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Developing a small ruminant industry in the Caribbean



Over the next few decades, a growing population, rising affluence and urbanization will significantly impact global food production. With average incomes set to increase, the demand for meat and meat products in particular is rising at a rapid rate, particularly in developing countries. Recent estimates by the Food and Agriculture Organization project an increase of 70% in meat consumption by the time the world's population reaches 9.6 billion in 2050.

By that same year, CARICOM's population will reach 22 million and with small ruminants (goats and sheep) already an integral part of the traditional Caribbean agricultural landscape, opportunities abound for the region to capitalize on this trend. Stakeholders in the sector, including CARICOM's Ministries of Agriculture, already consider its development a priority, knowing that the creation of a modern, sustainable industry would achieve a number of important national and regional goals - foreign exchange savings through import substitution; employment generation; poverty alleviation and rural development.

The small ruminant industry is ideally placed for intensification and development. On the production side, sheep and goats are well suited to the wide range of both geophysical and socio-economic conditions commonly encountered in the region. Small ruminants are able to convert low quality forages and feeds into high quality products; are small in size; use minimal land space and require low capital investment per head, making them ideal livestock for resource poor Caribbean farmers.

In terms of market, with no religious or cultural taboos forbidding the eating of meat from small ruminants, their social and traditional importance is well established. They form an integral part of year round regional cuisine with peak periods of consumption associated with celebrations such as weddings, religious events and

KEY FACTS

- ▶ Small ruminants have been a traditional part of the regional agricultural landscape and an industry is well placed for development.
- ▶ Local production only accounts for 10% of meat consumed regionally. The combined sheep and goat meat import bill for the CARICOM was US\$46.44 in 2011.
- ▶ The small ruminant industry of the region though relatively small at present, contributes to poverty alleviation, rural livelihood, food security and income generation.
- ▶ Opportunities exist to develop a sustainable industry but constraints must first be addressed including insufficient investment; low productivity; poor genetic stock; lack of access to land and forage; poor handling and food safety practices; high cost of supplemental feed.
- ▶ FAO's assistance to the Caribbean region is currently focussed on two areas: technical assistance to improve production techniques and policy assistance to create an environment conducive to the creation of a sustainable industry built on value chain development.

other cultural activities. Additionally, there is already an established value chain for milk, hides and manure which can be further explored.

The current outlook

There are approximately 2 640 966 sheep and 3 516 607 goats in CARICOM countries, the majority of which are found on small family farms where a mixed, integrated crop-livestock farming system is the norm. In many instances small ruminants graze on land that is unsuitable for crop production, and use feed resources that cannot directly be used by humans.

Many small ruminant farmers are landless and so must either utilize communal pastures or tether their animals wherever grass and forages are available. A large percentage of farmers use the 'cut and carry system' where animals are housed and grass and forages are cut and fed to them indoors or in confined areas. This is supplemented with readily available by-products such as crop residues, citrus pulp, molasses and spent brewer's grain. Some farmers also purchase additional commercial grain-based rations that are strategically fed to the animals for maximum effect before breeding, during pregnancy and in the early lactation period.

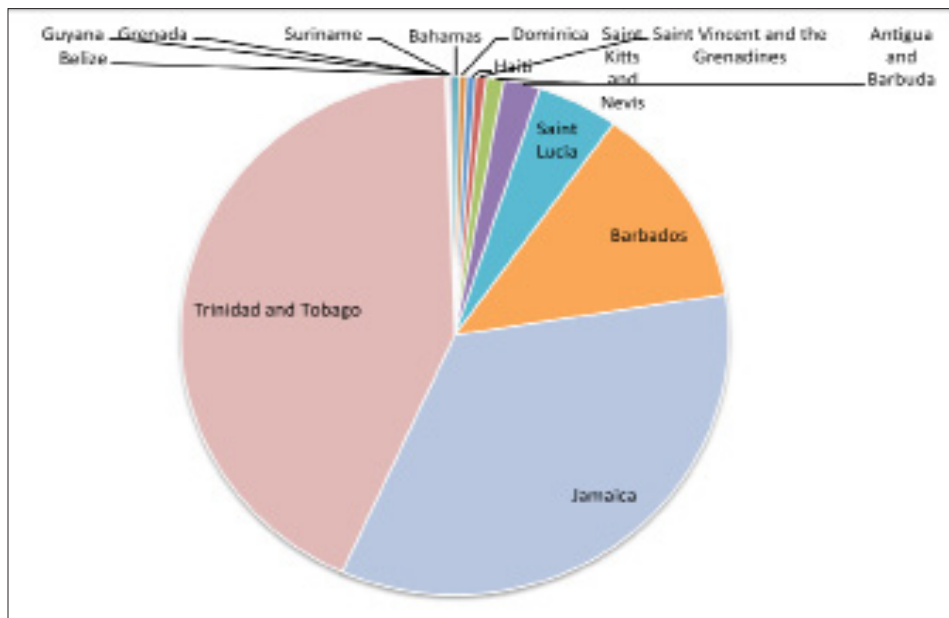


Figure 2 - CARICOM imports of sheep and goat meat by country in 2011 - Source FAOSTAT

