



Ministry of State for Development of Northern Kenya and Other Arid Lands

Care International Kenya

Expanding Investment Finance in Northern Kenya and Other Arid Lands

Market assessment

Annex 3: Sector profiles

February 2010



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1 Introduction

CARE International and the Ministry of Northern Kenya and Other Arid Lands appointed Reformconsult and Pipal Ltd to support the third phase of: *Expanding Investment Finance in Northern Kenya and Other Arid Lands*. The overall objective of this assignment is to support the development of private sector investment and expansion in Northern Kenya and Other Arid Lands (hereafter ‘project region’) that would tap into the economic potential in Northern Kenya while taking into account the specific social, cultural and environmental conditions in the North.

The third phase of this project aims at further developing the concept for a Northern Kenya Investment Fund based on the findings and discussions held in phase I and II implemented in November and December last year. More specifically, we carried out a market assessment to get a better understanding of the needs of local entrepreneurs and to inform the design of the Northern Kenya Investment Fund.

This report is an Annex to the main report. It provides sector profiles for selected sectors including:

- Gum and resins
- Livestock trading
- Leather
- Tourism

2 Gum and Resins

2.1 References

- Production and Marketing of Gum Resins: Frankincense, Myrrh and Opoponax, Editors: Ben Chikamai and Enrico Casadei, NGARA, FAO Project TCP/RAF/2914, c/o KEFRI, Karura, P.O. Box 30241, 00100, Nairobi, Kenya
- Pipal Limited – project files

2.2 Product description

There are 3 types of shrub land bushes found in Northern Kenya - Acacia Senegal (Gum Arabic), Commiphora Africana (Myrrh), and Boswellia Carteri (Frankincense) in abundance and untapped. Briefly, Gum Arabic is used as a coagulant in soft drinks, wine and beer, an emulsifier in pills and lozenges, as a fixant in paintings and ceramics, in glues, as a starching agent for traditional costumes and in medicines (good for coughs and has antibacterial qualities); the list for this resin is endless and no alternative has been found. Myrrh has anti-microbial properties, boosts the immune system, improves digestion, combats gum disease and candida in women; it is also used in churches as incense. Frankincense is used in aromatherapy essences, cosmetics, soaps and perfumes, is good against joint pain and arthritis. It can also be used as a fumigation agent in wheat silos and repels wheat moths.

The markets and end-uses for the resins fall into three main sectors: fragrance (chiefly for incense use – either in religious ceremonies or around the home – but with some fine fragrance applications); flavour (principally ‘maidi’ for chewing but with some minor uses of the oils as flavouring agents); and pharmaceutical applications. The latter includes both allopathic medicine (where, for example, proprietary preparations of myrrh tincture are used in mouthwashes and gargles for inflammatory disorders of the mouth and pharynx) and traditional Chinese medicines which incorporate Ru Xiang (frankincense) and Mo Yao (myrrh).

Frankincense and myrrh are also used in a variety of skin care products, either as toners and emollients or, in the case of frankincense, as an anti-wrinkle moisturiser. Incense use, in all its forms, is unquestionably the greatest outlet and, in addition to Eritrean-type frankincense being used by the Orthodox and Roman Catholic Churches, China is believed to be using an increasing proportion of its imports for the manufacture of incense sticks rather than (as was previously supposed) traditional medicines. Opoponax use appears now to be minimal.

2.3 Market size

Total world demand is estimated at around 2500 tonnes/year but this figure is subject to uncertainty. China and Europe are the largest markets but the Middle East, North Africa and (to a lesser degree) the US also import significant amounts directly from source. Within Europe Germany is the biggest importer (and re-exporter) of the resins. For these particular types of resins prices appear to be stable. Myrrh, the highest priced resin, reaches US\$3.50-4.00/kg but present prices are significantly lower than they were a

decade ago. Although there are discernible changes in demand for the resins in some sectors of the market (increasing in pharmaceuticals/cosmetics, decreasing in perfumery), and demand for opopanax appears to have declined considerably, overall demand is fairly stable. Importers state that there are no supply problems and, with no new uses on the horizon which might lead to a significant increase in demand for any of the resins, there are no grounds for attempting to increase production.

Demand for the three resins in the major markets (as reflected by direct imports from Ethiopia, Somalia and Kenya alone) is estimated at around 2500 tonnes/year:

Table 1: Demand for resins in Ethiopia, Kenya and Somalia

Origin	Tonnes
Ethiopia	1150
Somalia	720
Kenya	620
Total	2490

2.4 Investment potential

Kenya is only one of the 4 countries that has these resins but yet only seems to tap Gum Resin (an NGO in Isiolo has been harvesting for the past 20 years); and although they produce the resin they barely sustain a profit due to poor marketing

The largest supplier of Gum Arabic is Sudan. With regards to Myrrh and frankincense, it is the 2 countries around Kenya (Somalia and Ethiopia), that have established an effective trade - a trade so lucrative that the resins are flown into Nairobi by traders before being exported abroad. As there are around 4 types of Myrrh resins and 5 types of Frankincense resins - it would remain to be seen what specific advantage Kenya has over its 2 neighbours. At the moment it seems that the carteri and africana are cheaper sources of supply than Somalia.

Kenya appears to have a vast untapped resource in an area that cannot produce much else. The trees cannot be grown in plantations and any other regions but shrub lands; all that is required is training in the tapping, collection and protection of this resource and markets. In short an extremely rare resource that is favourable to the environment and lifestyle of the local people. In contrast to this is the fact that these trees are presently being cut for firewood; an alternative source of income would be better.

