Report#4 on ICARDA Project
"Community Action in Integrated and Market Oriented Feed-Livestock Production in Central and South Asia."
Activity #16:
"Value added local processing of goat fibers by women and assessing the characteristics of naturally colored mohair and the potentials for its marketing."

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1. Project Objectives.

The activity 16 *"Value added local processing of goat fibers by women and assessing the characteristics of naturally colored mohair and the potentials for its marketing"* collaborates with Angora goat producers and women's groups in the Sugd region on producing value-added yarn and knitted products for export. Export of yarn and knitted products has the potential to help rural women in the region to increase their earnings and raise their families out of poverty. In order to produce luxury yarns, the Tajik spinners need access to high quality mohair fiber. Production of quality mohair in turn requires good breeding practices and animal husbandry. The project collaborates with Angora goat farmers and local and international breeding experts on developing new breeding programs to improve fiber quality and produce mohair suitable for spinning high priced, luxury yarns. The work on goat breeding, mohair processing and export of value-added products such as yarn is expected to facilitate collaborative linkages among all stakeholders – goat farmers, scientists, spinners and consumers of mohair products - and lead to considerable increases in the incomes from mohair producers and processors. Most mohair processing in Tajikistan is done by poor rural women who will be the greatest beneficiaries of the project activities.

2. Angora Goat Contribution to the Local Economy.

The development of the mohair sector is expected to generate long-term benefits for the regional economy. Based on the initial research conducted by the project, there are around 250,000 Angora goats produced in the Asht, Gafurov and Matchinsk districts of the Sugd region. The majority of goats are owned by small farmers with herds of 100-300 animals and by rural households that have 20-50 goats. The remaining goats are owned by state farms that are undergoing privatization. The project has calculated that sales of mohair bring Angora goat producers around $1.5 million USD each season. This represents considerable revenue for a country that has a per capita income of $60/month.

Angora goat fiber provides an earning opportunity not only for farmers who produce the goats but also for rural women who add value to mohair by processing it into yarn. In fact, the sales of handspun mohair yarn represent the most important source of income for

rural women in the Sugd region, most of whom are avid spinners and sell mohair yarn throughout the year.

In spite of its importance for people's livelihoods, the long-term viability of Angora goat production is threatened by the lack of breeding services, poor access to global markets and the severe poverty and isolation of the producers and processors. The following sections describe the problems of the Angora goat sector and the solutions offered by the project.

3. Brief History of Angora Goat Production.

Angora goat production in the Sugd region is the result of unique historical circumstances and ecological conditions – the Angora goats were introduced in Tajikistan during the early Soviet period, in the 1930s, to produce mohair for the Russian textile factories. The goats thrived in the agro-ecological zone of Northern Tajikistan - they easily adapted to the semi-desert conditions and, unlike other livestock, could find enough forage on the barren, rocky foothills of the Matchinsk mountains.

During the Soviet period, the Angora farms received financial, institutional, technological and scientific support from the state. Scientists from the Angora breeding department of local Livestock Institutes worked with the state farms on improving breeding and mohair quality since the first shipment of Angora goats to Tajikistan in the 1930s. The state breeding farms and the scientists achieved considerable accomplishments their breeding work and developed a new breed called "Soviet Mohair."

Mohair production during the Soviet period was a lucrative business. Soviet textile factories generated a consistent demand for Tajik mohair produced by large farms while small private farmers sold mohair to spinners and knitters in Russia. By the 1980s, Tajikistan became the mohair capital of the Soviet Union and prices for mohair were very high. According to testimonies of traders who worked on the market, 1 kg of mohair could buy a plane ticket to Moscow.

4. Current Problems in the Angora Goat Sector: Poor Extension Services and Market Access.

The Tajik mohair sector has undergone several crises after the breakdown of the Soviet Union in 1991. First, after the Soviet Union had collapsed in 1991, the state support for Angora goat production has evaporated. The Livestock Institute stopped receiving funding for breeding and extension work and the demand for Tajik mohair declined as many Russia's textile factories went bankrupt. Soon after the breakup of the USSR, Tajikistan became involved in a bloody civil war in 1993-1997 that prevented market restructuring of the mohair sector. After the war Tajikistan began a slow process of market transition. The pastures that belonged to state farms are slowly being privatized and Angora goat production is moving from state to the private sector.