In 2012, the collective efforts of these farmers produced 3.242 million kilograms of meat of which 72% was goat meat (Table 2). It is likely however that this figure is underestimated due to the unrecorded slaughtering of animals outside of approved abattoirs, in backyards or informal facilities.

Local production however, currently falls well short of consumer demand. In 2011, 9.523 million kilograms of small ruminant meat was imported into the region at a cost of USD \$46.5 million, mainly from New Zealand and Australia, accounting

for 90% of the meat consumed. Three countries alone - Barbados, Jamaica and Trinidad and Tobago - collectively accounted for 87% of total import bill for lamb and goat meat in 2011 (Figure 2).

Opportunities

With CARICOM's food import bill at a staggering US\$4.75 billion and set to rise, development of the small ruminant industry could be key to a significant reduction in expenditure on imports. Spending on imported meat and meat products currently accounts for 10% of this bill. Furthermore, the expansion of the entire commodity value chain has the potential to provide employment for greater numbers of people well beyond the farm gate.

For several years now, FAO has been working with regional governments on dietary guidelines to increase the fight against Chronic Lifestyle Diseases brought on by obesity. Several studies have shown that goat meat contains less total fat and less saturated fat per gram than other types of meat. The promotion of the increased utilization of goat meat as a healthy source of protein would be a boost to demand and could lower the feed corn and poultry imports that are a significant part of the food import bill.

Meat from one indigenous small ruminant breed, the Barbados Blackbelly sheep, is uniquely positioned to be

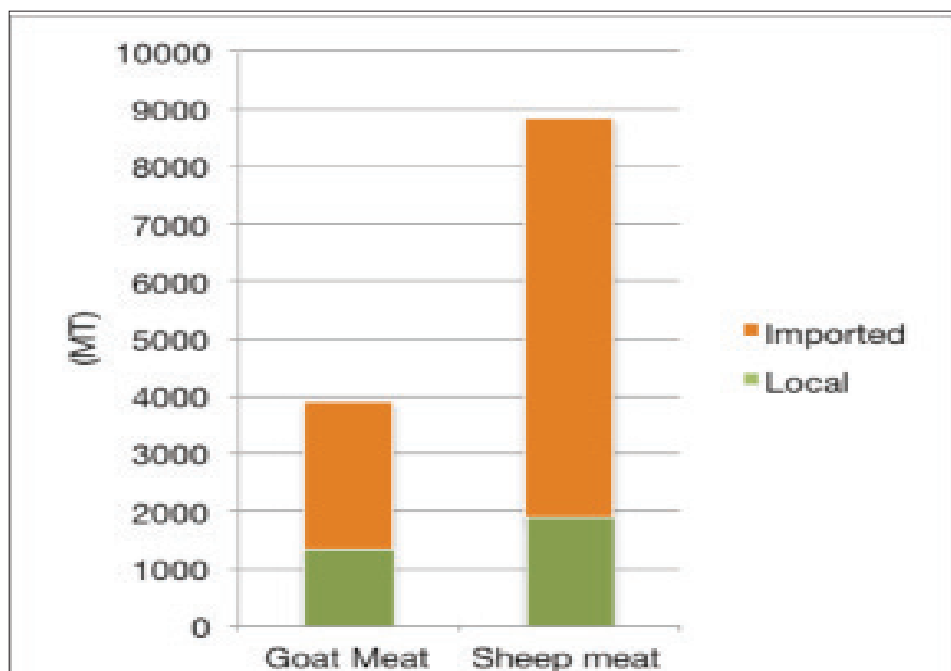


Figure 1 - Consumption of local and imported sheep and goat meat in 2011 - FAOSTAT



Barbados Blackbelly sheep can be positioned as a premium meat product

developed as a premium meat. Low in fat and cholesterol but high in protein, Blackbelly meat is prized for its lean, mild flavour, which has been compared to venison. Like venison, Blackbelly meat can be successfully marketed to restaurants, the tourist sector and can be developed for export as a gourmet product.

