

FESTIVAL OF INNOVATION AND ENTREPRENEURSHIP 2019



सत्यमेव जयते

नवप्रवर्तन एवं उद्यमिता का उत्सव

का शुभारम्भ

श्री राम नाथ कोविन्द

भारत के माननीय राष्ट्रपति

द्वारा

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रा. न. प्र. , ग्रामभारती, अमरापुर, गांधीनगर

**FESTIVAL OF INNOVATION
AND ENTREPRENEURSHIP**

Inaugurated by

SHRI RAM NATH KOVIND

HON'BLE PRESIDENT OF INDIA

15th March 2019

NIF, Grambharti, Amrapur, Gandhinagar



राष्ट्रीय नवप्रवर्तन प्रतिष्ठान – भारत

विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार का स्वायत्तशासी संस्थान

National Innovation Foundation - India

Autonomous Body of the Department of Science and Technology, Govt. of India

March 15-19, 2019

Executive Summary

Hon'ble President of India, Shri Ram Nath Kovind, inaugurated the Festival of Innovation and Entrepreneurship (FINE) 2019 at NIF, Grambharti, Gandhinagar, Gujarat on the 15th March, 2019. The President presented the 10th Biennial National Grassroots Innovation Awards, visited the Innovation Exhibition and interacted with the 6th batch of Innovation Scholars In-Residence programme.

FINE is country's flagship initiative towards recognizing and rewarding creativity of common man of our country. Organized by Department of Science and Technology (DST), Government of India and the National Innovation Foundation - India under the aegis of Rashtrapati Bhavan, FINE is unique effort in the sense that it promotes Science, Technology and Innovation and together bring about a cultural shift amongst citizens for profound interest in Entrepreneurship.

Speaking on the occasion¹, Hon'ble President said that as we seek to meet important developmental goals and build a caring, inclusive and happy society, we have to draw upon the power of innovation to find solutions to India's concerns in diverse domains such as health, education, food security, energy access, environmental protection, and national security. We have to make all efforts to promote an innovation culture and become an innovation society. This will provide us the best possibility of ensuring that every young Indian will have an opportunity to realise his or her true potential.

¹ <http://pib.nic.in/PressReleaseDetail.aspx?PRID=1568896>

Hon'ble President said that an innovative idea in itself is not enough. It is important to ensure that a creative idea gets the support it needs for its maturing, diffusion and delivery on the ground. Innovation itself is only the first of two key drivers to ensure that any innovation becomes actionable. The second key driver is entrepreneurship, which needs to supplement innovation so as to deliver benefits to our fellow citizens. We need to build an ecosystem for converting innovations into enterprises. This requires backing for start-ups and for incubating young innovators by providing financial, mentoring and policy support.

As a part of FINE, roundtables were held on five distinct themes where innovators, representatives from various Ministries, State Governments and Public / Private S&T Institutions, Scientists, Entrepreneurs / Start - ups, Regulators, Industry chambers participated. The themes for FINE 2019 were S&T led Innovations for

1. Scaling up and commercialization of innovations
2. Unleashing the potential of Indian Agriculture – Increasing wealth creation and employment
3. Healthcare and Nutrition
4. Inclusive Development
5. Waste to Wealth

In addition, an Open session was held on the theme of Incubators and Start-ups & Women led start-ups which had a participation from youth – budding entrepreneurs and students from professional courses who had an opportunity to interact with some of the stalwarts of present day entrepreneurship, incubation and start-up eco-system in the country.

The innovation exhibition saw participation from grassroots innovators, innovative school children particularly the winners of INSPIRE Awards

- MANAK 2018-19 and to motivate them thousands of visitors experienced their innovations during the four day festival. As a matter of fact, two grassroots innovators from ASEAN Member States also participated in the innovation exhibition.

On this occasion, an interactive session was also organized between experts in various fields from various academic, public and private institutions in the country and grassroots innovators focused on identifying the directions for meaningful incubation of the latter.

On 19th March, 2019 during the concluding session of FINE 2019, key recommendations in form of a rapportization summary of all five roundtables was presented before Secretary to the President of India at Rashtrapati Bhavan. On this occasion, the 6th batch of Innovation Scholars In-Residence programme shared their experiences of FINE 2019.

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INAUGURATION OF THE FESTIVAL OF INNOVATION AND ENTREPRENEURSHIP (FINE) 2019

Hon'ble President of India Shri Ram Nath Kovind and the Governor of Gujarat Shri O P Kohli was received by Prof Ashutosh Sharma, Secretary, Department of Science and Technology; Dr P S Goel, Chairperson, NIF and Dr Vipin Kumar, Director, NIF on arrival at NIF, Gandhinagar.



Hon'ble President of India and Hon'ble Governor Shri of Gujarat being received by Prof Ashutosh Sharma, Dr P S Goel and Dr Vipin Kumar

Hon'ble President of India inaugurated the Festival of Innovation and Entrepreneurship (FINE) 2019 by cutting of ribbon at the Exhibition Ground, NIF.



Hon'ble President of India inaugurating the Festival of Innovation and Entrepreneurship (FINE) 2019

The inauguration of the Festival of Innovation and Entrepreneurship (FINE) 2019 marks the beginning of celebration of creativity, innovation and entrepreneurship. During the Festival, the common people of the country get recognized for their innovations and it's an opportunity to exhibit their work and get meaningfully connected with other stakeholders in the value chain.

The inauguration was followed by visit to the Innovation Exhibition which was organized as a part of the Festival of Innovation and Entrepreneurship (FINE) 2019.

VISIT OF HON'BLE PRESIDENT OF INDIA TO THE INNOVATION EXHIBITION

Hon'ble President of India visited the Innovation Exhibition which comprised of products and prototypes of more than 140 grassroots innovators and creative children from various parts of the country. The exhibition had a rich diversity by virtue of having grassroots innovators whose technologies in various domains viz. Engineering, Agriculture and Veterinary Sciences were being recognized during 10th Biennial Grassroots Innovation awards and the children whose technologies were recognized during INSPIRE Awards – MANAK 2018 - 19. Innovators from different parts of the country, even from the last mile and remote areas, of all ages, engaged in a variety of occupations exhibited their innovations at the Innovation Exhibition.