However, the transition from state-run to private farming creates many challenges for small Angora goat producers who are trying to establish sustainable private farms. The Soviet state system that provided assistance with Angora goat breeding and mohair

marketing to the state farms no longer exists and there is very little funding for such services under the new Tajik government. In contrast to private producers in other Angora breeding countries such as South Africa, Australia and Argentina who benefit from breeding programs, extension services and marketing infrastructure sponsored by their governments, the new private producers in Tajikistan are left without any technical support and know-how regarding breeding, animal maintenance, fiber quality standards and mohair marketing. This has lead to poor breeding practices and a gradual decline in the numbers of breeding animals and fiber quality. It is certain that a continuous absence of technological, scientific and organizational assistance for the emerging private farmers would threaten the long-term competitiveness of Tajik mohair and the survival of the Angora goat sector.[1] This would in turn threaten the livelihoods of those who depend on it.

5. The Blessing and the Curse of the Russian Market: Stable Demand but Poor Incentives for the Production of Fine, Quality Fiber.

Although the long-term viability of Angora goat production remains in jeopardy unless an effective production infrastructure is developed, the short-term resilience of the Angora goat sector has been remarkable. While sheep and goat numbers declined dramatically all over Central Asia after the breakdown of the Soviet Union, Angora goat production in Tajikistan has remained relatively robust in spite of the pressures of market transition, civil war and severe poverty. Based on our research, one reason why the Tajik Angora goats have been able to survive is the relatively stable demand for Tajik mohair in Russia. The Russian textile factories that recovered after the market transition continue to use Tajik mohair to produce wool and mohair blends. Even more importantly, there is a well-developed cottage industry in the Caucasus (the Voronez region) that uses Tajik mohair to produce mohair shawls, scarves and pullovers which are then sold all over Russia and exported to northern Europe. Mohair socks, shawls and vests are highly valued by the Russians for being extremely useful during the severe Russian winters. The traditional mohair-processing cottage industries in Russia were able to expand during the market transition and provide a solid demand for Tajik mohair each season.[2]

The tight market link between the Tajik mohair producers and Russian processors has been a blessing and a curse. On one hand, it has provided a reliable market for Tajik mohair even during the difficult years of the post-Soviet collapse. On the other hand, the singular focus on the Russian market and the isolation from other mohair markets has been costly for Tajik producers in terms of generating poor prices for kid and fine adult mohair, and producing poor incentives to breed for quality as opposed to quantity.

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[1] This is because the Angora goats are bred for fiber production and are very inefficient meat and milk producers. Unless their receive the needed attention in terms of breeding and maintenance to produce quality fiber, they become economically inefficient.

[2] The other reason for the Angoras' survival is their superb adaptation to the harsh agro-ecological conditions of Northern Tajikistan (poor pastures, rocky soils, limited water sources and extreme continental climate). These conditions are not suitable for the production of cows and even sheep cannot be produced in this area without supplementary feed that many farmers cannot afford.

In order to understand the ways in which the mohair trade with Russia affects mohair production in Tajikistan, it is important to appreciate the unique characteristics of the Russian mohair market. These include the lack of processing capacities for kid and fine adult mohair which is in high demand on the world market, and consequent lack of demand for fine fiber. Unlike mohair processors in Italy, France and England, Russian factories and cottage industries process primarily coarse mohair and do not produce luxury yarns and textiles. As a result Tajik farmers do not have a market for high-value, luxury fibers such as kid mohair. Kid and fine adult mohair remains highly underpriced on the Tajik market, costing farmers hundreds of thousands of dollars in revenue. For example, in May 2008 kid mohair sold on the Australian market for $29.50/kg and adult mohair sold for $8.50 kg. In Tajikistan the respective prices were $4.30 for kid mohair and $7.65 for adult mohair. This means that the Tajik farmers sold approximately 28 tons of kid mohair for $122,000 while Australian farmers sold the same amount for $826,000.[3]

