

National Convention on Genetics, Plant Breeding and Seed Science

In brief: Plant Breeding Convention

Venu: Khumaltar, Lalitpur

Date: (3 days) Jan 20-22 2026

Themes: Genetics, Agrobiodiversity, Seed Science, Breeding, Biotechnology (ag) and Biometrics (ag) (GAS-3B)

Organizers: Seed Quality Control Center (SQCC) and Plant Breeding and Genetics Society of Nepal (PBaGSoN)

INTRODUCTION

Nepal, with its rich agrobiodiversity and diverse agro-ecological zones, has significant potential for agricultural advancements through the application of plant genetics, breeding, seed science, and biotechnology. However, the agricultural sector faces several challenges, including low productivity, limited access to improved seeds, and the need for sustainable practices that can adapt to climate change. Globally, advances in genetics and plant breeding have played a crucial role in enhancing food security and livelihoods. In agriculture and forestry, disciplines such as genetics, breeding, seed science, biodiversity, biotechnology, and biometrics are key to improving food, nutrition, health, business, and environmental outcomes. Despite these global advancements, Nepal has not fully capitalized on these fields, with research and development efforts being sparse and scattered.

To address these challenges, it is essential to bring together experts for collaborative brainstorming and innovation. Institutions like the Nepal Agricultural Research Council (NARC), SQCC, DoA, academia, private companies, and professional societies need to work together to advance these fields. While NARC, SQCC and other key institutions have made efforts in plant breeding, genetics, and seed science, significant gaps remain in knowledge, technology adoption, and policy implementation.

There is a growing recognition of the need to integrate modern biotechnology, biometrics, and innovative tools into traditional breeding and seed systems. This integration is vital for improving crop yields, conserving agrobiodiversity, and ensuring food security in the face of population growth and environmental challenges. Strengthening public-private partnerships and aligning with global advancements in these fields are also critical for realizing Nepal's full agricultural potential.

In response to these needs, the National Convention on Plant Genetics, Breeding, and Seed Science has been organized to bring together experts, researchers, policymakers, and stakeholders from across Nepal and beyond. The convention aims to facilitate knowledge sharing, address existing gaps, and chart a collaborative path forward for the sustainable development of Nepal's agricultural sector. By focusing on key disciplines such as plant genetics, breeding, agrobiodiversity, seed science, biotechnology, and biometrics, the convention seeks to promote innovation, strengthen capacities, and develop actionable strategies that will contribute to the nation's agricultural growth and food security.

OBJECTIVE

- **Share and Disseminate Knowledge:** To present and discuss the latest advancements, research findings, and existing gaps in the fields of Plant Genetics, Breeding, Agrobiodiversity, Seed Science, Biotechnology (ag), and Biometrics (ag).

- **Foster Collaboration and Networking** To bring together professionals, experts, and stakeholders to foster (to build and strengthen) networking, collaboration, and partnerships that can lead to future projects, research, or initiatives.
- **Enhance Public-Private Partnerships:** To create a framework and mechanisms for effective public-private partnerships in the areas of GAS-3B, encouraging joint efforts in research, development, and application.
- **Policy and Practice Development:** To discuss and develop policies, guidelines, and best practices that can guide future actions in the respective field or industry.
- **Addressing Challenges and Opportunities:** To identify and discuss current challenges, gaps, and opportunities in the field, and to explore potential solutions and strategies.
- **Promoting Innovation and Excellence:** To showcase cutting-edge technologies, innovations, and exemplary work, encouraging high standards and innovation within the industry or field.
- **Identify Future Directions:** To generate group recommendations and establish clear future directions for research, policy, and practice in the GAS-3B disciplines.
- **Document and Disseminate Outcomes:** To compile and disseminate the proceedings of the convention, including keynote speeches, thematic papers, general papers, posters, and recommendations, ensuring broad access to the knowledge shared.