Hon'ble President of India visiting the innovation exhibition during the Festival of Innovation and Entrepreneurship (FINE) 2019



Hon'ble President of India visiting the innovation exhibition during the Festival of Innovation and Entrepreneurship (FINE) 2019



Hon'ble President of India interacting with the creative children who were recognized during INSPIRE Awards – MANAK 2018 - 19



Hon'ble President of India interacting with the creative children who were recognized during INSPIRE Awards – MANAK 2018 - 19



Hon'ble President of India visiting the innovation exhibition during the Festival of Innovation and Entrepreneurship (FINE) 2019

INTERACTION OF HON'BLE PRESIDENT OF INDIA WITH THE 6TH BATCH OF INNOVATION SCHOLARS IN-RESIDENCE PROGRAMME

Post the visit to the Innovation Exhibition, the 6th batch of Innovation Scholars In - Residence programme introduced themselves to the Hon'ble President of India Shri Ram Nath Kovind and Hon'ble Governor Shri of Gujarat Shri O P Kohli.

On the occasion, Hon'ble President of India expressed his optimism that the innovations will be able to reach the market and benefit the society and common man of the country.



Hon'ble President of India Shri Ram Nath Kovind and Hon'ble Governor Shri of Gujarat Shri O P Kohli along with the 6th batch of Innovation Scholars In - Residence programme

List of Innovation Scholars 2019

- Shravan Kumar Bajya - Onion Harvester | Rajasthan
- Abhishek Bhagat - Automatic Cooking Machine | New Delhi
- Dipak Bharali - Design making by weft insertion method | Assam
- Jagdish Prasad Pareek - New Cauliflower variety | Rajasthan
- Chhaya Thakor - Inclined installation of water taps | Gujarat
- Sulochana Kakodia - Fully automatic toilet cleaning machine | MP
- Dipankar Das - Solar Pulses Thresher | Andaman & Nicobar Islands
- Madanlal Kumavat - Multi-crop Thresher | Rajasthan
- Indrajit Singh Khas - Turmeric and Ginger Planter | Maharashtra
- Sikanto Mandal - Mobile Garbage Collecting Device | UP
- Ishwar Singh Kundu - Multi utility herbal formulation | Haryana

Mr Mahesh Patel and Mr Tushar Garg were the two co-ordinators from NIF, present during the interaction between the Hon'ble President and innovation scholars.

10TH BIENNIAL NATIONAL GRASSROOTS INNOVATION AWARDS

Hon'ble President of India, Shri Ram Nath Kovind, presented the 10th Biennial National Grassroots Innovation Awards on 15th March, 2019 at NIF, Gandhinagar.

During the address, Hon'ble President observed "This festival is a celebration of creativity, innovation and entrepreneurship and till 2018, it had been hosted at Rashtrapati Bhavan. This year it was decided to organise it outside Rashtrapati Bhavan. Earlier people used to come to the Festival, this year the Festival has come to the people. And indeed, I am glad that this Festival is being organised here in Gujarat for two reasons. Firstly, Gujarat is known as a land of innovation and entrepreneurship. And secondly, this Festival is being held here during the year in which we are celebrating the 150th birth anniversary of perhaps the greatest Gujarati of all time, the Father of our Nation, Mahatma Gandhi. Gandhiji strongly advocated finding local solutions to local problems. This thought was inherent in his idea of Gram Swaraj."

Hon'ble President appreciated the efforts of NIF, and the support extended to the grassroots innovators as a result of which three innovators who were incubated by NIF were selected for the Padma Shri this year. He added they received Biennial National Grassroots Innovation Award in past and NIF's award was the first recognition for their innovations. These innovators are Shri Jagdish Prasad Parikh who developed a new variety of cauliflower, Shri Uddhab Kumar Bharali who developed a Pomegranate Deseeder, Arecanut peeler and a Bamboo splitting machine, and Shri Vallabhbhai Vasrambhai Marvaniya who developed an improved carrot variety; all put together benefitting thousands of farmers and citizens.

Hon'ble President complimented the Department of Science and Technology, Government of India and NIF for efforts in organising this Festival. He said one important takeaway is need for us to ensure that innovative ideas mature into sustainable enterprises in order to maximize the innovation's benefit to society and the nation.



Hon'ble Governorshri of Gujarat Shri O P Kohli releasing the 10th Biennial National Award book and presenting its first copy to the Hon'ble President of India

Hon'ble Governorshri of Gujarat Shri O P Kohli released the 10th Biennial National Award book and presented its first copy to the Hon'ble President of India. He expressed his happiness and gratitude towards the Hon'ble President for having Gujarat host the Festival of Innovation and Entrepreneurship 2019. He further said during the innovation exhibition which Hon'ble President of India inaugurated today, he was particularly impressed by the sense of priority that

young school students associate with leveraging Science, Technology and Innovation to solve problems. He added it was heartening to see the prototypes that have been built by students very meticulously to move a step closer to their innovative end solutions which also reflects their commitment towards society, in making it more productive, which is a healthy sign for our country.



Release of the 10th Biennial National Award book

On this occasion, Prof Ashutosh Sharma, Secretary, Department of Science and Technology; Dr P S Goel, Chairperson, NIF and Dr Vipin Kumar, Director, NIF was also present.



Hon'ble President of India Shri Ram Nath Kovind being felicitated by Prof Ashutosh Sharma, Secretary, Department of Science and Technology



Hon'ble Governorshri of Gujarat Shri O P Kohli being felicitated by Dr PS Goel, Chairperson, NIF



Address by the Hon'ble President of India

Speaking on the occasion, Prof Ashutosh Sharma, Secretary, Department of Science and Technology said receiving award from the Hon'ble President is the most inspirational moment of the lifetime for all the innovators. He extended his thanks to Hon'ble President for his guidance and continued support to the mission of promoting S&T led innovations and entrepreneurship. He said at FINE we get to see several need based innovations and overall the festival demonstrates the strength of the supply side of our Technologies.