The traditional emphasis on meat production is beginning to widen to also embrace the production of milk and cheese at a time when there is growing recognition of the numerous health and nutritional benefits of these goods. Anglo-Nubian goats, already present in many countries, are good milk producers, eliminating the expense of procuring specialized dairy breeds. In a few countries, mainly Barbados, Trinidad and Tobago and Jamaica, a small goat milk industry is already developing with the goat dairies utilizing animals of the Alpine, Saanen and Toggenburg breeds.

Once milk production has been established, there are further value-added products possible, including goat cheese which is in demand as a health food and gourmet food product. Sheep and goat milk soaps are increasingly in the spotlight as a nutrient-rich anti-inflammatory useful in treating acne and skin conditions and could occupy a lucrative niche in the specialty cosmetics market.

Leather goods (shoes, rugs, belts, bags, wallets) marketed both to locals and tourists, are being made from tanned goat and sheep skin. Encouraging further expansion could provide a use for

a valuable, but currently underutilized, by-product of small ruminant farming.

An intra-regional trade in frozen semen and possibly embryos from high-value animals could be explored as an economical means of sharing genetic material among the countries to contribute to industry growth and as an additional income-producing stream for farmers.

The use of sheep and goat manure, both in its pure state and as part of a rich compost, can result in increased soil fertility, improved soil structure and higher humus levels which in turn contribute to higher crop yields. The use of manure is already incorporated into mixed cropping systems but with a single goat capable of producing 1kg of manure per day, a commodity market is primed for expansion.

To capitalize on these opportunities a considerable number of obstacles must first be addressed, namely:

- ▶ Lack of investment in the sector
- ▶ Low-input low-output animal husbandry practices of the majority of livestock owners;
- ▶ Absence of modern breeding methods and programmes leading to a lack of genetic improvement even for local breeds which possess good traits and above average qualities
- ▶ Inadequate technical support from the extension and

livestock divisions of the Ministries of Agriculture

- ▶ Absence of quality market-led products and a relatively weak value chain.
- ▶ Lack of hygienic slaughter facilities
- ▶ Difficulty in accessing adequate land for forages and pastures
- ▶ High cost of supplement feeds
- ▶ Difficulty in intra-regional transportation of animals
- ▶ Loss of animals due to praedial larceny and predation by dogs

In some countries community-based small ruminant organizations have been established to mobilize resources, raise awareness and lead the efforts to build partnerships and cooperation to create a sustainable sector, but these efforts must be bolstered by timely and appropriate regional policy interventions and investment.

FAO's support

FAO's assistance to the development of the small ruminant industry is rooted, not in a sectoral approach, but in an approach that considers it as a business enterprise and a part of a holistic, regional food security policy.

Envisioning linkages with other key crop and commodity development initiatives, the vision for small ruminants is expansive and ambitious. Advising on livestock policy measures will ensure that countries take a long view of the industry's development potential and remove some of the obstacles currently hampering trade in particular. Strengthening of the small ruminant value chain, focusing on management of slaughtering facilities, developing marketing strategies and value added products, will be also key components of FAO's strategy for assistance.

Parallel to this long term planning, FAO continues to provide timely technical assistance to eliminate some of the key constraints to development that have been identified by the farmers

and countries themselves. At present, there are several national and regional programmes being conducted including:

- ▶ a Farmer Field School (FFS) for small ruminant farmers in St Vincent and the Grenadines. This FFS provides hands-on training in animal management and husbandry with a focus on innovation in nutrition and reproduction, integrating traditional knowledge with scientific approaches.
- ▶ a major FAO-funded two-year regional project entitled, 'Technical Assistance to Promote the Strengthening of the Small Ruminant Industry', valued at USD\$500,000. This project is expected to spur at least a 10% increase in small ruminant production by 2017, with a concomitant reduction in the imports of sheep and goat

meats from outside the region. This will be achieved by:

- focusing on the development of economically viable small ruminant farming modules that can generate sustainable income streams for farmers.
 - emphasizing the application of innovative techniques for small ruminant breeding and nutrition.
 - training of extension officers and other stakeholders to better support small ruminant production and marketing activities
- ▶ projects in Grenada and St Lucia providing technical support for the implementation of good management and food safety practices at the newly constructed multi-purpose abattoir/processing plants.

- ▶ addressing the key constraints of the industry through demonstration of best practices in sheep and goat production for uptake by farmers and entrepreneurs on the small ruminant value chain.

Conclusion

The substantial and growing importation of goat and sheep meats can be reversed by the development of a regional small ruminant industry supported by appropriate government policy and led by private sector investments.

FAO will continue to contribute to the development of a small ruminant industry by offering its professional expertise and advice in the areas of innovation and technology to create a balanced system approach that is both economically feasible and sustainable.



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