International Conference on Blended Learning Ecosystem for Higher Education in Agriculture

"Towards a Resilient Agricultural Higher Education Sector in India"

The International Conference on Blended Learning Ecosystem for Higher Education in Agriculture 2023 was a multi-partner global event that facilitated knowledge sharing, collaboration, and partnerships for the development of a state-of-the-art blended learning ecosystem for higher agricultural education in India. The learnings from this conference enabled the Indian Council of Agricultural Research (ICAR) to develop a strategy for accelerating the implementation of a blended learning ecosystem. The conference was **hosted jointly** by the **ICAR** and the **World Bank** through **Indian Agricultural Statistics Research Institute (ICAR-IASRI)**, as a part of the **National Agricultural Higher Education Project's (NAHEP) Resilient Agricultural Education System (RAES)** development initiative. The Conference was held at New Delhi on **21-23 March 2023**.

The conference deliberated on various objectives viz., strategies to operationalize a blended learning ecosystem for agricultural higher education, ensuring its sustainability by promoting private-public partnership that align with market needs, and formulating a mechanism for the continuous improvement of the ecosystem.

The conference was organized around the following themes:

Strategies for Blended Teaching –

Sustainability in the Blended Learning

Contemporary Curriculum for Agricultural

Technologies for Blended

Building Stakeholder Capacities to Navigate in a Blended Teaching – Learning Ecosystem

The conference was attended by more than **2,000 online and offline participants** comprising **students, academicians, industry experts**, and **development practitioners** belonging to **100 academic institutes** from over ten **countries**. The **outcomes of the deliberations**, which included **forging partnerships, sharing knowledge**, and **fostering collaboration**, is encapsulated in the form of the Delhi Declaration.

Delhi Declaration

on

Modernisation of Agricultural Education System in line with National Education Policy 2020

1. We, the students, academicians, policy makers, innovators, and development partners who participated in the International Conference on Blended Learning Ecosystem for Higher Education in Agriculture - 2023, reiterate that, for an agricultural higher education system to be resilient, it is critical to strengthen the ecosystem for higher agricultural education to support the development of a sustainable, economically robust, and inclusive agricultural sector.

2. We acknowledge the immense contribution of the ICAR as the apex body for driving change and strengthening agricultural research, higher education, and the extension system in agricultural universities and institutions across India. We also recognize the need to bolster the higher education system in agriculture to transform the sector in this time of ecological, economic, and social change. Accordingly, we agree that the ICAR is suitably placed to take the lead in building resilience in the system in partnership with other stakeholders, and in line with the National Education Policy of India 2020 (NEP 2020).

> "NAHEP has spread its wings to new heights since the past five years. I would like to congratulate all the scientists who helped in its formulation and the students who benefitted from the policy. It is a visionary initiative of the Government of India, aimed at transforming agricultural higher education in the country by integrating the latest technologies and innovative pedagogical approaches."
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> **Hon'ble Union Minister of Agriculture and Farmers Welfare**
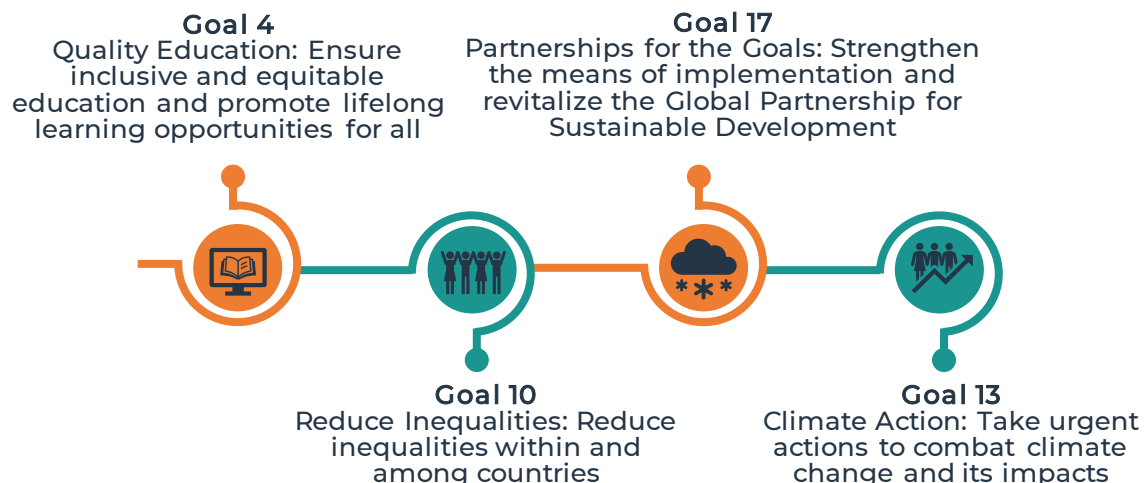>
> **Shri Narendra Singh Tomar**