Dr P S Goel, Chairperson, NIF said Festival of Innovation and Entrepreneurship not only boosts innovation and entrepreneurship in India but also sends an important message to our citizens, that the country cares for their innovations. He urged all citizens to be an ambassador of FINE and play a role in strengthening the eco-system to the best extent possible by encouraging those who innovate in this country.



Prakash Singh Raghuwanshi conferred with Lifetime Achievement award

*Technology -
Improved
plant
varieties of
wheat,
paddy,
pigeon pea
and mustard*



Shyambir Singh (Haryana) was conferred with National Award 1st

*Technology -
Tractor
Mounted
Paddy
Transplanter*



*Technology -
Tractor
Mounted
Paddy
Transplanter*

Ved Prakash (UP) was conferred with National Award 1st



*Technology -
Improved
Onion
Variety*

Sandip Ghole (Maharashtra) was conferred with National Award 1st



*Technology -
Intelligent
sun glasses
for blind*

Anang T (Arunachal Pradesh) was conferred with National Award 1st



*Technology -
Modified
combine for
Maize
harvesting*

Gurtej Singh (Punjab) was conferred with National Award 2nd



*Technology -
Low cost
tractor
powered
sprayer*

Gurmeet Singh (Rajasthan) was conferred with National Award 2nd



*Technology -
Toilet
attached cot
with
automatic
cleaning
system
through
remote control*

S Saravanamuthu (Tamil Nadu) was conferred with National Award 2nd



*Technology -
Improved and
Early
Maturing
Variety of
Cauliflower*

Sanjeev Kumar (Bihar) was conferred with National Award 2nd



*Technology -
Herbal
medication for
anestrus*

Vilat Yadav (Bihar) was conferred with National Award 2nd



10th Biennial National Grassroots Innovation Award function

COMPLETE LIST OF AWARD WINNERS

Lifetime Achievement award

	<i>Name</i>	<i>State</i>	<i>Technology</i>
1.	<i>Prakash Singh Raghuvanshi</i>	<i>Uttar Pradesh</i>	<i>Improved plant varieties of wheat, paddy, pigeon pea and mustard</i>

National Award - First

	<i>Name</i>	<i>State</i>	<i>Technology</i>
2.	<i>Shyambir Singh and Ved Prakash</i>	<i>Haryana and Uttar Pradesh</i>	<i>Tractor Mounted Paddy Transplanter</i>
3.	<i>Sandip Vishram Gholze</i>	<i>Maharashtra</i>	<i>Sandip Pyaz: Improved Onion Variety</i>
4.	<i>Anang Tadar</i>	<i>Arunachal Pradesh</i>	<i>Intelligent sun glasses for blind</i>
5.	<i>Periyasami Ramasami*</i>	<i>Tamil Nadu</i>	<i>Herbal medication for Coccidiosis</i>

National Award - Second

	<i>Name</i>	<i>State</i>	<i>Technology</i>
6.	<i>Gurtej Singh</i>	<i>Punjab</i>	<i>Modified combine for Maize harvesting</i>
7.	<i>Gurmeet Singh Bhupal</i>	<i>Rajasthan</i>	<i>Low cost tractor powered sprayer</i>
8.	<i>S Saravanamuthu</i>	<i>Tamil Nadu</i>	<i>Toilet attached cot with automatic cleaning system through remote control</i>
9.	<i>Sanjeev Kumar</i>	<i>Bihar</i>	<i>Sanjeev Selection: Improved and Early Maturing Variety of Cauliflower.</i>
10.	<i>Vilat Yadav</i>	<i>Bihar</i>	<i>Herbal medication for anestrus</i>

National Award - Third

	<i>Name</i>	<i>State</i>	<i>Technology</i>
11.	<i>Maharaj Singh Lodhi</i>	<i>Madhya Pradesh</i>	<i>Combi-tillage implement & Modified MB Plough</i>
12.	<i>Prafulla Kumar Meher</i>	<i>Odisha</i>	<i>Automatic weft winding machine</i>
13.	<i>Ram Prasad Meher</i>	<i>Odisha</i>	<i>Automatic weft winding machine</i>

14.	<i>Suresh P V</i>	<i>Kerala</i>	<i>Automated Arecanut climbing and harvesting machine</i>
15.	<i>Jitabhai Kodarbhai Patel</i>	<i>Gujarat</i>	<i>JK-1: Improved Variety of Dolichos lablab (Lablab)</i>
16.	<i>Desai Laxmanbhai Devkaranbhai</i>	<i>Gujarat</i>	<i>Herbal medication for bloat</i>

State Award

	<i>Name</i>	<i>State</i>	<i>Technology</i>
17.	<i>Keisham Thoibi Devi</i>	<i>Manipur</i>	<i>Tha Animakhai Chhabi: Traditional Cauliflower Variety</i>
18.	<i>Datatrey Nanasaheb Kale</i>	<i>Maharashtra</i>	<i>Sarita Seedless and Nanasaheb Purple Seedless: Improved Varieties of Black Grapes</i>
19.	<i>Roshan Lal</i>	<i>Himachal Pradesh</i>	<i>Herbal formulation for control of insects in wheat and vegetables</i>
20.	<i>Jyotsna Mayee Patra</i>	<i>Odisha</i>	<i>Herbal preparation for protecting rice crop and vegetables against insect pests and diseases</i>

21.	<i>Dayaram Vishram Chouhan</i>	<i>Odisha</i>	<i>Tamarind De-seeder, Multi seed decorticator & Cashew peeling machine</i>
22.	<i>Kacharu Katara, Nathubhai, Rathubhai, Ramaji Bhimaji</i>	<i>Rajasthan & Gujarat</i>	<i>Herbal medication for bloat</i>
23.	<i>Vijay Ram</i>	<i>Uttarakhand</i>	<i>Herbal medication for bloat</i>
24.	<i>Imna Meren</i>	<i>Nagaland</i>	<i>Small animal restrain cum operation table</i>
25.	<i>P Ravi</i>	<i>Tamil Nadu</i>	<i>Jacquard lifting machine</i>
26.	<i>P A Sekar</i>	<i>Tamil Nadu</i>	<i>Multi-stripe weaving machine</i>
27.	<i>Durlov Gogoi</i>	<i>Assam</i>	<i>Reciprocating tea dryer and mini tea steamer</i>
28.	<i>Suren Barua</i>	<i>Assam</i>	<i>BSD Dryer for green Tea, Rolling table, Tea steamer and Cooling bed</i>
29.	<i>Ghanshyam Jadhav</i>	<i>Maharashtra</i>	<i>Tillage equipment with mechanical sensor</i>
30.	<i>Nannem Tirupathi Rao</i>	<i>Andhra Pradesh</i>	<i>Pole Climber</i>

