The GOBII Annual Meeting
ICRISAT August 8-12, 2017

Press release from ICRISAT:

The second annual meeting of GOBII discussed progress and achievements of the recently released first production version of Cascadilla. The meeting also reviewed previously released breeder tools such as 'Flapjack' for Marker Assisted Backcrossing (MABC) and 'Ped Ver' for pedigree verification. Priorities for the next version of the database were reviewed and a detailed work plan for 2017-2018 was developed.

Rajeev Varshney, research program director - Genetic Gains and PI of GOBII, underlined the project aims to effectively deploy genomic information in breeding programs to significantly increase genetic gains in key crop performance traits.

Peter Carberry, deputy director general - Research of ICRISAT, in his inaugural speech highlighted the importance of GOBII and its possible contribution to deliver the CGIAR goals.

"All varieties and hybrids resulting by the CGIAR breeding programs must be assessed by the adoption of modern breeding practices," he said.

The emphasis should be on empowering national breeding programs for the development of high functioning integrated participation network alongside National Agricultural Research Systems and partners.

While Liz Jones, director of GOBII presented the progress, challenges and opportunities of GOBII, David Bergvinson, director general of ICRISAT, said "We are always keen to incorporate contemporary approaches to crop improvement, for instance, adoption of Breeding Management System or recommendations from Breeding Program Assessment Tool reviews and GOBII."

Susan McCouch, PI, presented an overview of the project, emphasizing the importance of addressing crop improvement programs from an interdisciplinary perspective. She said, "As a team we bring great strength to deliver to smallholder farmers, to each of our programs and to the institution as a whole. We need to think about the long-term sustainability and impact of GOBII on breeding programs."

Gary Atlin, senior program officer at the Bill & Melinda Gates Foundation, commended the progress made in the project and the leadership of Ithaca hub in guiding it in the right direction.

"We are increasingly focusing on an approach that thrives to provide the underpinning support systems to breeding teams across the organizations in the developing world to raise the rate of genetic gains at which they deliver. This is really a change in mindset in ways the breeding programs are organized in public systems. It is clear that CGIAR and partners are beginning to take greater degree of corpus responsibility for the processes of delivering better varieties. This is a tough challenge requiring deep change in how breeding is done and how organizations are

managed within the CG system. Within that context, this group and the GOBII project stands out in having come together and certainly have exceeded my expectations in terms of bringing together the system to exploit the genomic tools," he said.

Sixty participants representing GOBII team members, Science Advisory Board (SAB) members, Project leaders, and colleagues from public and private institutes/ organizations namely, Cornell University, CIMMYT, IRRI and ICRISAT along with the Bill & Melinda Gates Foundation, DArT Pty Ltd., The James Hutton Institute, UK, University of Arizona, USA, DuPont Pioneer, Genus PLC, USA, Integrated Breeding Platform (IBP), Iowa State University, USA participated in the meeting.

High Throughput Genotyping (HTPG) is another BMGF- funded project focusing on providing low-cost high-density genotyping. As part of HTPG project, high-density genotyping data is being generated that needs to be handled in an organized manner to maximize its full use. GOBII can host the data generated as part of HTPG, however, it faces several challenges. GOBII focuses on 5 crops while HTPG handles 13 crops. Similarly, there is need to develop the Application Program Interfaces between GOBII and Intertek servers, so that huge data generated under HTPG can be directly stored in GOBII with minimal effort. Against this backdrop, after the GOBII annual meeting, a follow-up meeting on GOBII- HTPG project integration was held on 11 August, 2017.

The 2nd Annual Meeting of GOBII, jointly implemented by Cornell University, CIMMYT, IRRI and ICRISAT, was held from 8-11 August. The project aims at effective deployment of genomic information in breeding programs to significantly increase genetic gain in key crop performance traits.

Project: Genomic Open-source Breeding Informatics Initiative

Funder: Bill & Melinda Gates Foundation

Partners: Cornell University, International Maize and Wheat Improvement Center (CIMMYT), International Rice Research Institute (IRRI), Boyce Thompson Institute for Plant Research and ICRISAT

From left to right: Anu, Star, Liz, Kelly, Susan Yaw, Rajeev and Hima at the 2017 GOBII annual meeting August 10th evening celebration event at ICRISAT, in traditional culture outfits

2017 GOBII Annual Meeting Photos

Presentation and Reports for 2017 GOBII Annual Meeting:

http://cbsugobii05.tc.cornell.edu:6084/display/AG/Presentation+and+Reports+for+2017+GOBII+Annual+Meeting

After the annual meeting, Cornell application team and CIMMYT, ICRISAT, IRRI data loading teams have met weekly for data loading to track data loading and user adoption and each CG are also blocking dedicated days or weeks on data loading into GOBII.

CIMMYT GOBII team comments following the annual meeting

GOBII annual meeting at Hyderabad India was attended by GOBII CIMMYT team members Mike Olsen, Kate Dreher, Umesh Rosyara, Xuecai Zhang, Rosemary Shrestha and Victor Ulat. Mike Olsen provided a brief overview of GOBII activities at CIMMYT. On behalf of the team, Victor Ulat presented Users' Feedback for GOBII v1 (Cascadilla release). Similarly, on behalf of Galaxy Genomic Selection pipeline team, Xuecai Zhang presented progress on development to GS pipeline. To highlight future requirement of the breeding decision support, Umesh Rosyara presented vision on what breeding decision support should look like. All participants took part in group discussions and feel that the annual meeting was a success.

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Other news from Ithaca

Cornell Chronicle article August 30th on GOBII

By Krishna Ramanujan

http://news.cornell.edu/stories/2017/08/new-initiative-bridges-plant-breeding-digital-divide

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GOBII participated in the Boyce Thompson Institute (BTI) annual symposium and presented a poster.

https://btiscience.org/educational-programs/pgrp-symposium-2017/

GOBII_poster_Sept_2017m.pptx

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Kelly Robbins represented GOBII and EIB and gave a talk at the first annual CGIAR Platform for Big Data in Agriculture Convention in Cali, Colombia, from 19 to 22 September 2017.

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Other news from CIMMYT

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CIMMYT's BSU holds training at CIMMYT HQ

CIMMYT's Biometrics and Statistics Unit (BSU) held a training workshop this week at CIMMYT HQ. According to the head of the unit, Juan Burgueño, BSU, training workshop was attended by 25 participants, including researchers from CIMMYT and CGIAR programs across the globe, researchers from partner organizations and professors and students from universities in the Caribbean, Europe, Mexico and U.S. BSU offers this course every two years and it lasts roughly two weeks. Current training is focused on biometrical and statistical genetics analyses for agricultural researchers in general, and breeders in particular.

BSU is committed to developing new mathematical and statistical methodologies and applying them to solve problems that CIMMYT and partners face. The unit has earned an international reputation for its research on statistical analysis of multi-environment trials and methods for classifying and preserving genetic resources. BSU has also been collaborating with GOBII in case of statistical analysis support.

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About GOBII

Genomic Open-source Breeding Informatics Initiative (GOBII) is the first large-scale public-sector effort to systematically apply high-density genotypic information to the breeding of staple crops in the developing world. With support from Bill & Melinda Gates foundation, GOBII aims towards developing and implementing genomic data management systems to enhance the capacity of public sector breeding programs to deliver increased rates of genetic gain.

GOBII involves a multi-disciplinary team of software developers, molecular biologists, geneticists, curators, breeders, and bioinformatics expert from Cornell University, CIMMYT, IRRI and ICRISAT. It focuses on rice, wheat, maize, sorghum and chickpea.

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