

Livestock sector background document: Summary report of the ABDC-10 parallel session¹

This session was attended by 32 delegates. The background document was first presented by Paul Boettcher and then two discussants (Arthur Mariante from the Brazilian Agricultural Research Corporation [EMBRAPA] and Adama Traoré from the Comité National de la Recherche Agricole, Mali) gave their reflections on the document. The floor was subsequently opened for a full discussion, facilitated by Gigi Manicad from Oxfam International.

The group expressed appreciation for the comprehensive coverage of the livestock biotechnologies, their extent of application in developing countries and their usage in addressing emerging challenges. The participants agreed to the priorities for action for the international community listed in the document, and noted capacity building and enhancing quality of research as the most important priorities for action.

The gaps identified were lack of: a) integration of traditional-, conventional- and bio-technologies; b) capabilities and infrastructure for the conventional technologies upon which biotechnologies can be built; c) appreciation for proper animal nutrition on which the success of animal reproduction and health programs rests; d) integration of biotechnologies in livestock development programmes; and e) biotechnological options for pastoral production systems.

The future promising animal biotechnologies identified were: genome-wide marker assisted selection, although, for this, phenotype and pedigree recording systems need to be first put in place and capacity in bioinformatics would need to be built to take full advantage; genome sequencing of host animal and rumen microbes and assigning the function to genes for increasing the utilization of fibrous feed and decreasing methane emission from ruminants; development of strategies, for example, development of improved pastures and their introduction in grass and range lands for increasing livestock production and reducing methane emission from pastoral production systems, and for increasing carbon sequestration; development of on-site cost effective, simple-to-use and interpret ‘dip-stick’ or ‘pen-side’ animal disease diagnosis tools; development and use of natural products as growth promoters; and development of enzymes and probiotics suitable for tropical feeds and tropical animals and better understanding of the situations for eliciting consistent response of increased productivity and decreased environmental pollutants. Several participants also indicated that non-transgenic approaches for genetic-modification of animals would soon be available, although there was no consensus on whether this technology would greatly impact farmers in developing countries in the near future. In addition, it was noted that intellectual property issues can hamper the uptake of some biotechnologies, and recombinant vaccines were cited as a particular example.

The participants vehemently felt that the discussion on methane emission by livestock in the pastoral system should consider and weigh the advantages it offers, for example to sustaining the livelihood of people, and to the provision of animal protein and micronutrients for pregnant ladies and children from lands which normally cannot be used for other more productive purposes. At the same time, the participants also realized that the reduction of methane from ruminants would be accompanied by increase in livestock productivity since a large proportion of feed energy is lost in methane. Any reduction in methane through better feeding strategies developed through conventional or biotechnological means would a win-win situation for both the farmers and the environment.

Need to establish gene banks for animal genetic resources; greater coordination among OIE, IPPC and CODEX on issues related to biotechnology; and integration of business models while biotechnologies are being developed to ensure their accessibility to poor farmers, were highlighted.

¹ This is the summary report of the parallel session organized by FAO on the livestock sector background document (ABDC-10/5.1, synthesized in ABDC-10/5.2) held on the first day of the FAO international technical conference on Agricultural Biotechnologies in Developing Countries (ABDC-10) that took place in Guadalajara, Mexico on 1-4 March 2010 (<http://www.fao.org/biotech/abdc/paralle/en>). Harrinder Makkar was the Rapporteur.

Some efforts are being made by national governments for the use of biotechnologies for animal disease control and eradication and for conservation of animal genetic resources; however there is a need to take similar actions for the application of biotechnologies in the area of animal nutrition.

Amongst various agricultural sectors, the greatest growth is taking place in the livestock sector and this sector plays a critical role in alleviating poverty and enhancing food security. The national and international donors, policy makers and science managers should recognize the importance of this sector and provide commensurate funding and support.