31.	<i>Arjunbhai M Paghdar</i>	<i>Gujarat</i>	<i>Modified wood based culturally accepted crematorium</i>
32.	<i>Durga Devi</i>	<i>Uttar Pradesh</i>	<i>Baisakhi (Crutch) 2017</i>

Consolation

	<i>Name</i>	<i>State</i>	<i>Technology</i>
33.	<i>Babasaheb Nanabhau Pisore</i>	<i>Maharashtra</i>	<i>Sona-40: Improved and High Yielding Onion Variety</i>
34.	<i>Roy Mathew</i>	<i>Kerala</i>	<i>Souwriyamakkal: Improved Nutmeg Variety with Good Quality Mace</i>
35.	<i>Leimapokpam Helendro Singh</i>	<i>Manipur</i>	<i>Helen morok: Improved Variety of Chilli</i>
36.	<i>Vithal Nivruti Thorat</i>	<i>Maharashtra</i>	<i>Nath Jambo Seedless: Improved Grapes Variety</i>
37.	<i>Kishan Singh</i>	<i>Himachal Pradesh</i>	<i>Herbal formulation for the management of insect pests and fungus infesting Cabbage and Cauliflower</i>
38.	<i>Divya Sharma</i>	<i>Himachal Pradesh</i>	<i>Herbal formulation for protection of fruits and vegetables against insect pests and termites</i>

39.	<i>Laxmiben Pratapji Thakarda</i>	<i>Gujarat</i>	<i>Herbal medication for bloat</i>
40.	<i>Shamalbhai Kanabhai Gamar</i>	<i>Gujarat</i>	<i>Herbal medication for mastitis</i>
41.	<i>Jhabarmal Khokhar</i>	<i>Rajasthan</i>	<i>Tractor mounted multi-crop harvester</i>
42.	<i>Nileshbhai Dobariya & Pankajbhai Lunagariya</i>	<i>Gujarat</i>	<i>Mobile groundnut thresher</i>
43.	<i>Lakhanlal Patel*</i>	<i>Chhattisgarh</i>	<i>Sunflower seed extractor</i>
44.	<i>Saruj Chetia</i>	<i>Assam</i>	<i>Reeling machine for muga and mulberry</i>
45.	<i>Subhash Vasantrao Jagtap</i>	<i>Maharashtra</i>	<i>Chandan paste making machine</i>
46.	<i>Sapan Kumar Mandal</i>	<i>West Bengal</i>	<i>Slider swing</i>
47.	<i>Mohan Muktaji Lamb</i>	<i>Maharashtra</i>	<i>Cowdung collecting machine</i>

48.	<i>Towseef Ali Malik</i>	<i>Jammu & Kashmir</i>	<i>Portable room heater (Bukhari)</i>
49.	<i>Lanu L Jamir*</i>	<i>Nagaland</i>	<i>Electronic load controller</i>
50.	<i>Sourav Dey</i>	<i>Jharkhand</i>	<i>Lac processing machine</i>
51.	<i>Zufa Iqbal*</i>	<i>Jammu & Kashmir</i>	<i>Namada rolling machine</i>

Appreciation

	<i>Name</i>	<i>State</i>	<i>Technology</i>
52.	<i>E. V. Thomas</i>	<i>Kerala</i>	<i>Edavarembil Gold: Improved Nutmeg Variety with Good Quality Nuts</i>
53.	<i>Rohit Sahu</i>	<i>Chhattisgarh</i>	<i>Kubri Mamhani Selection and Kamal paddy- Green Rice Varieties</i>
54.	<i>Syed Ghani Khan</i>	<i>Karnataka</i>	<i>Mosambi Mango & Seb Mango: Traditional Mango Varieties</i>
55.	<i>Gameti Vishrambhai Somabhai</i>	<i>Gujarat</i>	<i>Herbal medication for bloat</i>
56.	<i>Gurpreet Maan</i>	<i>Punjab</i>	<i>Double axlerotavator</i>
57.	<i>Shaji Varghese</i>	<i>Kerala</i>	<i>Fruits and vegetable capper</i>

58.	<i>Jignesh S Shah</i>	<i>Gujarat</i>	<i>Modified two wheeler vehicle for specially-abled</i>
59.	<i>S. Vanchinathan</i>	<i>Tamil Nadu</i>	<i>Manual hand lever based tapioca plant up-rooter</i>

Partnership Award

	<i>Organisation</i>	<i>State</i>
1.	<i>State Council of Science Technology and Environment, Govt of Meghalaya</i>	<i>Meghalaya</i>
2.	<i>Rajiv Gandhi Shiksha Mission, Department of School Education, Govt of Chhattisgarh</i>	<i>Chhattisgarh</i>
3.	<i>Department of Agriculture and Farmers' Empowerment, Govt of Odisha</i>	<i>Odisha</i>

** Could not attend the award function in person due to unavoidable circumstances*

ROUNDTABLES DURING FINE 2019

During Festival of Innovation and Entrepreneurship 2019, roundtables on five distinct themes of contemporary importance were organized where experts in the relevant areas had participated.

Roundtable on S&T led innovations for -

- Scaling up and commercialization of Innovations
- Unleashing potential of Indian Agriculture - Increasing wealth creation and employment
- Healthcare and Nutrition
- Inclusive development
- Waste to Wealth

The roundtables saw participation from various Public Institutions, Academic Institutions, Ministries, Technology Business Incubators (TBI's), Financial Institutions, Universities, Innovators, Start-ups, Industry Chambers and others.