The low prices for kid and fine adult mohair are not only hurting the farmers financially, but also generate the lack of incentives to breed for fine, quality fiber that is demanded by many global processors. While other mohair-producing countries are trying to produce fine, kemp-free mohair, Tajik producers remain completely unaware of global trends in the mohair industry and continue to breed for coarse fiber and for volume. The lack of interest in fine mohair of yearling kids is clear during any visit to the mohair market in the regional capital Khodzhand – when asked which type of mohair is most valuable, every farmer/seller will say that it is the coarse, adult mohair. The focus on strong or coarse fiber at times when Angora producers from other countries breed for fine mohair keeps the Tajik Angora goat sector in "arrested development" and threatens its long-term viability and adaptation to changes in global fiber markets.

6. Problems of Women Spinners: Low Quality Products and Low Prices.

Tajik women who process mohair into yarn are equally jeopardized by limited market access, information and know-how. Their primary outlet is also the Russian market that traditionally demands cheap, coarse yarns and utilitarian products such as thick socks and gloves. The spinners use low quality mohair for spinning and sell yarns for $10kg and a pair of hand-knitted socks for $2. At the same time, fine mohair knitting yarns sell in stores in the United States for as much as $540/kg and hand-knitted socks sell for $25-30. However, the Tajik women do not know of such markets or how to access them.

7. Solutions Pursued by the Project: Integrated System focused on Breeding, Quality Processing and Luxury Markets.

In order to increase prices for Tajik mohair and ensure the long-term viability of Angora goat production, it is necessary to address the two key problems described above: lack of scientific, technological and organizational capacities to breed for quality fiber, and poor access to global markets for luxury fibers, specifically value-added fine and kid mohair. These two problems cannot be solved individually, but rather through the creation of a new, vertically integrated system of mohair production, processing and marketing

[3] This is based on the calculation that approximately 17% of the total number of goats (40,800) are kids and that each kid produces around 0.7kg of mohair (28.560kg total).

focused on luxury fibers. Such system will provide farmers with the technical, scientific and organizational tools to improve breeding and fiber quality and link them with mohair buyers who will reward them for investing in fiber quality improvements by paying higher prices for fibers that meet specific quality standards. The farmers ought to understand how the adoption of specific breeding and herd management strategies leads to improvements in fiber quality and how increases in fiber quality lead to increases in earnings from mohair sales. Without some guarantees of these causal effects, farmers will not be willing to invest in these improvements. Vertical integration of all key players in the new mohair production, processing and marketing system can provide such guarantees by lowering risk for farmers and initiating a market-driven dynamic that will generate new opportunities for mohair producers and women spinners.

In order to develop a market driven, vertically integrated production and marketing system for Tajik mohair it is necessary to identify a suitable market for Tajik mohair production, and then work to link the producers and processors to this market while simultaneously increasing their capacities to meet the market needs. The following paragraphs outlines the new market identified by the project and explains how the project works on building the capacities of mohair producers and processors to successfully serve this market.

8. New Market for Tajik Mohair: US Market for Knitting Yarns and Products.

The US market for knitting yarns has been in the process of considerable boom. During the last decade the numbers of knitters in the United States increased dramatically and so did the imports of luxury knitting yarns made of natural fibers. Based on information offered by the website of the Craft Yarn Council of America, 36% or 53 million American women know how to knit or crochet – a 51% increase over the last ten years. Only since 2002, participation in the craft of knitting and crocheting increased by around a quarter. Many young women aged between 25 and 34 were starting to knit which resulted in an exponential growth in the import of knitting yarns into the United States between 2004 and 2005. Based on the statistics, yarns made of natural fibers were especially in demand. Many knitters were spending more money to buy expensive handspun, hand-dyed yarns made of 100% wool or mohair. Based on the research conducted by the project, the retail prices of luxury kid mohair yarns were as high as $560/kg.

