternoon fellows learned about Hands-on development of quantum machine learning algorithm for novel climate-smart pesticide compound design.



In the evening there was an Interactive Talk by Mr. Yogesh Brahmankar(CEO, Symbiosis Centre for Entrepreneuship & Innovation) on -Innovation & Start-up Ecosystem











DAY 11 DAY 11





Dr. Santosh Deshmukh (Consultant, Sustainable Agriculture, Watershed Management, Climate Change and FPOs) conducted a session on Fundamentals and Management of FPO's.









In the afternoon session Dr. Sagar Wadkar(Social Enterprises Management Trainer) guided the students on Strengthening Farmer Producer Companies. Sustainability andInstitutional Capacity development













#### Augmented Reality (Virtual Session)

Mr. Max Hao Lu (Head of Technology, Bloomberg New Economy)conducted a virtual session on Augmented Reality, Fellows came to know about What is Augmented Reality, Application of Augmented Platforms in various sectors, Introduction to Vuforia AR Camera, Taking a perfect image for Augmented Reality development and Interacting with Image Targets using Virtual Button in Vuforia..!

#### **DAY 12**









In the afternoon

Mr. Usha Barwale Zehr (Director & Chief Technology Officer, Mahco Pvt. Ltd.)

GIS/ Computer Vision (Virtual Session) Mr. Gajanan Kothawade (Data Scientist, Quantela Inc, Bangalore) conducted session on Hands-on coding of a computer vision system for real-time disease diagnosis.



guided fellows on -Climate Smart Agriculture Industry Linkage In the evening there was an Interactive talk by Mr. Sudhir Kumar Goel (Former, Additional Chief Secretary,

Kumar Goel (Former, Additional Chief Secretary, Agriculture & Marketing, Gov. MH.) India on various government schemes for Agricultural Innovators.









Interactive and practical session on Digital marketing Session on Digital Marketing was conducted by Mr. Akshay Kharade (CEO, Widespread Solutions). He also talked about How Effectively, we can do Monetization of Farmer's Produce by using digital media..!



In the evening there was an Interactive session delivered by Ms. Devyani Pawar (Founder & CEO, The Essential Greens) on Find Purpose in Everything you do...!









# DAY 15 DAY 15





Artificial Intelligence (Virtual) Dr. Ajit Jaokar (Artificial Intelligence Course Director, Oxford University) for the session was conducted on What is artificial intelligence models, What are the 3 types of AI and What are the different models of AI Models





In the evening there was an Interactive talk by Mr. Vimal Panjwani (Founder, AgriVijay)







Session by Mr. Sarang Nerkar (Founder & CEO, Innosapien technologies Pvt. Ltd.) on Applications of Artificial Intelligence in the Agriculture Sector ..!













In the evening there was an Entertainment show for the fellows by Baramati Rappers Group.





Introduction to Robotics in Agriculture Session Mr. Shubham Sahu (Technology & Ecosystem Manager, AIC-ADT Baramati) delivered session on Robotics Orientation, Need, Design & Development, Sensing & Perception, Robot Decision making apart from this fellows got experience of Drone assembling and flying.













Design Thinking & Concept Prototyping Mr. Shubham Sahu (Technology & Ecosystem Manager, AIC-ADT Baramati) conducted session on Design Thinking & Concept Prototyping.











Visit to Sahyadri Farms Nashik, Mr. Vilas Shinde (Chairman & MD, Sahyadri Farmers Producer Co. Ltd.) guided fellows on his Journey from a Farmer to Chairman of Sahyadri Farmers Producer Company...!











Session on Business Model & Pitch, Mr. Ram Bende (Coach, Mentor, Trainer) conducted Brainstorming session on How to use Business Canvas Model & Prepare a Business Plan. Fellows also got some ideas about How to Pitch their Business plan...!







**DAY 20** 





In the evening there was an Interactive talk by Mr Abhijit Panshikar (Founder, Ayurcin Biogenics Pvt. Ltd.







Session on Soft Skill & Personality Development by Ms Pratibha Golande (Founder, PM Education and Business Solutions) And Critical Report Writing by Dr. Hemangi Raul, Assistant Prof. (English)



In the afternoon Reflection papers were filled up by all the fellows in order to know their transformation as a trainee within these 21 days bootcamp.



