Expert Consultation Workshop
Technical Report

Present and assess previous and on-going experiences on Genetic Improvement of Small Ruminants
14-16November 2016, Izmir, Turkey

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EXECUTIVE SUMMARY

Title of the Workshop

Expert consultation workshop to present and assess previous and on-going experiences on genetic improvement of small ruminants

Partners

- Arab Fund for Economic and Social Development
- Islamic Development Bank
- Ministry of Food, Agriculture and Livestock of Turkey and the General Directorate of Agricultural Research and Policy (GDAR)
- International Agricultural Training Center (UTAEM) Izmir, Turkey
- Food and Agriculture Organization of the United Nations · Regional Office for the Near East and North Africa

Purpose

The main purpose of this workshop is to present and assess previous and on-going experiences on Community-based improvement of Awassi sheep and Shami goat breeds in order to define a common strategy for future collaborative projects and identify new opportunities for market-oriented production improvements.

Specific objectives of the workshop

Main specific objectives of the course are:

1. Review past and ongoing genetic improvement programs of Awassi sheep and Shami goat breeds in the target countries and the region including set-up, strengths/ weaknesses of the programs;
2. Discuss a regional genetic improvement strategy;
3. Draft regional concept note on "Genetic Improvement and Sustainable Utilization of Awassi sheep and Shami Goat Genetic Resources".

GENERAL OVERVIEW

Sheep and goat contribute significantly to the livelihood of resource-poor farmers in the West Asia and North Africa region. Vulnerability of the production systems to external forces is higher in households not keeping sheep and goats (Aw-Hassan et al., 2008). The socio-economic roles of sheep and goats, especially among their poor keepers are many and are well documented. These animals have a unique ability to adapt to, and produce under harsh environments. They are kept for meat, milk and as a source of income for the rural poor. Sheep and goats can play a vital role in supporting families during social functions and financial needs. Their fast reproduction rate enables their owners to recover quickly following a drought, and return on investment in sheep and goats can be fairly fast for the same reason. Due to inadequate husbandry practices not solely related to the farmers' knowledge, to mismanagement and misuse of the existing local genetic resources in West Asia, sheep and goat productivity remains generally low. However, where appropriate improvement programs have been instituted, significant impacts on the livelihoods of the poor have been achieved. Promising market prices and increased demand on animal products are leading to intensified production systems aimed at increasing milk and meat yields. Studies in the CWANA countries have identified limited access to improved animals as barrier to improved production. Only a few existing breeding programs have the potential to address these needs in the region. To respond to the glaring need for improved genetics there is need to design and implement small ruminant genetic improvement programs targeting priority species/ breeds in the region.

Awassi sheep and Shami goat are native breeds and are widely distributed in West Asia specifically in Iraq, Jordan and Lebanon. They are better producers compared to other breeds in the region. These breeds have special attributes that enable them to adapt to and produce under harsh environmental conditions and the climatic extremes prevailing in this region. Because of their special attributes, particularly the Awassi sheep, they are exported to other countries as improver breeds for milk, meat and wool production. However, these breeds are currently at high risk of genetic erosion because of the ongoing conflict and fragile geopolitical situation and lack of sustainable strategies for conservation, improvement and sustainable use.

TARGET AUDIENCE

25 participants attended the workshop amongst them five scientists from ICARDA, three from Iraq, 8 from Turkey, 5 from Jordan (including 1 farmer) and 4 from Lebanon (1 Farmer).

All participants (list of participants in Annex II) had the academic background and experience in small ruminant improvement. There was a good mix of professionals from Universities, the ministries of Agriculture and Livestock, international and national research systems, and private investors (farmers).

ORGANIZING COMMITTEE
- Dr. Barbara Rischkowsky, ICARDA Director - Sustainable Intensification and Resilient Production Systems Program (SIRPS)
- Dr. Mourad Rekik, ICARDA - Small Ruminant Production Scientist, SIRPS
- Dr. Aynalem Haile, ICARDA - Small Ruminant Senior Scientist - Breeding and Genetics, SIRPS
- Dr. Mesut Keser, ICARDA Country Manager – Turkey
- Mr. Charles Kleinermann, Head, ICARDA Capacity Development Unit (CDU)

WORKSHOP IMPLEMENTATION Summary

The workshop started with welcoming messages from ICARDA-Turkey office coordinator - Dr. Mesut Keser, ICARDA SIRPS Program Director – Dr. Barbara Rischkowsky and Turkey Head of Animal Husbandry Department – Dr. Ali Ayar.

A total of 10 presentations: 4 country reports; 2 ICARDA experiences; 3 Turkey experience and 1 from FAO were made during the first two days of the workshop.

The four country reports were on the status of Awassi sheep and Shami goat genetic resources focusing on the following issues:
- Resource base: what is available (population, performance….)
- What has been done in the area of genetic improvement of Awassi sheep and shami goat
- Some results have been achieved of the past work
- On-going research and development initiatives in Awassi and Shami improvement
- Future directions in Awassi and Shami improvement
- Actors in Awassi sheep and Shami goat improvement
- Where there any regional initiative
- Any additional information
- Your thoughts on initiating regional Awassi sheep and shami goat improvement programs: critical issues that need to be addressed

ICARDA scientists made presentations on experiences of small ruminant genetic improvement schemes in developing countries and reproductive technologies to disseminate improved genetics.