Additionally, the RAES development initiative must strive towards fulfilling the

> "The partnership with the Government of India to fund NAHEP was a part of our commitment to help establish cutting-edge technology in higher agricultural education in India. The partnership has helped increase the placement rate of graduate students to 60 percent, indicating its impact on agricultural education."
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> **Dr Oliver Braedt**
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> **Practice Manager, Agriculture and Food Global Practice, The World Bank, Washington, USA**

following Sustainable Development Goals of the United Nations (UN-SDGs):

Goal 4
Quality Education: Ensure inclusive and equitable education and promote lifelong learning opportunities for all

Goal 17
Partnerships for the Goals: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Goal 10
Reduce Inequalities: Reduce inequalities within and among countries

Goal 13
Climate Action: Take urgent actions to combat climate change and its impacts

3. It is acknowledged that institutions of higher agricultural education need to make rapid and constructive changes in response to today's ever-changing economic, social, and environmental conditions. Accordingly, there is a need to incorporate digital resources and tools for effective and accessible teaching and learning, as seen during the COVID-19 pandemic. All stakeholders acknowledged that developing a strong, relevant, and resilient higher agricultural education system is critical to fostering future generations of competent professionals and a vibrant agriculture sector.

> "To increase the productivity and further improve the education system in India, the implementation of blended learning NAHEP will play a vital role."
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> **Dr R. C Agrawal, Deputy Director General (Agricultural Education) of the Indian Council of Agricultural Research (ICAR), New Delhi**

4. We are determined to create a renewed and resilient system for gender-inclusive and sustainable education that will pave the way for the future of India's education sector. We, thus, call upon academicians, policymakers, and practitioners to:

   - Enhance agricultural higher education in alignment with NEP 2020 and the UN-SDGs and make it relevant, consistent, and sustainable, with transdisciplinary research and extension.

> "Through the National Agricultural Higher Education Project (NAHEP), we strive to promote innovative and technology-driven teaching and learning methodologies in higher education for agriculture. By embracing blended learning, we aim to create a holistic and inclusive learning environment that empowers our students and prepares them for the evolving demands of the agricultural industry. Let us leverage the power of technology and collaboration to create a brighter future for agriculture and agricultural education."
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> **Dr Himanshu Pathak,**
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> **Secretary Department of Agriculture Research and Education (DARE) and Director General (ICAR), New Delhi**

   - Promote and institutionalize system-wide transparency in governance, in the allocation and utilization of resources, and in the monitoring and evaluation of programmes.
   - Further the agenda on Science, Technology, Engineering, Agriculture, and Mathematics (STEAM) in agricultural higher education, especially for disadvantaged groups/communities, by transforming policies, promoting system-wide awareness, and accelerating research, development, and innovation.
   - Promote multidisciplinary, technology-facilitated education that fosters innovation and research, especially in the area of digital agriculture, to solve endemic challenges such as undernutrition, hunger, poverty, inequity, environmental degradation, as well as the shrinking and diminishing natural resource base, including soil, water, and biodiversity.
   - Optimize learning outcomes across the continuum of agricultural education – from the undergraduate level to doctoral studies - by system administrators and regulators.
   - Improve and sustain the mobility of national and international students in the global higher education sector by adopting the vital process laid out by the Ministry of Education (Government of India) for Academic Bank of Credit (ABC).
   - Give students the option of multiple entry- exit points, that align with their needs.
   - Enable current students, recent graduates, and alumni to partake in solution-focused, technology enabled innovation and entrepreneurship by leveraging the intellectual expertise of higher education institutions, as well as of global and national initiatives such as Atmanirbhar Bharat Abhiyan, Invest India, Make in India, and Start-up India, chiefly in the agricultural and allied sectors.
   - Create experiential learning opportunities for students through job placements in industries, government, and community settings to enhance their employability.
   - Strengthen digital Infrastructure across Agricultural Higher Education Institutions (A-HEIs) with an evaluation and assessment system that is appropriate for the blended learning environment, along with the deployment of emerging immersive

technologies such as Augmented Reality (AR)/Virtual Reality (VR) Experiences, and Virtual Classrooms to enable users (students, faculty, and administrators) to access new-age methods in learning, teaching, and assessment.

- Develop unique digital e-Learning content aligned to the academic requirements of undergraduate and postgraduate students.
- The digital content would promote self-learning through sophisticated, emerging technologies to both supplement and complement regular classroom and field level transactions. For example, Problem Based Learning (PBL) includes simulations and adaptive assessments.
- Institutionalize a system-wide Digital Capacity Building Program to strengthen the digital capacity and competence of stakeholders.
- In alignment with the NEP 2020, work towards a refreshed and resilient agricultural higher education by way of robust quality assurance through accreditation, minimum standards for higher education, academic regulations, personnel policies, review of course curricula and delivery systems, support for creating/strengthening infrastructure and facilities, as well as improving faculty competence and the admission of students through All India Examination.

Dated: March 23, 2023