



Report on the outcome of episode #2 of the TSARA webinar "Local breeds for sustainable livestock systems in Africa" of 13/05/2025.

The webinar was prepared under the supervision of a steering committee formed by Sonia Romhdani - Bedhiaf, Pascal Bonnet, Motshabi Chadyiwa, Charles Dayo, Benoît Dedieu, Stéphane Fabre, Felix Meutchieye, Mohamed Ouldahmed, Giel Scholtz, El Hadji Traore and Mathieu Vigne.

Report written by S. Fabre and B. Dedieu. validated by the steering committee.

Resume of webinar elements

In episode #2 "Indigenous Breeds: Unveiling their genetic potential, being adaptive and productive, for sustainable community-based breeding programs in Africa " we recorded 210 pre-registrations and 112 participants (38 countries) logged on during the webinar.

The programme of episode #2 consisted of the following interventions:

- General introduction - P. Bonnet (CIRAD, France) and M. Chadyiwa (ARC, South Africa)
- Part 1 - Illustrating the distance between local breeds (oriented « adaptation to local harsh conditions») and improved breeds (oriented production / productivity)
 - State of animal genetic resources and strategic priorities - G. Leroy (FAO)
 - The role of crossbreeding in community milk production systems - Y. Sanarana (ARC, South Africa)
- Part 2 - Characterization, conservation and improvement: from the analysis of genetic diversity and of vulnerability of certain breeds (loss of diversity) to the search of equilibrium between adaptive and productive traits.
 - Generic study of diversity and vulnerability of indigenous breeds – L. Flori (INRAE, France)
 - Molecular characterization of local resources (rusticity, tolerance to gastro intestinal nematods) – J. Mwacharo (ICARDA, Ethiopia)
 - Combining phenotypic and genotypic information to study and preserve adaptive traits in local South African breeds – E. van Marle-Köster (Univ. Pretoria, South Africa)
- Part 3 - Design and implementation of conservation / improvement programs. Community breeding programs.
 - Community-based breeding programs (CBBPs). Illustration in Eastern Africa on small ruminants – A. Haile (ICARDA, Ethiopia)
 - Maghreb/Ruminants – S. Bedhiaf - Romdhani (INRAT, Tunisia)
 - Sub-Saharan Africa/Small Ruminants – L. H. Dossa (Univ Abomey Calavi, Benin)
- Part 4 - Participatory general discussion around 3 whiteboards moderated by C. Dayo (CIRDES, Burkina Faso), M. Schill (INRAE, France) and S. Fabre (INRAE, France)
- General conclusion by Dr. S. Bedhiaf – Romdhani (INRAT, Tunisia)

This report accompanies the video recording of the webinar (available here, <https://initiative-tsara.org/>) and the presentations by the various speakers.

Analysis of whiteboards

The whiteboards resulting from the discussions were analysed *a posteriori* by the members of the steering committee and the outputs are given for each whiteboard:

Whiteboard#1 : what interested you ? What questioned you ?

Points of Interest:

- The Community-Based Breeding Programs (CBBP) approach is generating keen interest, seen as a promising tool for developing and improving local breeds, while taking into account farmers' knowledge and considerations.
- The multidisciplinary nature of approaches is highlighted as essential for the conservation and improvement of Animal Genetic Resources (AGR). This ranges from genomics to economic and social sciences, all aimed at adapting animals to the needs of breeders, markets, and the environment.
- The recognition of the importance of local knowledge and the need for collaborations among research institutions, vocational training centers, and breeders are emphasized.

Questions Arising:

- The involvement of populations/breeders in implementing solutions proposed by programs is questioned. This raises inquiries into the causes of low involvement: is it a lack of desire or a lack of organization within the value chains?
- Methodological questions arise concerning the collection of relevant phenotypes, particularly in non-intensive systems, the organization of sustainable crossbreeding, and the recording of phenotypes on small farms.
- The economic evaluation of community breeding programs and the comparison of national policies regarding AGR in Africa are identified as areas of interest for future analysis.

Whiteboard#2 : what favors or restrains community breeding programs?

Factors favoring community breeding programs:

- Collective management: a solid basis for collective management exists and works well, suggesting that community-led efforts can be effective.
- Early breeder involvement: involving breeders from the beginning in the formulation of community projects is a strong favorable factor.
- Breeder capacity: the capacity of breeders to formulate improvement objectives is also highlighted as a positive.
- Integration with other programs: CBBP can be an additional activity for other community-based programs in areas like animal health or marketing, building on existing foundations.

Factors restraining:

- Lack of sustainable funding and institutional support: programs frequently fail or cease once initial project funding ends due to short-term financial commitments and insufficient long-term institutional backing from governments and other organizations.
- Weak policy prioritization and coordination: CBBPs are often not clearly integrated into national policies, hindering their ability to scale up. Furthermore, numerous small, uncoordinated projects and a lack of involvement from governmental institutions and the private sector contribute to inefficiency and fragmentation.
- Limited farmer and stakeholder engagement: a significant constraint is the insufficient involvement of livestock owners and other relevant stakeholders in the planning, design, and implementation processes, leading to programs that may not align with their needs or priorities.
- Inadequate technical capacity and information flow: poor or insufficient training of personnel, combined with a lack of organized value chains, impedes the effective collection and dissemination of information, hindering genetic improvement and overall program success.

Whiteboard#3 : what are the main gaps to characterize, conserve and improve local breeds?

- ***Lack of long-term vision and policy support:*** there's a prevailing focus on short-term gains, with an absence of clear, long-term breeding goals and weak national policies to support the conservation and sustainable management of local genetic resources. Political will is often insufficient, favoring exotic breeds over indigenous ones.
- ***Inadequate data and research infrastructure:*** a significant lack of data on local animal identification, pedigrees, and crucial production and adaptation phenotypes (like disease tolerance) hinders effective

breeding programs. This is compounded by limited genotyping labs and insufficient resources for biological material collection and ex situ conservation in many African countries.

- ***Insufficient funding and expertise***: research and conservation efforts suffer from a lack of financial resources and insufficient local expertise, particularly in genomic data analysis. This low funding also impacts the vital collection of data and samples in the field.
- ***Poor coordination and stakeholder engagement***: there's a notable lack of coordination among existing programs and research efforts, leading to duplication of studies and scattered results. Furthermore, the limited involvement of local communities in setting breeding goals and a tendency to underestimate the value of small breeds contribute to the challenges.