THE PONTIFICAL
ACADEMY
OF SCIENCES

CROP
TRUST

WORKSHOP ON

CONSERVATION AND USE OF CROP DIVERSITY IN THE BIO-DIGITAL AGE

Workshop to be Held in Cooperation of
Pontifical Academy of Sciences and the Global Crop Diversity Trust

13 March 2026
Casina Pio IV, Vatican City

"There is no room for indifference or resignation... God will ask us if we have cultivated and cared for the world that he created (cf. Gen 2:15), for the benefit of all and for future generations, and if we have taken care of our brothers and sisters (cf. Gen 4:9; Jn 13:34). What will be our answer?"

Address of The Holy Father Leo XIV
to the Participants in the "Raising Hope" Conference
on the Tenth Anniversary of the Encyclical *Laudato Si'*,
Mariapolis Center (Castel Gandolfo),
Wednesday, 1st October 2025

Objectives

The Pontifical Academy has held events and issued statements that relate to both agrifood systems, and nature conservation. Building on these discussions, this workshop, in cooperation with Crop Trust, addresses the importance of inclusive application of advanced science to the conservation and use of crop diversity for productive and sustainable food systems. To this end, the workshop will discuss

- how genomics, artificial intelligence, synthetic biology and other new technologies will impact the operations and use of genebanks and other collections of food plant diversity;
- what policies and investments are needed to enable genebanks to take advantage of these opportunities to make them better fit for the future in a rapidly changing world.

Background

Advanced genomics combined with artificial intelligence allows faster, more precise characterization of crop diversity, which promises to greatly enhance, but also fundamentally change, plant breeding. At the same time, potentially transformative new scientific discoveries in the field of synthetic biology could boost the use of crop diversity not only in food and agriculture, but also in industrial biotechnology and pharmaceuticals, thereby increasingly blurring the lines between sectors and raising the value of crop diversity.

In a similar vein, innovative technologies and methods can also improve the efficiency and quality of genebank management. They can greatly assist, for example, in establishing genetically representative collections, identifying duplicates, comparing genetic diversity of collections, and detecting changes in genetic identity.

An unprecedented opportunity is therefore presenting itself for genebanks. They have the chance to evolve into veritable bio-digital research centers, conserving their collections much more efficiently, actively investigating their potential, and making crop diversity available to their users in a significantly more targeted and effective manner. This would greatly magnify their impact.

However, genebanks differ hugely in their capacity to take advantage of these scientific innovations. Without the necessary investments and policy support, many risk being left behind, and their collections overlooked. Shifting ownership of genomic data to the private domain and delinking data from the physical resource could undermine the effectiveness of the multilateral system that has been set up to facilitate the open exchange of crop diversity globally.

Thus, making genebanks fit for the future will require building technical and human capacities to take advantage of scientific opportunities while adapting governance systems and related institutions to ensure that the new technologies strengthen rather than undermine conservation and sustainable use of crop diversity for the benefit of all.

Agenda

FRIDAY, MARCH 13

9:00-9:30

Welcome and opening remarks

Welcome and PAS initiatives in the fields of sciences and nature
Chair of the meeting: Joachim von Braun President of the Pontifical Academy of Science (PAS)

Introduction to Laudato Si'
H.Em. Card. Peter K.A. Turkson PAS Chancellor

Empowering genebanks to transform agrifood systems
Stefan Schmitz Executive Director, Crop Trust

9:30-11:00

SESSION 1: How are genomics, AI, synthetic biology and other advanced technologies changing what genebanks can be and do?

Facilitator: Charles Spillane Chief Scientist, FAO

Genebanks at the genomic frontier
Stephen Kresovich Professor, School of Integrative Plant Science, College of Agriculture and Life Sciences, Cornell University

Implications of science advances for public agricultural research
Sandra Milach Chief Scientist, CGIAR

Will AI replace the plant breeder?
Lee Hickey Professor in Plant Breeding and Genetics, The University of Queensland (virtual)

11:00-11:30 Coffee Break

11:30-13:00

SESSION 2: What policies, investments and institutional arrangements are needed to ensure that advanced science in crop conservation and use benefits everyone?