The panellists shared their insights into the topic, broadly highlighting the current practices and the probable next practices, whilst generating recommendations at the end of the roundtable.

The key recommendations of each roundtable were presented before the Secretary to the President on 19th March, 2019 at Rashtrapati Bhavan during the concluding session of FINE 2019.

ROUNDTABLE ON S&T LED INNOVATIONS FOR SCALING UP AND COMMERCIALIZATION OF INNOVATION

Chair - Dr. Arabinda Mitra, Scientific Secretary to PSA
Co - Chair - Shri Harkesh Mittal, Adviser & Head, NSTEDB, DST

The round-table saw participation from various Public Institutions, Ministries, Technology Business Incubators (TBI's), Financial Institutions, Universities, Innovators and others.



Roundtable on S&T led innovations for Scaling up and commercialization of Innovation

The discussion amongst other things encompassed social and commercial dissemination of innovations for the masses such that innovations become more easily accessible and available to common man.

Key Recommendations –

- The concept of City Knowledge Clusters which is already introduced in certain cities like Chandigarh, Pune, Kolkata and planned to be introduced in Hyderabad and Delhi need to be expedited and replicated in PAN India. This platform could connect the dots of ecosystem together leading to enhanced networking.
- The supply side of technologies is strong but is disintegrated as of now. Therefore a national portal of potential technologies be developed and updated in a real time manner such that those generating demand could be satisfied. The same platform could act as a facilitator for realization of Sustainable Development Goals (SDG).
- Encouraging the Institutions (both Public and Private) to onboard their technologies to the existing Accelerating Growth for New India innovations (AGNIi) platform such that connect to market is established and in the process latter's portfolio grows richer.
- Technologies developed by public institutions be commercialized by adopting strategies like handholding of the receiving industry partner/ Entrepreneur which needs facilitation support.
- Since the approach of one size does not fit all holds true, there is a need to rethink on scalability of enterprises in priority sectors like agriculture which requires a greater engagement of the private sector for a fast track progress.
- High-Tech innovation in the field of atomic energy and similar disciplines to develop more use cases for direct applications.
- Learning from the experiences of other countries in developing application oriented research programs and ascertaining the performance of innovation prior to making a decision on commercialization. By doing so, the best if not the largest portfolio can be built, majority of which can be commercialized.

- Since quality of human capital is an essential determinant of the fate of an enterprise, facilitation of scouting and deployment of world class talent in Indian start-ups is needed.
- Institutionalizing the knowledge management for both success and failures of start-up ecosystem in India for a detailed analysis and lessons, which can be guiding principles for budding entrepreneurs. Similarly a robust risk management framework be integrated such that if there is a certain failure anticipated, then it fails early.
- Technologies which have failed historically due to external factors be revisited and given a second opportunity to prove the inherent merit. Efforts in this direction can be periodically and strategically be made.
- Organizing a Technology demonstration day where producers, consumers, facilitators, intermediaries etc. are under one single roof and potential takers be identified and given the rights to take the technology forward, thereby reducing time to market.
- The visible financial success be associated right priority such that it could be a model to emulate those who are aspiring to succeed.
- Setting up Training Institutes at the grassroots level.

Shri H K Mittal, Adviser & Head, NSTEDB, DST made a mention on soon to be launched initiative titled RIPE (Rural Innovations Promotion through Entrepreneurship) wherein NIF will lead the convergence of rural innovations and entrepreneurship across the country. This is on the side-lines of the key recommendations of Round Table on S&T led Innovations for Scaling up and commercialization of innovations in pursuit of identifying an enhanced pivotal role that NIF could play in strengthening innovation and entrepreneurship eco-system in the country.

ROUNDTABLE ON S&T LED INNOVATIONS FOR UNLEASHING POTENTIAL OF INDIAN AGRICULTURE - INCREASING WEALTH CREATION AND EMPLOYMENT

Chair - Dr P L Gautam, former Chairperson, Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA) & National Biodiversity Authority (NBA)

Co - Chair - Dr S A Patil, former Director IARI, New Delhi and former VC, UAS, Dharwad

The round-table saw participation from various Public Institutions, Universities, Innovators and others.



Roundtable on S&T led Innovations for Unleashing potential of Indian Agriculture - Increasing wealth creation and employment

The discussion amongst other things encompassed leveraging value addition by way of farm mechanization, developing climate resilient technologies, organic farming, accessing indigenous system for crop protection and livestock healthcare.

Key Recommendations -

Integrated management for sustainable development:

- It was suggested that integrated farming models suitable for different ecosystems should be developed and demonstrated so that farmers receive enhanced income regularly from different ventures such as crop, animal husbandry, poultry, fisheries, apiary, mushroom etc.
- Environment friendly technological solutions from indigenous innovations for improving soil health and ensuring effective control of agriculture pests, livestock ailments etc may be assessed/refined and disseminated. Use of strategies like biopesticide in organic farming, insect based pest control measures should be standardized /emphasized
- Promotion of precision farming, food processing, application of IT solutions, conservation agriculture , green house technologies etc may be emphasized for commercialization of agriculture and attracting /retaining youths in agriculture

Upscaling rural innovations: The broad modalities for popularization of rural innovations should be emphasized with focus on:

- Integrating technologies developed by farmers which remain at local areas in their occupational activities
- Documentation of success stories of grassroots innovations for motivating and benefitting other farmers

- Establishment or leveraging the role of NIF across different regions/states in the country to know more about farmers innovations through appropriate institutional convergence
- Network of ICAR- Krishi Vigyan Kendra and ICAR-AICRP should take up relevant grassroots technologies for verification, validation and further diffusion among the farmers. An effective interface/linkage of these networks with NIF should be established.

Collaboration and linkages with other organizations:

- NIF and ICAR have signed an MoU for testing and promotion of useful technologies. It is recommended that a joint program for this purpose should be developed, implemented and monitored regularly.
- To start with, about 30 potential technologies identified by NIF may be enlisted for joint validation, value addition and diffusion under the above MoU.
- NIF should also collaborate with Agriculture/Veterinary/General Universities for documenting, testing and promotion of useful technologies.