Turkey colleagues shared with the group their experiences on successful community-based sheep and goat breeding programs. The enormous work done on genetic improvement of small ruminants in Turkey, with support from the Turkish government, could be one of a successful example that could be replicated in the region.

FAO's experience related to conservation and sustainable use of small ruminant genetic resources in the region was also presented. After all presentations detailed discussions were made to distil out lessons. Following on the 10 presentations, the participants were divided into group.

The group exercise mainly focused on identifying challenges and opportunities in small ruminant genetic improvement programs (strengths/ weaknesses of existing programs) and writing up of the concept note. For the first exercise, 4 groups working for each country were formed and detailed information on challenges related to technical, institutional, infrastructure, human capacity and policies/ regulations were discussed. Opportunities for small ruminant development were also identified. List of the major challenges and opportunities identified from the groups is summarized below:

CHALLENGES
Technical
- Registration/ recording
- Low productivity of Awassi sheep
- Feed is very expensive
- Crossbreeding/ adaptation of new breeds
- Lack of mechanization as the system is small holder
- Limited characterization of local breeds
- Lack of communication between farmers and researchers
- Inability of farmers to accept new technology
- Lack of proper management of animals
- Longer term impact from breeding programs

Institutional
- Limited government support
- Lack of information flow from the institutions to farmers
- Identifying the right production objective of farmers
- Lack of technical knowledge to solve problems

Infrastructure
- Water scarcity
- Lack of breeding programs

Human capacity
- Rigidity of farmers to change/ adopt new technologies, new ways of doing things
- Lack of animal science graduates

- Lack of expertise, except in turkey
- Lack of skill at different levels
- Lack of basic education by farmers

Policies/ regulations
- Funding
- Continuous changes in regulations
- No imposing policy on introducing exotic animals not suited to the environment

- Lack of clear strategies on conservation and genetic improvement of SR

OPPORTUNITIES
- Government support/ subsidies
- Local knowledge about small ruminants
- Lucrative markets in Europe
- Availability of new technology
- Huge experience on small ruminant genetic improvement in Turkey

- Partnership opportunities among research, universities, CGIAR, associations.
- Performance data available, though from stations

The group exercise on identification of challenges and opportunities paved the ground for going in to the details of working on key elements for setting up regional Awassi sheep and Shami goat breeds conservation and improvement. For the purpose, four groups working on Awassi sheep and 1 group on Shami goat were formed and worked for few hours and this was presented by the group and discussed in plenary. This discussion also helped to identify the major elements that need to be included in the development of the concept note, which was one of the objectives of the workshop.

The same group that worked on identifying key elements was tasked with write up on the elements of the CN. The topics identified to be included in the CN were: available knowledge on Awassi sheep and Shami goat improvement, breeding objectives for Awassi sheep and Shami goat, breeding structures, and enabling environments to sustain breeding programs. Please refer to Annex III for a brief write up of the group work.

On the third day, the participants went to visit two farms. UTAEM farm has capacity of around 2000 sheep and 1000 goats. It is huge commercial enterprise with clear business plan to export breeding animals to different countries. The farm also has dairy processing facilities. The second farm which is located close to UTAEM also keeps about 400 sheep and goat. Both farms are part of the Turkey small ruminant's community-based improvement scheme.

Annex I: Workshop Program

Time	What	Format
Day 1 – Monday 14th November		
8.00-8.30	*Registration*	
8.30-8.50	Welcome remarks, agenda review, brief introductions	Plenary
8.50-9.50	Presentation: country reports (Iraq, Jordan, Lebanon, Turkey)- 15 minutes each	Plenary
9:50-10:20	Discussions	Plenary
10:20-10:40	*Coffee*	
10:40-12:30	Challenges/opportunities in SR genetic improvement programs (strengths/ weaknesses of existing programs)	Group exercise
12:30-1:30	*Lunch*	
1:30-1:50	Presentation: Experiences of genetic improvement in SR	AH
1:50: 2:10	Presentation: FAO plan for SR genetic improvement and conservation in the region	MT
2:10-3.10	Key elements for regional Awassi sheep and Shami goat breeds conservation and improvement	Group exercise
3.10-3.30	*Coffee*	
3.30-4.30	Key elements for regional Awassi and Shami breeds improvement	Group exercise
4:30-4.45	Successful community-based SR improvement: example on Honamli and Hair Goat from Turkey	M. Saatci
4:45 –5:00	Successful community-based SR improvement: example on Pırlak-Daglic and Ramlic Sheep from Turkey	M.Tekerli
5.00- 5.15	Successful community-based SR improvement: example on Breeder Association from Turkey	Sheep & Goat Assoc
5.15-5.30	*Wrap-up of day 1*	*Plenary*
Day 2 – Tuesday 15^h November		
8.30-8.45	Recap of day 1 and agenda review	
8.45-9.00	Presentation: dissemination and delivery systems of improved genetics	MR
9.00-10.30	Elements of the regional CN-writing	Group exercise
10.30-11.00	*Coffee*	
11.00-12.30	Elements of the regional CN- writing	Group exercise
12.30-1.30	*Lunch*	
1.30 - 2.45	Elements of the regional CN - exchange and review (feedback)	Plenary
2.45 - 3.15	Elements of the regional CN – incorporation of feedback from exchange and review	Group exercise
3.15-3.30	*Coffee*	
3.30-4.30	Other considerations	Group exercise
4.30-5.00	*Final wrap-up, next steps*	Plenary
DAY 3 - Wednesday 16th November		
Field visit to UTAEM sheep and goat breeding farm		