Facilitator: Usha Barwale Zehr Executive Director, Grow indigo Private Ltd and Director, Mahyco

Optimizing characterization, evaluation and breeding through genome-based prediction of genetic values
Chris-Carolin Schön Professor for plant breeding, TUM School of Life Sciences

Using genomic technologies for optimal genebank collection management
Chike Mba Deputy Director, Plant Production and Protection Division, FAO

What it takes to turn genebanks in bioresource hubs
Nils Stein Head of Department Genebank, Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)

DSI in international agreements: Implications for the conservation and use of plant genetic resources for food and agriculture
Dan Leskien Senior Liaison Officer, Commission on Genetic Resources for Food and Agriculture, FAO

13:00-14:00 Lunch

14:00-15:30

SESSION 3: A moderated discussion

Facilitator: Josette Lewis CEO, Sustainable Conservation

Impulse statements on the future of crop diversity conservation and utilization in the bio-digital age by Crop Trust Executive Board members and reviewing a draft concluding statement

Summary of the discussions
Catherine Bertini Chair of the Executive Board of the Crop Trust

Closing remarks
Joachim von Braun PAS President

List of Participants

Prof. Joachim von Braun
PAS President; The Pontifical Academy of Sciences, and Bonn University, Germany

Dr. Stefan Schmitz
Executive Director Crop Trust

His Eminence Cardinal Peter K.A. Turkson
Chancellor, The Pontifical Academy of Sciences, Vatican City

Msgr. Dario E. Viganò
Vice Chancellor, The Pontifical Academy of Sciences, Vatican City

HRH Basma bint Ali
Executive Board Member Crop Trust

Dr. Heike Baumüller
Strategic Advisor to the Executive Director Crop Trust

Ms. Catherine Bertini
Executive Board Member Crop Trust

Ms. Anne Clyne
Director of Administration Crop Trust

Mr. Stephan Freiherr von Stenglin
Investment Committee Member Crop Trust

Dr. Geoff Hawtin
Executive Board Member Crop Trust

Prof. Lee Hickey
Professor of Plant Breeding and Genetics
University of Queensland

Mr. Dagfinn Høybråten
Executive Board Member Crop Trust

Dr. Nelissa Jamora
Monitoring & Evaluation Manager Crop Trust

Prof. Stephen Kresovich
Professor, School of Integrative Plant Science Cornell University

Dr. Sarada Krishnan
Director of Programs Crop Trust

Mr. Dan Leskien
Senior Liaison Officer FAO

Dr. Josette Lewis
Executive Board Member Crop Trust

Dr. Niels Louwaars
Executive Board Member Crop Trust

Mr. Chike Mba
Deputy Director, Plant Production and Protection Division FAO

Dr. Sandra Cristina Milach
Chief Scientist CGIAR

Dr. Kent Nnadozie
Secretary International Plant Treaty

Ms. Petra Pajdakovic Sebek
Media Associate Crop Trust

Ms. Joanna Purcell
Partnerships Lead Crop Trust

Mr. Juan Lucas Restrepo
Director General Alliance of Bioversity International and CIAT

Prof. Chris-Carolin Schön
Professor, Plant Breeding Technical University of Munich

Dr. Charles Spillane
Chief Scientist FAO

Ms. Jaspreet Stamm
Director of External Affairs Crop Trust

Prof. Nils Stein
Head of Department of Genebank and Research Group Genomics of Genetic Ressources Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)

Mr. Alvaro Toledo
Deputy Secretary International Plant Treaty

Mr. Daniel van Gilst
Senior Advisor NORAD

Mr. Kaveh Zahedi
Director of Office of Climate Change, Biodiversity and Environment FAO

Dr. Usha Barwale Zehr
Executive Board Member Crop Trust

Memorandum

General information

- Dress code is business attire.
- Please remember to bring a valid ID.
- Please refer to www.pas.va for further information on the Academy, the Academicians, and current and past events.

Access instructions to the Vatican and the Casina Pio IV

- Your name is already communicated to the Vatican Security. They will check your Identity and let you in. If you are bringing a guest, kindly let us know, and we shall add their name on the list.
- You can come through the closest entrance called Perugino (Via della Stazione Vaticana, no number, it's a very short street). Instructions to the Casina Pio IV, headquarters of the Pontifical Academy of Sciences, can be found in the following link:
  http://www.casinapioiv.va/content/accademia/en/about/contacts.html
- For all eventualities the telephone numbers of the Academy are the following:
  +39 06 69883195 or +39 06 69883451. A Mobile number is also available +39 3420026216
  On travel days, the mobile phone number +393420026216 will be available.