SECTOR

The convention will focus on six key disciplines within the broader sectors of Agriculture, Forestry, and Policy: Genetics, Agrobiodiversity, Seed Science, Breeding, Biotechnology-ag, and Biometrics-ag (GAS-3B). These disciplines will be examined through the lens of both practical application and policy development, with the goal of advancing research, fostering innovation, and creating sustainable practices in these critical areas.

METHODOLOGY

The methodology for the National Convention on Plant Genetics, Breeding, and Seed Science will involve several key steps:

1. **Expert Identification and Committee Formation:** A comprehensive list of experts in GAS-3B will be compiled. Various committees will be formed to oversee different aspects of the convention, ensuring efficient organization and execution.
2. **Notice Circulation and Call for Papers:** Notices will be circulated to invite participation and submission of papers. A call for papers will be issued, focusing on key themes and research gaps in GAS-3B.
3. **Selection of Keynote Speakers and Themes:** Keynote speakers and thematic topics will be identified based on the latest research advances and existing gaps. This will guide the selection of speakers and presenters, ensuring a focus on critical areas.
4. **Program Preparation:** A detailed program will be prepared, outlining the schedule for keynote presentations, thematic papers, general papers, posters, exhibitions, and group discussions.
5. **Guideline Development:** Guidelines will be developed to ensure consistency and quality in the presentations, group discussions, and plenary sessions.
6. **Convention Sessions:** The convention will feature keynote presentations, thematic papers on Plant Genetics, Breeding, Seed Science, Agrobiodiversity, Biotechnology, Biometrics, and Policy Dimensions, general paper presentations, poster sessions, and exhibitions. These sessions will facilitate knowledge sharing, networking, and collaborative discussions among participants.

7. **Interactive Components:** Group discussions and plenary sessions will be conducted to foster active participation and generate actionable recommendations for the future of GAS-3B.

This structured approach will ensure a comprehensive and collaborative convention, addressing key issues and advancing the field of GAS-3B. In addition, followings will be additional activities.

- **Panel Discussions and Debates:** Interactive panel discussions and debates will be held to explore controversial topics, emerging trends, and policy implications in Plant Genetics, Breeding, Agrobiodiversity, Seed Science, Biotechnology, and Biometrics.
- **Networking Opportunities:** Dedicated networking sessions will be facilitated to encourage interaction and collaboration among participants, including opportunities for young researchers to connect with experienced professionals.
- **Exhibition and Demonstration Stalls:** An exhibition area will be set up where companies, research institutions, and other stakeholders can showcase their products, technologies, and innovations related to GAS-3B.
- **Poster Sessions:** Researchers will present their work through posters, allowing for detailed discussion and feedback from peers and experts.
- **Awards and Recognitions:** The convention will recognize outstanding contributions in the fields of GAS-3B with awards and commendations, encouraging excellence and innovation.

EXPECTED OUTPUTS

- Sharing of advancements and identification of gaps in GAS-3B in Nepal
- Establishment of interlinkages and collaborative networks among experts, practitioners, and policymakers
- Creation of a mechanism and framework for public-private partnerships in GAS-3B
- Formulation of group recommendations and future directions for GAS-3B
- Compilation of proceedings, including keynotes, theme papers, research papers, and posters

PARTICIPANTS

Approximately 200 participants are expected at the event, including experts in Genetics, Agrobiodiversity, Seed Science, Breeding, Biotechnology (ag), and Biometrics (ag) (GAS-3B). Attendees will primarily be from NARC, SQCC, DoA, IAAS, HICAST, KU, AFU, CIMMYT-Nepal, IRRI-Nepal, Bioversity International-Nepal, Professional Societies, MoALD, SEAN, LIBIRD, DPR, private biotech and seed companies, and other relevant stakeholders.

ESTIMATED BUDGET (Rs)

A. Convention cost	Rs 5,00,000
B. Publication (proceedings)	Rs 3,00,000