Innovation and multi-actor cross-border cooperation in central Pyrenees to improve sustainability of local sheep breeds

B. LAHOZ (1), C. JOUSSEINS (5), J.H. CALVO (1,2), J. PAPUCHON (6), J.L. ALABART (1), L. PARDOS (7), V. LOYWYCK (5), M. SERRANO (3), C. SOULAS (8), P. EGUINOA (9), F. TOTUREAU (13), E. FANTOVA (4), E. JOUET (10), A. BERNÜES (1), R. CANELLAS (11), J.C. BOSCOLO (12), J. FOLCH (1), S. FABRE (13)

(1) CITA, Instituto Agroalimentario IA2 de Aragón (CITA-Univesidad de Zaragoza), Tecnología en Producción y Sanidad Animal. Av. Montañana, 930, 50059, Zaragoza, SPAIN. (2) ARAID. C/ María de Luna, 11, 50018, Zaragoza, SPAIN. (3) INIA, Departamento de Mejora Genética Animal. Crta. de la Coruña, km 7,5, 28040, Madrid, SPAIN. (4) UPRA-Grupo Pastores. Ctra. Cogullada, s/n, 50014, Zaragoza, SPAIN. (5) Institut de l’Elevage INRA, Chemin de Borde Rouge, BP 4, 2118, 31321, Castanet Tolosan Cedex, FRANCE. (6) ACAP. av. Général de Gaulle, 32, 09000, Foix, FRANCE. (7) Universidad de Zaragoza, Escuela Politécnica Superior. Ctra. Cuarte, s/n, 22071, Huesca, SPAIN. (8) SCA CDEO. Quartier Ahetzia, sn, 64130, Ordiaip, FRANCE. (9) INTA, Unidad Producción Ganadera. Avda. Serapio Huíci, 22, 31610, Villalava (Navarra), SPAIN. (10) CORAM, Chemin de Borde Rouge, BP 42 118, 31 321, Castanet Tolosan Cedex, FRANCE. (11) Terreovine. La grangette, sn, 32220, Lombez, FRANCE. (12) ACOAN. C/ Estanés, 5, 22728, Ansó (Huesca), SPAIN. (13) INRA, UMR1388 GenPhySE. Chemin de Borde Rouge, BP 52627, 31326, Castanet Tolosan Cedex, FRANCE.

Sheep farming of local breeds in the Pyrenean region is of major significance from an economic, social and environmental viewpoint. However, this activity is in continuous recession. Common problems are found in both sides of the border, in France and in Spain: its scarce profitability and a lack of generational renewal, due in part to the lack of innovation linked to its particular geographic isolation. The PIRINNOVI project aims to establish a network for acquisition, exchange and transfer of field knowledge but also research methodologies in order to improve sheep farming sustainability by the way of management and reproductive genetics. Common indicators for sustainability are being designed to perform technical-economic, social and environmental studies in the Pyrenean area to get the most influencing factors and work on them. Regardless of the breed, increasing efficiency is a key factor to improve sustainability of sheep production. Thus, PIRINNOVI faces common reproductive problems like low fertility in artificial insemination, delayed puberty or low efficiency of selection schemes for prolificacy and maternal effects on growing lambs. Electronic automatization of lamb weight recording is being implemented to reduce workload and improve data accuracy. Next-generation sequencing (NGS) and other genomic technologies based on SNP arrays are being used to design a common paternity test for 17 French and Spanish breeds, to evaluate its real impact on the precision of genetic evaluation, and to detect new major genes linked to prolificacy. The opinion of farmers, technicians and other users of the Pyrenean territory on these innovations and their implications for the continuity of this activity will be also studied and taken into account for the future. EFA103/15 project, co-financed by FEDER within the POCTEFA framework.