IMPORTANT:
Please check your PPT presentation with the conference technicians before your talk.

Wi-Fi network: **Academy-Guest**
Password: **will be available in the Casina Pio IV**

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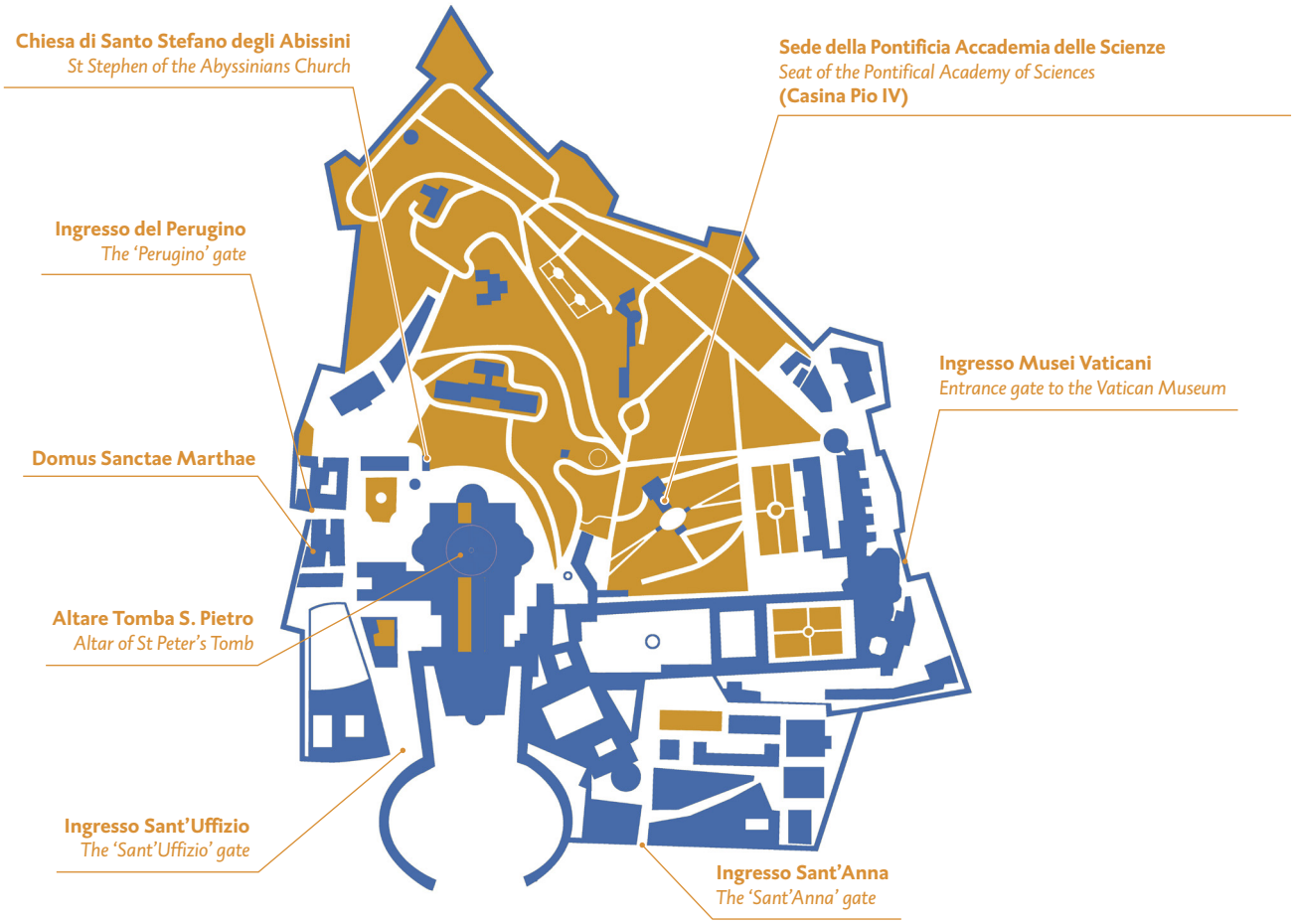

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