



ISAG . 2019

37th International Society for
Animal Genetics Conference

July 7 - 12, 2019 - Lleida, Spain

Livestock genomics for developing countries workshop report

Organised by a standing committee: YES

Meeting information

Date: July 11th 2019

Time: 2:30 – 6:00 pm

Number of participants: 61

Chair

Name: Ntanganedzeni Mapholi,

Affiliation: University of South Africa, Florida, South Africa

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Agenda

Livestock genomics for developing countries workshop aims on highlighting matters related to economic, social and environmental benefits, that genetic and genomic technologies can deliver to improve livestock production in developing countries, and often-different approaches that are necessary to ensure the technologies are effective in the low-input systems of those countries. The workshop specifically focused on a number of issues and provided examples of applications from a range of livestock species relevant to developing countries under the following points:

1. Genomic applications to livestock breeding and improvement and conservation of scarce genetic resource – this included genomic selection, its potential in developing countries and challenges and progress to date;
2. Genomic applications to characterize indigenous livestock genetic resources;
3. The value of developing SNP assays for use in extensively raised indigenous populations in the developing world;
4. Opportunities to pool genomic resources, including funding, animal resource populations; and encouraging Community-based breeding Programs (CBBPs).

5. Encouraging research collaborations within developing countries and between developing and developed countries.

Summary of the meeting

Welcoming Remarks

Welcoming the participants and acknowledging the committee members of the workshop.

Oral presentations were as follows:

A Talenti *“Investigating large structural variants in African cattle using long-read sequencing and optical mapping”*

Laercio R. Porto-Neto *“The effect of allele ancestry on production traits of tropical composite cattle”*

Ahmed S. Al-Jumaili *“Autosomal genome evidence for introgression from other Gallus species into African and Middle East indigenous chicken”*

C Visser *“Single nucleotide polymorphism selection methods to optimize imputation accuracy for South African Drakensberger beef cattle”*

Yifan Jiang *“Accuracy of imputation from SNP array data to whole-genome sequence data in cattle”*

MBR Mollah *“Genome-wide identification and characterization of InDels and SNPs in Black Bengal goat for breed identification”*

MS Peng *“Whole-genome sequencing unveils helmeted guinea fowl (Numida meleagris) domestication in West Africa”*

E Smith *“Advancing livestock genomics education and research in developing countries using strategies from the Virginia Tech PREP and IMSD training programs”*

Business Meeting and Election of Committee

As part of the business meeting we opened a discussion on the way forward of the workshop. In this discussion we addressed issues including:

- Development of consortiums across developing countries in order to encourage the use of genomic applications to improve livestock production;
- How to maximise the use of available data and improve the methods of phenotypic data collection within community based programs;
- Encourage collaborations between research and academics institutes in order to source research funding at a larger scale;
- It was argued that researchers and students should participate in presenting their research from developing countries in order to understand if genomics has been broadly implemented in developing countries.

About 35 attendees remained after presentation for the discussion, and majority were from developing countries. It was commended that the presentations were well structured and addressed the issues of important to improve livestock production in developing countries, however some of the speakers were not present for their talks.

We encouraged the old workshop committee members to continue serving in the workshop as advisory members. We also argue students and early career researchers to apply for ISAG travel bursary for future conferences.

New chair was elected and other two additional committee members.

Comments: Many thanks to the workshop committee and to Spain conference coordinators for the support. The workshop was a success.

New Committee Chair

Chair: Abdulfatai Tijjani

Term of service: 2019-2021

Affiliation: ILRI/CTLGH

E-mail address: atijjani@cgiar.org

Committee members

Marina Fortes (University of Queensland, Australia) (new member)

Kwan-Suk Kim (South Korea) (new member)

Mostafa Nassar (Cairo University, Egypt)

Ntanganedzeni Mapholi (University of South Africa)

Farai C Muchadeyi (ARC- South Africa)

Olivier Hanotte (University of Nottingham)