## **CONCLUDING CEREMONY SNIPPETS**



## **FUTURE ENGAGEMENTS**



# Fellows Mentor Connection

# Incubation Support



### Need based Designed Workshops for Fellows

## **IDEAS RECEIVED**

#### **CIRCULAR FOOD SYSTEMS MODEL**

Circular Food Systems as an effective climate action in the Climate Action Position Paper which was presented at the 2021 United Nations Climate Change Conference (COP26) in Glasgow. Based on this recommendation the fellows have designed a model. In this model the fellows have made use of the various technologies they learned during the 21 day bootcamp at ADT Baramati while aligning with their SMART goals. The team of 6 fellows along with their mentor Sarang Nerkar will work on the model for the better world.

#### JAM SLICE

My idea is to make a slice of jam, which is ready to eat product. Which will be feasible for mass market & it is time consuming. The slice of jam is more feasible than the scoop of jam from bottle. According to me it can have a worth profits.



**Shivendra Bhosale** 

#### **SMART BIOSENSOR**

Plants affected by insects, pests or virus is one of the severe problem faced by farmers in every region. So my aim is to develop a sensor which will be able to detect plant disease. in results, farmers will be able to control attacks of insects, pests or virus in their first stage of infection. It will be useful for farmers to improve their economy as well as to reduce the use of chemical fertilizers.



Vaishnavi Yelmame



#### **BLACK GOLD RICE**

My Business Model name is the **Black Gold Rice** Business Model to provide market for black rice and providing the nutrients, Organic, cheap black rice product to urban and metropolitan citizen. The farmers and tribal community will increase the income speedily, the indigenous crop will conserved, available market and food, body tonic and nutritious will be available in the one product. This business model is to B to B and B to C.

#### **TO PRODUCE BIOMETHANE FROM**

cactus plant as a fuel for vehicle in upcoming days. Because production of methane gas through biogas plant is an ancient technique. But in the present study we have used cactus (Opuntia spp.) plant as a biomass for biomethane production. Cactus is a CAM plant and an abundant source of biomass to produce biomethane in large and commercial scale.

Suraj Bhandekar



Vikramsinh Pasale

#### OCEAN FARMS RE-IMAGINE FARMING

Our aim is to cultivate seaweed and at the same time make byproducts like fortified Jams, nutribar and Liquid Seaweed Fertilizers (LSF).

We will be linking varied sectors such as agriculture, hotel industry, existing LSF Industries, Zilla Parishad Schools as our end consumers.



Suraj Mishra & Akshay Jadhav

### **FEEDBACK FORMS**



#### A FEEDBACK FORM TO GET INSIGHTS FROM FELLOWS TO UNDERSTAND WHAT WE'RE DOING WELL AND WHAT WE NEED TO IMPROVE DURING BOOTCAMP











# **REFLECTION PAPERS OF FELLOWS**

Best 3 reflection papers were awarded at concluding ceremony on 19th january 2022 at the auspicious hands of hon'ble. sharadchandra pawar (president, agricuture development trust, baramati)

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t. What have you learned about yourself as a result of the 21 days of experience? [100 words Max) \*

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2. What development do you see in yourself after this 21 days repetience? (100 words Max

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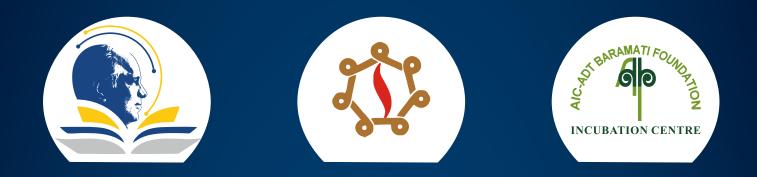


**Dr. Vivek Sawant** Former Managing Director MKCL

Hearty Congratulations to the coordination team of Sharad Pawar Inspire Fellowships in Agriculture.

I am sure that the nurturance process during fellowship shall enable the fellows to create innovations to boost productivity, quality, profitability and sustainability of Indian agriculture. The fellows will attempt to achieve climate resilience on one hand and consumer health and delight on the other.

My best wishes to the fellowship program for triggering innovations to end farmers' distress and enhance farmers' success and dignity..



# SHARAD PAWAR INSPIRE FELLOWSHIP (AGRICULTURE)



Implemented by

#### INNOVATION & INCUBATION CENTRE-AGRICULTURAL DEVELOPMENT TRUST, BARAMATI

For More Details :

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