The market for knitting yarns in the United States provides a perfect opportunity for the Tajik women – it values yarns made from natural fibers such as mohair and prefers handspun yarns over machine-spun yarns. The prices of fine, kid mohair yarns are much higher than $10/kg which the Tajik women receive for coarse mohair yarns made for the Russian market. In addition to knitting yarns, the US market presents an opportunity for the sales of luxury items such as scarves, sweaters and other knitted products.

8.1 Capacity Building with US Consumers: Creating Awareness about the Project and Tajik Mohair.

In order to promote the Tajik mohair yarn in the US, it is important to inform the American knitters and consumers about the project, the Tajik women and the qualities of the yarn and products. The project developed a website that explains the project objectives, describes the

yarn and offers photographs and information about the spinners. It also designed a booklet that accompanies the yarns marketed in American stores and will use a variety of other means to increase information and public awareness about the project activities. The US knitters are starting to work to publish an article about the yarn in the Spin Off Magazine and an article will also be published in the Vogue Knitting Magazine.

9. Capacity Building with Tajik Spinners: Fine Yarns for Luxury Markets.

As mentioned previously, most rural women in Tajikistan make a living by producing coarse, cheap yarns for the Russian market. This means that they are proficient spinners and learned how to integrate spinning into their daily lives. They spin at their homes, whenever they have time, and do not have to abandon their children or their household duties, which is important in the context of their traditional culture and gender roles. Given the substantial differences between the price of handspun mohair yarns on the Russian and the US market, the Tajik spinners have a strong economic incentive to produce yarns for export to the US. The objective of the ICARDA project is to help them to access the US market through capacity building in the following areas:

1) Working with women's groups on improving spinning technique to produce fine, even yarns.
2) Introducing new technologies such as spinning wheels to improve productivity and the ease of spinning.
3) Producing yarns samples for the US market, bringing in market feedback and test-marketing yarns.
4) Organizing women's groups into cooperatives that could effectively perform all tasks involved in yarn spinning, packaging and marketing.
5) Training women to produce knitted luxury products (shawls, sweaters) for export.
6) Training women in fiber selection and linking women's groups with Angora goat farmers who produce quality mohair.

9.1 Working on Yarn Production: Training Spinners to Make Fine Yarns.

During the first two years, the project has trained six groups of spinners (overall 45 women) in spinning luxury yarns. In November 2009 the project began collaborating with 12 additional organized women's groups (with 6-12 women in each group) and training them to spin fine yarns. The women were shown samples of Australian, South African, French and Italian yarns currently on the US market and explained how to produce yarns according to the standard established by the project. Based on the project experience, the majority of women who have enough experience in spinning yarns for the Russian market can be relatively easily trained to improve quality and produce fine yarns for US market. In the next phase of the project, training will be facilitated by training trainers and publishing a booklet that explains the quality standard for the US yarn and includes a small yarn sample.

The interest on the part of the women to join the project and learn how to produce fine yarns has been considerable and it is clear that hundreds of women from the region could successfully participate in producing quality yarns for the US market in the future. It is most likely that all spinners who are capable of producing fine yarns according to the project standard would switch to this market while those who cannot meet the standard or are still learning how to spin

would continue to make yarns for Russia. The project will work on producing more specific estimates of potential beneficiaries in the next report in spring 09.

9.2 Introducing Spinning Wheels: Increasing Productivity.
The project has imported four New Zealand spinning wheels and distributed them among the women. Based on their testimonies, the use of a spinning wheel increases the spinner's productivity at least by 1/2. The spinning wheels are also much easier to use that the traditional spindles and the women learn how to use them relatively quickly. Most women expressed a desire to obtain a spinning wheel and the project is trying to facilitate a domestic production of spinning wheels - the imported spinning wheels cost $400/piece and domestic production is the only viable long-term option. Several masters in Tajikistan began producing prototypes of spinning wheels based on the imported models but additional investment would be needed to fully develop the production.

9.3 Producing Yarn Samples, Receiving Feedback and Test-marketing Yarns.
Since the start of the project, the project coordinator based in the US has established a relationship with American knitters and yarn storeowners who have been testing yarn samples produced by the spinners. The individual samples have been registered and the spinners received a direct feedback from the knitters. After two years of sample testing, the project has developed a standard for the yarns to be exported and new spinners are being trained to maintain the standard. New types of yarns will be developed in the course of the project and standardized, including silk/mohair blends spun from locally produced fibers.