Farm mechanization:

- There is requirement of need based farm mechanization including availability of access to low cost farming equipment by resource poor farmers.
- Enhancing automation in farm activities have to be ensured with focus on development of multitasking equipment.
- Reduction of post-harvest loss by developing suitable methods/processes and their dissemination

Value addition to Technologies:

- Crop residues, shelf life of fruits & organic waste should be value added through innovations for technological intervention
- Farmers varieties may be assessed for their climate resilience and quality attributes
- The business centers of NIF and those of ICAR, CSIR etc., should be networked for enhanced synergy, visibility and contributions for handholding support and facilities to the grassroot entrepreneurs

ROUNDTABLE ON S&T LED INNOVATIONS FOR HEALTHCARE AND NUTRITION

Chair - Prof K S Dhiman, Director General - Central Council for Research in Ayurvedic Sciences (CCRAS), New Delhi

Co-Chair - Prof S K Maulik, Professor, Department of Pharmacology, AIIMS, Delhi

The round-table saw participation from various Public Institutions, Academic Institutions, Industry and Innovators.



Roundtable on S&T led Innovations for Healthcare and Nutrition

The discussion amongst other things encompassed awareness on healthcare & nutrition and related Government schemes, accessibility to affordable medicines, diagnostic systems; and building a network of stakeholders for complementing each other's efforts.

Key recommendations –

- A comprehensive National Health Policy with inherent flexibility for the States to suitably modify as per its requirements as every region has a different health care facilities, infrastructure, food habits, population structure, ecology, climate and weather conditions; the nutritional needs also change place to place.
- The creation of a “Population Health Index” as the focus of National Health Policy incorporating purely health related evaluation parameters to indicate broadly the health status of the citizens of the country. This is considering the fact that there is a large disparity in health status of individuals across the country, which is due to their food habits, climate and region. Similarly the nutrition status also varies from population to population and region to region.
- The integration of various scientific systems of medicine (Allopathy, Ayurveda, Unnani, Siddha, Homeopathy), utilising their individual strengths, in an attempt to provide improved health care options for the people.
- Generating scientific clinical evidence for Ayurvedic medicines (and of other traditional systems) and contemporary functional traditional knowledge so as to promote its integration into modern medicine system.
- Start-ups developing useful innovative low cost diagnostic or medical instruments, Point-of-care devices, as per the regulatory guidelines, should be supported for R&D, manufacturing and marketing. These products should be preferred under the public procurement system. Necessary regulatory processes/ testing/

validation should be prioritised for such start-up products. The use of mobile telephony, ICTs should be promoted in medical healthcare.

- Strong network between research institutions, start-up incubation centres, doctors and entrepreneurs should be established to facilitate commercialization of indigenous technologies.
- Increasing awareness about nutritious traditional food among all age groups, which can be through incorporation of such information in school text books, gaming platforms, using comic characters, etc. Similarly, improving consciousness about the food practices/products that have adverse effect on health through various means.
- Regulating release of those advertisements, which give false claims about treating various health issues, and penalising the producers, broadcasters and marketing agents. Suitable provisions for such frivolous advertisements could be incorporated under existing laws.
- Psychological health is as important as physical health especially in today's fast paced world where stress levels are high. Mental Well Being Centres should be established in Hospitals or as a separate entity to provide medical services focussing on various mental health problems.
- The necessary operational and food safety guidelines are available for food processing industry. However, a large number of such players are available in the unregulated market, which continues to be a health hazard for the people. Suitable guidelines for the same may also be drafted.

ROUNDTABLE ON S&T LED INNOVATIONS FOR INCLUSIVE DEVELOPMENT

Chair - Dr P S Goel, Chairperson, NIF & Honorary Distinguished Professor, ISRO

Co-Chair - Dr V. Bhujanga Rao, FNAE, ISRO Chair Professor, NIAS

The round-table saw participation from various Public Institutions, Academic Institutions, Ministries, Innovators and others.



Roundtable on S&T led Innovations for Inclusive development

The discussion amongst other things encompassed leveraging innovative technologies and their exchange for the societal good.

Key recommendations –

- In situ model of innovation, as promoted and executed by National Innovation Foundation – India should be replicated by incubators all over the country where all services are provided at the door steps of the people facilitating local entrepreneurship.
- For increasing awareness, sharing of the best practices/ success stories/ successful start-ups / policies & regulations, is extremely important. This may be also done using the whitespace (spectrum) in televisions, social media, short videos beaming over internet, public media etc.
- Technologies like mobiles, AI should be leveraged for monitoring, providing services, information, etc.
- For workers, continuing learning becomes very important for updating their skill sets and knowledge; Goals should be milestone based and measurable
- Inclusive development cannot be thought about without financial inclusion – policies and strategies may be developed
- Forging partnerships and collaborations between academic institutions, R&D institutions, civil society organisations, industry, PRIs
- Special support for start-ups/ entrepreneurship promotion activities in tier 2/3 cities and in rural areas.
- Establishment of a start-up technology database for sharing of data (product and business) so that repetitions can be avoided

- The focus of investment in education should be primarily on the quality of education, its alignment with the labour market demands, and on on-the-job training.
- Social Impact of a technology may also be given due weightage and not simply scalability or economics. Suitable sops may be accorded to start ups engaged in manufacturing/ marketing of such technologies.
- Innovations pertaining to livelihood generation, improving efficiency, reducing drudgery etc may be prioritised for support and introduction in relevant regions. This effort may be adequately supported by policy.
- Non-aspirational youth should be made aspirational through skilling, which plays an important role in livelihood generation.
- The role of women in inclusive development may be stressed upon and their efforts as rural workers, entrepreneurs should be recognised.
- State Governments may allocate fund to establish Rural Technology Parks in every state/district so that useful technologies can be brought closer to the people.
- In situ value addition of raw materials is very important to augment incomes. A policy may be so devised that at least 30% of the raw material gets mandatorily value added in the village before being sent outside.

- Given the strong correlation between Innovations for Inclusive Development and its resultant Social Enterprises, a dedicated policy be framed and promulgated for identification and nurturing of Social Enterprises in the country.

