

Nepalese organic baby clothing

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AGR\*2150 Plant Agriculture for International Development

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November, 2014 - Fall Semester

Organic wool for the production of blankets, clothes, socks, and swaddling wraps, for babies, holds significant potential as an export product from Nepal. **The benefits to Nepalese hillside farmers of raising sheep**

Rearing sheep is important for farmers that live in hillside farms because crops are not grown easily in those regions. The revenue of the farming system on the Nepal's hills relies on livestock and its products because there is insufficient production from the agriculture on those hillside farms (Food and Agriculture Organization of the United Nations [FAO], 1992). The livestock herd in Nepal is considerably large, and it is composed of large animals that include buffalo and cattle, and small animals such as sheep, and goats. Farmers who cannot afford to raise large animals because of cost will choose to raise small ruminants instead; besides, sheep and goats do not have any taboo related to religion, social, or cultural (FAO, 1992). Sheep and goats help to maintain soil fertility in the hills due to the superior quality of their manure (FAO, 1992). Moreover, Nepalese farmers will benefit from additional by-products that can be produced along with the production of wool, for example, meat and milk from the sheep, and lanolin oil extracted from the wool.

### **Herd management**

In regard to the type of system, farmers raise sheep under a sedentary system when there is a mix of farming on the system, animals and crops on the same area. Considering the management of sheep on the landscapes of hills, animals should be kept under a migratory system with full grazing and additional supplementation of 40-50 g salt/head/week or fortnight (FAO, 1992). The migration of sheep from lower hills to high hills will be determined by the fodder and forage available (FAO, 1992). Vitamins and minerals such as vitamin A, cobalt, iodine, selenium, and calcium, should be added as a complementary part on the diet when the pasture has a lack of those nutrients (Crean & Bastian, 1997). It is important to notice that the quality and quantity of food directly affects the production of wool. A diet based on high quality protein is essential for the production of wool, milk, lamb, and also for the

own sheep's maintenance (Stockdale & Macey, 2008). The nutrition for pregnant ewe is differently managed from other sheep; the requirement increases especially during the last eight weeks of pregnancy in which the foetus gains most of its weight (Crean & Bastian, 1997). Moreover, sheep are targets of diseases such as nematodes that can be a relevant problem in an organic farm because the use of pesticides is prohibited, but this problem can be successfully overcome by properly feeding the sheep. Diseases can be controlled by managing the diet of sheep and choosing correct plants to feed them, for instance plants that help to increase the digestion of protein or plants that are anti-parasitic (Stockdale & Macey, 2008).

### **The Merino breed**

Merino is a breed of sheep that produces the softest type of wool available. There are four different kinds of Merino breeds with respect to the wool type and body size, which are fine wool, medium wool, South Australian and poll Merinos (Crean & Bastian, 1997). The most suitable option for the production of wool would be the fine wool or South Australian. The fine wool sheep produce 2.5 to 4 kg of wool that is superfine wool in the 17 to 19 micron range, and it makes up 5% of the Australian Merino flock (Crean & Bastian, 1997). The South Australian accounts for 40% of the total of Australian Merino flock, producing wool in the 23 to 26 micron range, with an annual wool cut of 5 to 7 kg (Crean & Bastian, 1997). Considering the finer the wool is, the more soft will be the clothes, the Merino fine wool is the best option; however, efforts should be made in order to maintain the maximum production of wool, which is around 4 kg.

### **Wool production and clothing manufacturing**

The manufacturing process of converting raw wool to organic clothes requires five important steps. According to Ryder & Stephenson, the first step is to remove all the dirt and grease, and then organize the fibres in a specific direction of their spin. The next step is to spin the wool in order to form

yarn, followed by interlacing those yarns into a fabric. The final step will depend on the kind of cloth that has to be produced (Ryder & Stephenson, 1968). Farmers in Nepal work as shepherds while village women are engaged to spend their available time in wool spinning and weaving, obtaining additional income (FAO, 1992). The whole manufacturing will promote countless jobs for the Nepalese community, requiring the establishment of a cooperative in order to manage the trades and jobs as well as to organize the manufacturing stages cited above.

Afterwards, the wool will pass through a process in which it can be dyed by natural indigo extracted from the plant *Indigofera tinctoria*. It is believed that indigo is one of the world's most valued pigments in different cultures and religions (McKinley, 2011). According to FAOSTAT, the production of indigo in Nepal showed an average of 4,500 tones in the past four years (2014). The dyestuff indigo needs to be reduced and dissolved with an alkali product in order to be soluble in water, and then the dyestuff is ready to be applied to the fibres (Gerber, 1977).

### **Export Potential**

Foreign companies that sell products for babies will be engrossed by the 100% organic handmade sheep wool products, such as blankets, swaddling wraps and socks, which are designed especially for babies. There are some Canadian companies that would be interested in organic baby products from Nepal. The Company "BabyJoy.ca", which works especially with organic materials is located in Toronto, and it can be reached at 1.855.378.6886 or at info@babyjoy.ca. Another company would be "Caterpillar Baby" also located in Toronto, and it can be reached at 1-888-884-2880, or if in Toronto, 647-728-0952.

The main feature of this project will be the lack of pesticides residues on its products, being indeed an excellent option to newborns. Nowadays there is a huge concern regarding the high usage of synthetic chemicals products on farms that are also existent on its by-products. For instance, cotton,

which is considered one of the major crops on the textile industry worldwide, relies heavily on pesticides. Although organic products carry a higher price than conventional products, the market of organic clothes around the world is increasing. There are only few countries that are suppliers of organic wool, increasing the chance that exports of this product from Nepal will succeed in the market. The production of organic wool in Ontario, accounted for 300 pounds (Organic Trade Association [OTA], 2005).

There are standards for organic livestock production that must be followed in order to obtain organic certification for a product. For instance, the animal must be fed with organic forage, while synthetic products such as hormones, pesticides on the animal or on the field, are forbidden as well as the use of genetic engineering, and the farmer must have good management practices with the livestock and the land.

Regarding the transportation logistics, it will not be any problem because blankets, clothes, socks, and swaddling wraps, do not need to be transported under specific conditions of temperature, or humidity. Besides, a large quantity of those products can fit well in any container that is large enough to fit on airplanes and be transported to other countries.

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