In February 2009, a booklet to accompany the yarns was produced that provides information for yarn buyers. A brand name "Mohair Magic" has been established and the first 18 bundles of mohair yarns are being test-marketed in the Sow's Ear store in Verona, Wisconsin, USA. The yarns will sell for a price of comparable kid mohair yarns produced by the Australian Company "Wagtail Yarns" for a wholesale price of $140/kg. The women will receive $70/kg and $70 will be used to export the yarns from the community in Tajikistan to the US yarn store.

Given that most of the shipping and other costs are currently subsidized by the project, all proceeds from yarn sales will be re-invested into the project activities through a "Magic Mohair Fund." The fund will be used by the project to purchase raw material for the spinners and benefit the producer's communities in ways that will be agreed upon jointly with the project team. The possible options include designing micro-lending schemes for women to purchase raw fiber or spinning wheels, and for farmers to purchase or borrow breeding animals.

9.4 Organizing Women's Producer Cooperatives.
The project plans to collaborate with a local NGO to organize the spinners' groups into cooperatives that will be responsible for yarn production and export. The NGO established 12 cooperatives in the Asht region that are focused on producing yarn for the Russian market. These cooperatives include 6-12 women members, are lead by elected women leaders and are starting to use micro-lending to purchase raw mohair for spinning.

The project plans to collaborate with the NGO on further developing the cooperative infrastructure with the orientation on the American market.

In November 2009, the project team visited several of the cooperatives and explained the project activities and objectives to their members. In the spring of 2009 the project plans to include the groups in the training.

9.5 Training Women to Knit Clothing.
In October-November 2008 the project began collaborating with knitters in Tajikistan to use some of the yarn to knit shawls and sweaters based on western models. This would add more value to mohair and open a new market for knitted clothing. However, currently there are only a few experienced knitters in Tajikistan who have the skills to produce such products – most women are able to knit only socks, gloves and in some cases simple scarves. The project plans to expand the search for knitters in 2009 and begin the training of trainers to develop this new component. In spite of the current limitations, knitting is another viable opportunity to add additional value to local fiber, introduce new skills and create new earning opportunities for women to supply products to luxury markets.

In November 2008, the project team started working with two knitters in the city of Khodzhand who produced a sample of a scarf and a sweater based on a US model. Both samples received were high marks from US knitters and potential buyers. The project plans to continue working with the knitters in the spring of 2009, add new knitters to the group and start developing a training program for knitting luxury scarves, sweaters and other items for the US market.

9.6 Training in Fiber Selection and Linking Spinners with Mohair Producers.
The most important factor that influences yarn and product quality is the quality of the fleece from which it was spun. Even the most skillful spinner cannot produce fine yarn unless she has high quality raw mohair. Unfortunately spinners have been using low quality mohair to spin yarn for the Russian market and do not know how to correctly select fleeces to produce fine yarns for the US market. The project has been training all groups in fiber selection and in sorting and grading individual fleeces. Given that the spinners have considerable incentives to produce fine yarn for export, the groups that received training have been very proactive in searching for quality fiber. However, their search for fine, kemp-free mohair has been challenging because of the poor breeding practices of local farmers.

Based on the project research, the quality of fleeces produced by different farmers varies considerably. A minority of farmers produce Angoras with finer mohair that have less kemp and the project can use as many as 80% of their kid and yearling fleeces, and about 30% of skirted fleeces of older goats, for yarn-making. However, the majority of farmers produce animals with coarse fiber that has a high percentage of kemp and cannot be used for spinning luxury yarns. In some cases, none of the goats a farmer produces, including 6 months old kids, have fiber that is fine enough for luxury yarn. The project

plans to assist the spinners by linking them with farmers who produce finer mohair and assist the farmers by teaching them how to select for fine, quality fiber.