ROUNDTABLE ON S&T LED INNOVATIONS FOR WASTE TO WEALTH

Chair - Dr D.K Aswal, Director, National Physical Laboratory

Co -Chair - Dr Anjan Ray, Director, Indian Institute of Petroleum

The round-table saw participation from various Public Institutions, Ministries, State Government, Start-ups, Industry chambers, Innovators and others.

The discussion amongst other things encompassed attending waste by intervention of Science and Technology, and transforming it into usable products, thereby adding value.



Roundtable on S&T led Innovations for Waste to Wealth

Key Recommendations –

- Government should bring out a detailed document classifying the types of wastes (e.g. municipal waste, biomedical waste, waste from various industries, agricultural waste, electronic waste including solar panels and batteries, plastic waste etc.), the available technologies for conversion of these waste into energy and useful products, their economic viability and environmental impact.
- As the available technologies are not profitable, someone has to pay for it. For this a revenue generation model should be created, which can be combination of subsidy from the government, a part of Corporate Social Responsibility (CSR) fund and a fee from the waste creators.
- Various waste-to-wealth technologies developed by R&D institutes across the country either are lab-models or pilot-scales. There are no agencies in the country that can certify the optimal functioning of these technologies and their scaling up. There is a need of establishment of such Certification bodies in the country based on the quality-infrastructure (metrology, standards and accreditation), which are necessary for many other technologies.
- Currently the waste management is done by informal sectors using unskilled workers - making their life at risks. The waste management therefore should be made a formal sector along with SOP's and workers trained on tools and techniques. This will facilitate a rethinking of the waste sorting system which is the starting point of any further processing and will help to reduce the cost.

- Rejuvenating the sick units involved in “Waste Management” which historically saw a formal closure and now giving them a second opportunity to correct the fundamental errors made in the past and potentially contribute.
- The successful models and best practices implemented in certain States like Gujarat as talked about during the round-table in the areas of Waste Management, need to be replicated and made the next practice in other parts of the country. For instance, in the State of Gujarat, a water reuse policy is in place which mandates large industries to reuse the water used for input. Moreover, there is also a waste treatment policy under PPP mode of implementation, wherein entrepreneurs may run these treatment plants.

OPEN SESSION – INCUBATORS AND START-UPS & WOMEN LED START-UPS

An Open session was held on the theme of Incubators and Start-ups & Women led start-ups which had a participation from youth – budding entrepreneurs and students from professional courses who had an opportunity to interact with some of the stalwarts of present day entrepreneurship, incubation and start-up eco-system in the country.



Open Session – Incubators and Start-ups

The panellists included Prof Ashutosh Sharma, Secretary, DST; Shri H K Mittal, Adviser & Head, NSTEDB, DST; Shri Anand Pandey, Innovation and Entrepreneurship Center, IIT Gandhinagar; and the session was moderated by Shri Hiranmay Mahanta, GTU Innovation Council.

INTERACTIVE SESSION BETWEEN EXPERTS IN VARIOUS FIELDS AND GRASSROOTS INNOVATORS

An interactive session was also organized between experts in various fields from various academic, public and private institutions in the country and grassroots innovators focused on identifying the directions for meaningful incubation of the latter.



Interactive session between experts in various fields and grassroots innovators

CONCLUDING SESSION OF FINE 2019

On 18th – 19th March, 2019 the 6th batch of Innovation Scholars In-Residence programme had stayed at Rashtrapati Bhavan, and took a tour of various places within it like the Rashtrapati Bhavan Museum Complex [RBMC], Main Building etc.

On 19th March, 2019 the concluding session of FINE 2019 was held at Rashtrapati Bhavan and following set of activities were undertaken -

Key recommendations in form of a rapportization summary of all five roundtables organized during Festival of Innovation and Entrepreneurship 2019 was presented before Secretary to the President of India at Rashtrapati Bhavan, in the following order –

Shri H K Mittal, Adviser & Head, NSTEDB, DST presented the key recommendations of Round Table on S&T led Innovations for Scaling up and commercialization of innovations

Dr Vipin Kumar, Director, NIF presented the key recommendations of Round Table on S&T led Innovations for Unleashing potential of Indian Agriculture – Increasing wealth creation and employment

Dr P S Goel, Chairperson, NIF presented the key recommendations of Round Table on S&T led Innovations for Inclusive development

Prof S K Maulik, Professor, Department of Pharmacology, AIIMS, New Delhi presented the key recommendations of Round Table on S & T led Innovations for “Health and Nutrition”

Dr D.K Aswal, Director, National Physical Laboratory presented the key recommendations of Round Table on S & T led Innovations for Waste to Wealth.

On this occasion, the 6th batch of Innovation Scholars In-Residence programme interacted with Secretary to the President, and shared their experiences of FINE 2019.

Shri Sanjay Kothari, Secretary to the President, expressed hope that in near future benefits of these innovations will reach common man and help our society.

Prof Ashutosh Sharma, Secretary, Department of Science and Technology expressed his happiness that 6th batch of Innovation Scholars In-Residence programme reflects diversity and inclusivity at its best as it has representation by children like Sulochana Kakodia and veterans like Shri Jagdish Prasad Pareek. He also emphasized that NIF should continue to focus on in-situ incubation of innovations and thousands of start-ups should emerge with its support.

Shri H K Mittal, Adviser & Head, NSTEDB, DST made a mention on soon to be launched initiative titled RIPE (Rural Innovations Promotion through Entrepreneurship) wherein NIF will lead the convergence of rural innovations and entrepreneurship across the country. This is on the side-lines of the key recommendations of Round Table on S&T led Innovations for Scaling up and commercialization of innovations in pursuit of identifying an enhanced pivotal role that NIF could play in strengthening innovation and entrepreneurship eco-system in the country.

Towards end of the session, the 6th batch of Innovation Scholars In-Residence programme were presented with a memento by Shri Sanjay Kothari, Secretary to the President.

