



ISAG Conference 2008, Amsterdam, The Netherlands
ISAG-FAO Advisory Group on Animal Genetic Diversity

Chair : Johannes Lenstra, Utrecht University, The Netherlands

Over 130 people attended the workshop.

Report on any business conducted:

The workshop of the ISAG-FAO Advisory Group on Animal Genetic Diversity was held on the afternoon of Sunday, 20 July, 13.30-17.30. The workshop was opened by its chair, Dr. Johannes A. Lenstra (Utrecht, the Netherlands). The program included four invited presentations, by Steffen Weigend (Neustadt, Germany) on chicken genetic diversity, Paolo Ajmone-Marsan (Piacenza, Italy) on global-scale diversity, Tad Sonstegard (Beltsville, USA) on SNP analysis of cattle breeds, and Ottmar Distl (Hannover, Germany) on horse genetic diversity. Paolo Ajmone-Marsan was unable to attend, so Hans Lenstra addressed the crowd in his place.

The workshop continued after the break with presentations by contributed speakers chosen among those that had submitted poster abstracts. These contributed speakers included Paul Boettcher (FAO, Rome, Italy), Hans Lenstra (Utrecht, the Netherlands), Christoff Knorr (Göttingen, Germany), Ercan Kurar (Konya, Turkey), Pam Wiener (Roslin, UK) and Miika Tapio (ILRI, Nairobi, Kenya). The workshop was attended by more than 130 ISAG conference participants.

The business meeting of the ISAG-FAO Advisory Group on Animal Genetic Diversity was held on the afternoon (13:30 to 15:00) of Tuesday, 22 July (see agenda in Appendix 1). This has been announced during the workshop and other workshop attendees were invited to participate. The business meeting was attended by the following Committee members: Hans Lenstra, Paolo Ajmone Marsan and Steffen Weigend. Absent were Henner Simianer (Göttingen, Germany), Gus Cothran (College Station, Texas, USA), Denis Milan (INRA, Toulouse, France), Irene Hoffmann (FAO, Roma), Olivier Hanotte and Stuart Barker. The meeting was further attended by Paul Boettcher, who replaced Irene Hoffmann, Han Jianlin (Peking, China/ILRI, Nairobi, Kenya), Ottmar Distl, Peter Dovc (Domzale, Slovenia), Cecile Berthouly (Paris, France), Grégoire Leroy (Paris, France), Miika Tapio and Boniface Kayang (Kyoto, Japan).

The meeting was called to order by Paul Boettcher, who was serving as interim chairperson. Following approval of the agenda, the first order of business was the naming of a new chairperson to replace Henner Simianer (Germany). Hans Lenstra was nominated and was approved unanimously to become the new chairman of the working group. Paul Boettcher agreed to serve as rapporteur of the meeting. Next, Jianlin Han (Beijing, China) was nominated



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and approved to replace Olivier Hanotte (Kenya) as committee member of the genetic diversity of yaks and camelids.

The next order of business was the organization of information regarding ISAG microsatellite (MS) marker panels on the FAO website. Paul Boettcher reported that discussions on such changes have already been undertaken at FAO Headquarters and changes will soon be made to improve availability of the information. Next, each species group leader was asked to provide an update on characterization studies. Mr. Lenstra reported first on cattle. In his opinion, breeds have been relatively well characterized world-wide and datasets can be integrated with the exception of data on African breeds that were analysed with almost completely different markers. More interaction is needed, however, with scientists from India for collaborating on studies including data from their breeds in meta-analyses. Mr. Ajmone also reported good progress on sheep and goats with completed studies in Europe, Asia and Africa and efforts being currently made to combine and standardize data from the associated studies. Efforts are underway to initiate collaborations with scientist from India, China and the Americas, where breed characterization studies have been undertaken. Ottmar Distl reported on horses. Although studies have been done throughout Europe, these studies have generally been done independently and standardization of results has been found to be difficult. ILRI has been working with characterization of Chinese breeds and Mr. Jianlin Han offered to genotype animals from other geographical areas to facilitate the standardization of data. Steffen Weigend reported on progress in Chickens. A large number of breeds and lines have been characterized globally. An effort is now underway to create a common set of data including all results. With regard to other poultry species, no coordinated studies are being undertaken on the turkey, at least based on the knowledge of meeting participants. ILRI has developed a panel for ducks and will provide the information to the FAO for posting on its website. Mr. Jianlin reported that there may be a need to develop separate panels for New- and Old-World camelids. South-American scientists are in the process of creating such a panel. Stuart Barker, the lead of the buffalo group, was not present, but Mr. Jianlin reported that use of the ISAG-FAO panel has been nearly universally used in studies that have been undertaken. Collaboration should be encouraged between groups in Asia and the Mediterranean area. Although Denis Milan was not present to report on pigs, most studies on the diversity of this species are part of well-coordinated efforts.

The next order of business was discussion of the role of SNP and microsatellites (MS) in future characterization studies. It was the consensus of the group that SNP would eventually replace MS as the marker of choice. For that reason, panels developed for new species should be based on SNP. Some potential problems with such switch were noted and discussed. SNP are more than MS subject to ascertainment bias and could thus overestimate the relative genetic

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diversity of the breeds from which the SNP were identified. More research is needed on the affects of this bias. It was suggested that SNP evaluated in “HapMap” studies involving multiple breeds from various geographic locations, including domestication centres, should be the basis of SNP of diversity panels for new species and panels. Dr. Weigend suggested that such research could be included as part of animal biodiversity projects proposed for funding to upcoming calls for the Framework 7 programme of the European Union. Dr. Ajmone-Marsan suggested the idea that a central network be established to maintain a set of standard reference DNA for each species in characterization studies and to distribute it upon request. Dr. Weigend proposed that DNA could be kept in several laboratories, according to species, with a central organization responsible for establishing and maintaining a database for tracking distribution. The laboratory of the FAO-IAEA Joint Division on Nuclear Applications to Food and Agriculture in Vienna was suggested as a possible location for this activity. Mr. Boettcher agreed to look into this possibility. Dr. Lenstra suggested that the working group increase interaction with the ISAG Working Group on Forensics and offered to initiate contact.



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APPENDIX 1

**Agenda
Business Meeting
ISAG-FAO Working Group
22 July 2008
13:30**

1. Opening
2. Approval of the agenda
3. Composition of the Committee
 - Succession of Henner Simianer as chairman
 - Hans Lenstra has been nominated
 - Nomination of a rapporteur
 - Succession of Olivier Hanotte for yaks and camelids
 - Han Jianlin has been nominated
4. Organization of pages on marker panels on FAO Web site
5. Current state of global diversity studies
6. SNP and diversity: how to achieve standardization
7. Interaction with ISAG forensic committee
8. Any other business
9. Closure.