10. Capacity Building with Mohair Producers: Improving Breeding and Fiber Quality.

The greatest bottleneck the yarn project faces is the poor quality of fiber produced on many farms, especially the presence of kemp. Therefore, the Angora breeding program is perhaps the most important component of the project – the yarn spinning and marketing activities cannot be scaled up unless the Angora goat farmers can supply the spinners with quality raw material. In order to facilitate this, the project needs to identify farmers who produce quality fiber in the short term, and work with farmers on improving breeding and fiber quality in the long term

10.1 Work on Selecting Mohair Producers, Testing Samples and Assessing Quality.

As explained above, the fiber quality varies greatly among different farms. Some farmers produce goats with finer, more homogeneous fiber whit less kemp, while most farmers produce relatively coarse, high CV fiber with a high percentage of kemp. The project staff and the local scientists work to collect and test fiber samples and assess mohair on different farms to create a map of mohair producers and mohair quality. Those farmers who produce the highest quality mohair will be linked with the project spinners and their fiber will be purchased for higher prices by the spinners' groups. The project will also work to recruit these farmers into the breeding program.

In order to expand the group of farmer participants, the project has to select farms not on the basis of location (as was suggested during the original project design) but on the bases of animal and fiber quality. In other words, farms that produce high quality goats have to be at the focal point of the breeding activities.

10.2 Work with Farmers and Scientists on Creating Breeding Nucleuses.

The project works with local scientists led by Matazim Kosimov and with Joaquin Muller, an Angora goat breeding specialist from Argentina, to improve fiber quality. The work is focused on creating breeding nucleuses on different farms, collecting and testing samples, developing schemes for exchanging breeding animals and establishing a variety of collaborative ties that can lead to the creation of producers' associations and strengthen the sector. The breeding nucleuses will play an essential role in producing quality breeding animals. The project will work to design schemas of how to distribute the animals to different farms.

The project also plans to organize workshops for farmers and develop a campaign focused on raising awareness about breeding and fiber quality issues.

Given that the spinners have the greatest incentives to improve fiber quality, the project plans to promote training in animal selection and breeding for women spinners who live at the farms (i.e. the farmer's mother, wife and daughters).

Based on the project experiences, the responses of farmers towards new breeding priorities vary, but most farmers are interested in working with the scientists and ready to

follow their recommendations regarding animal selection. The project team has identified several farmers who produce very high quality colored and white Angoras and who already started working on developing breeding nucleuses.

10.3 Shearing Six Months Old Kids for Super Kid Mohair.
The finest and most valuable mohair is so-called "super-kid mohair produced by 6 months old Angora goat kids. However, prior to the project activities, there has been no demand for this type of fiber on the Tajik market. Some farmers sheared 6 months old kids for other reasons - in some areas the small kids can get caught on spiky plants and die and farmers shear them to prevent this.

The project started working with farmers to shear 6 months old kids for super kid mohair and working with spinners to produce super-kid mohair yarns. Based on the fist results of the test-marketing, these yarns will be most desirable by the knitters.

Conclusion:
The project work to date shows that the market for Tajik luxury mohair yarn and products is viable and that it can benefit hundreds of Angora goat producing families and women spinners and knitters in the region. The test-marketing shows that the US knitters are interested in purchasing the yarn and the training of Tajik spinners shows that the women are relatively easily trained to spin quality yarns. The marketing infrastructure for the yarns can be developed and new groups of women are ready to be trained. The greatest obstacle to scaling up the project will be supplying the women with enough fine, kemp-free mohair that would satisfy the project quality standard. In order to expand the supply of quality mohair in the short run, the project will work with farmers on introducing a new practice of shearing 6 months old kids. This is a fast and reliable method of increasing the supply of quality fiber for spinners within one or two seasons. The other method is identifying additional farmers who produce quality goats, regardless of their location, linking them with spinners' groups and including them in the breeding program. The long-term project objective is to improve fiber quality on all or most farms by creating breeding nucleuses and disseminating quality bucks among farmers. This work will be paralleled by a regional campaign focused on mohair quality issues, breeding and animal maintenance practices, local processing and markets. The technological expertise supplied by the project and the new market incentives will facilitate this process.