ANNEXURE 1 - ADDRESS BY THE HON'BLE PRESIDENT OF INDIA DURING THE AWARD FUNCTION²

1. I am very happy to be here with all of you at FINE 2019 – the Festival of Innovation and Entrepreneurship. This Festival is a celebration of creativity, innovation and entrepreneurship. Till 2018, it had been hosted at Rashtrapati Bhavan. This year it was decided to organise it outside Rashtrapati Bhavan. Earlier people used to come to the Festival, this year the Festival has come to the people. And indeed I am glad that this Festival is being organised here in Gujarat for two reasons. Firstly, Gujarat is known as a land of innovation and entrepreneurship. And secondly, this Festival is being held here during the year in which we are celebrating the 150th birth anniversary of perhaps the greatest Gujarati of all time, the Father of our Nation, Mahatma Gandhi.
2. Gandhiji strongly advocated finding local solutions to local problems. This thought was inherent in his idea of Gram Swaraj. It is a matter of immense satisfaction that this Festival sees participation from several grassroots innovators who have been inspired to find effective solutions to problems that they experienced in their communities. I congratulate all the award winners. I hope they will continue to be an inspiration for society. The creativity and efforts they have put in to conceive practical solutions to everyday problems is commendable.

² <http://pib.nic.in/PressReleaseDetail.aspx?PRID=1568898>

3. Participants at this Festival come from different parts of India. Clearly, the spirit of innovation is noticeable all across our country. This is a welcome trend and I commend the National Innovation Foundation for organising this Festival that provides innovators from across the country an opportunity to share their experiences and exchange ideas.
4. The National Innovation Foundation was established in year 2000, with the assistance of Department of Science and Technology, Government of India. Ever since, it has made a big contribution to strengthen the grassroots technological innovations and outstanding traditional knowledge in the country. I am happy to learn that NIF has created a huge database of ideas, innovations and traditional knowledge practices from all over the country. It has recognised over 800 grassroots innovators through awards. And, it has had hundred of innovations validated through our institutions. Furthermore, the NIF has dozens of patents, design registrations and trademark applications. The support that NIF has extended to the grassroots innovators is laudable and so have been the accomplishments of innovators themselves.
5. A reflection of this good work is seen in the fact that three innovators who were incubated by NIF have been selected for the Padma Shri this year. These innovators are Shri Jagdish Prasad Parikh who developed a new variety of cauliflower, Shri Uddhab Kumar Bharali who developed a Pomegranate Deseeder, Arecanut peeler and a Bamboo splitting machine, and Shri Vallabhbhai Vasrambhai Marvaniya who developed an improved carrot variety. I am told that thousands of farmers and citizens have benefited from their innovations. Incidentally, like some of you got the awards today, these three innovators had also received the Biennial

National Grassroots Innovation Award in past. In fact, NIF's award was the first recognition for their innovations.

Ladies and Gentlemen,

6. As we seek to meet important developmental goals and build a caring, inclusive and happy society, we have to draw upon the power of innovation to find solutions to our concerns in diverse domains such as health, education, food security, energy access, environmental protection, and national security. We have to make all efforts to promote an innovation culture and become an innovation society. This will provide us the best possibility of ensuring that every young Indian will have an opportunity to realise his or her true potential. In the wider sense, an innovation culture can be a catalyst to help us reach our goals as a society and as a nation.
7. To usher in such a culture calls for revitalising every link in the **innovation value chain**. We need schools where children tinker rather than only memorise. We need work cultures where young talent looks up and questions – rather than looks down and nods. And of course the government will continue to provide a facilitative environment.
8. However, an innovative idea in itself is not enough. It is important to ensure that a creative idea gets the support it needs for its maturing, diffusion and delivery on the ground. Innovation itself is only the first of two key drivers to ensure that any innovation becomes actionable. The second key driver is entrepreneurship, which needs to supplement innovation so as to deliver benefits to our fellow citizens.

9. We need to build an ecosystem for converting innovations into enterprises. These could be commercial or social enterprises; the form does not matter as long as the enterprise enables an innovation to actually make an impact. This necessarily requires support for start-ups and for incubating young innovators. It is critical to connect all the links of incubating innovations into enterprises by providing financial, mentoring and policy support.
10. To be sure, NIF has done just this in many specific cases. But, my suggestion, for the consideration of all present here is to see if we can scale up the impact of our innovations to national and perhaps even global levels. While we are good at supporting the curation of ideas and their mentoring at early stages, we need to strengthen our capacities to connect science, technology and innovation on the one hand with market, commercial success and public good on the other. Such capacity augmentation could be based on active collaboration among institutions, each with expertise in a relevant domain.
11. By doing so, thousands of innovative ideas that come up can be examined to identify those which could be scaled up for the market, in order to maximize their social and economic benefits. When an innovation matures into an enterprise it not only takes the innovation's benefits to more people but it also leads to creation of both direct and indirect employment.

Ladies and Gentlemen,

12. I am told that during FINE 2019 five roundtables will be organised that will discuss issues such as scaling up and commercialisation of innovations, leveraging innovative technologies for affordable healthcare, balanced nutrition and

inclusive development and transforming waste into useful products for wealth creation. Each of these issues is very relevant and important. I am confident that intense and engaging discussions will be held by specialists in each of the roundtables – and will result in concrete recommendations and action points.

13. I compliment the NIF and the Department of Science and Technology, Government of India for their efforts in organising this Festival. By bringing FINE 2019 to Gandhinagar, a larger set of people will get exposure to the discourse and discussions that shape this Festival. No doubt the people of Gujarat, who have been innovative in themselves and in so many different ways, will also draw value from the Festival.

14. As I conclude, I congratulate all the innovators, whether from the informal or formal sector, the scientists, students, teachers, mentors, policy makers, government officials, friends from industry and academia, and members of the public, for their enthusiastic participation in this Festival. I am sure there will be several takeaways for each one of you. I would like to mention one such takeaway for all of you. That is, the need for us to ensure that innovative ideas mature into sustainable enterprises in order to maximise the innovation's benefit to society and the nation. May every innovation inspire another – and may the innovation journey continue!

Thank you,

Jai Hind!

ANNEXURE 2 – INNOVATION EXHIBITION DURING FINE

















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