Sound development of the commodities will require a good understanding of trade and marketing aspects from production to export at national, regional and international levels. There is need for good information on import statistics in regard to trade volumes, requirements and opportunities thereof, among others, to better organise producer countries respond to the needs. There is also need for importers to have good information on supplies (or potential) including aspects of botanical sources and handling practices to

be assured of reliability of supply and quality.

However, information on gum resins has been hard to come by compared to gum arabic despite the old age tradition in the trade and market of these commodities. Difficulties in the identification of some of the botanical sources, inadequate information on quality in producing countries as well as trade requirements from importing countries have been identified as impediments to sound development of the sub-sector, which otherwise has great potential in the region.

Consistency of quality is an issue with end-users. There has been no systematic analysis of commercial shipments on a scientific basis although myrrh and opoponax are known to be more susceptible to quality variation than frankincense. In part, this is due to the fact that the botanical origin of a particular consignment is not known with any certainty.

Although any natural product is at risk from the threat of synthetic substitutes, the use of frankincense, myrrh and opoponax depends on their characteristic fragrance properties rather than functional properties (as is the case for gum arabic, for example) and this makes it much less easy for them to be substituted. Value-added processing – the production of essential oils and extracts – is something that might be considered by producer countries but any economic gains would be very modest and the capital costs involved in setting up, for example, steam distillation using stainless steel equipment would preferably require the equipment to be shared with other essential oil bearing crops, so as to spread the cost and maximise use.

In view of the current uses and potential industrial, local and socio-economic significance of gum and resin resources, sustainable extraction of the products deserve special attention. Sustainable collection requires some understanding about the physiology, ecology and phenological cycle (flowering, fruiting and seed dispersal season) of gum and resin producing plant species. Understanding the mechanism by which harvesting affects the vegetative growth, reproduction and resin production while sustaining the economic benefits from the resources and resolving marketing constraints are valuable. Unfortunately, owing to the lack of proper forest management practices, the stock of gum and resin producing vegetation, their ecosystem and the benefits expected of them is severely deteriorating in most producing countries, mainly as a result of four major processes of over exploitation:

- Clearing and conversion of woodlands to arable farming;
- Resettlement programs;
- Excessive wood harvesting for fuelwood;
- Improper harvesting/tapping of gums and resins,
- Overgrazing by livestock.

Similarly, there are various other factors hampering the expanded commercialization of gum resin products. Some of the major market constraints in development of the resources and their commercialization are: 1) decline of the gum producing trees as result

of land degradation and drought 2) lack of quality control measures 3) parallel across border trade 4) lack of tree tenure to guarantee incentives to farmers and pastoralist so as to conserve and manage the woodlands 5) lack of enforced legal regulatory measures to control the over exploitation of trees.

3 Livestock trading

3.1 References

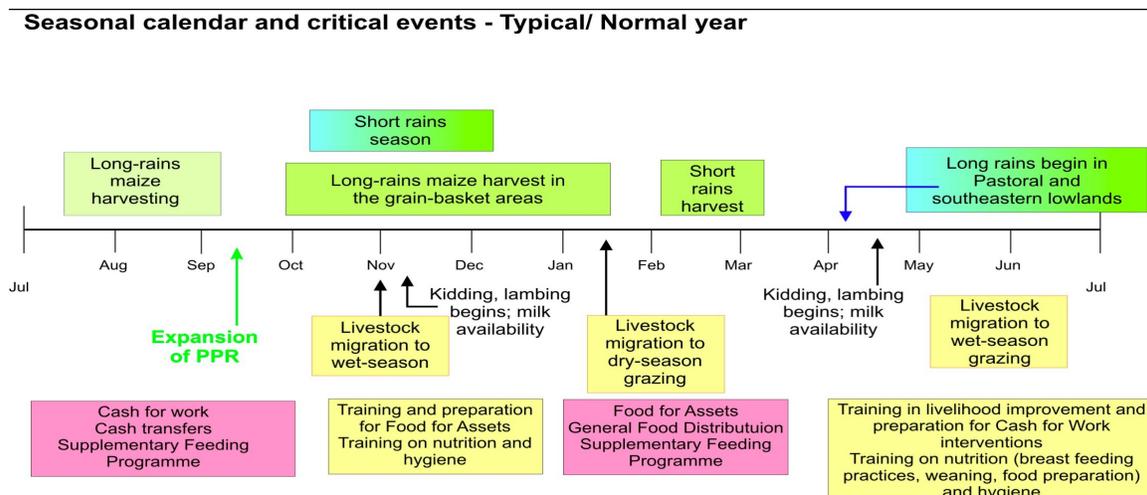
- World Food Programme: Protracted Relief and Recovery Operations, Kenya, June 2009
- Is Pastoralism Still Viable in the Horn of Africa? New Perspectives from Ethiopia, UNOCHA-PCI, May 2006
- Investment Opportunities for Livestock in the North Eastern Province of Kenya: A Synthesis of Existing Knowledge, Regional Strategic Analysis and Knowledge Support System (ReSAKSS), Working Paper No. 12, October 2008
- Risk Taking for a Living: Livestock Trading in Ethiopia's Somali Region, UNOCHA-PCI, April 2007

3.2 Product description

The majority of the population of the NEP practice nomadic pastoralism. They maintain herds of camels, cattle, sheep and goats. Indigenous cattle breeds such as boran and the small East African Zebu are the main breeds kept in the province. Dairy (improved) breeds constitute less than 1% percent of the cattle population. Indigenous breeds are resistant to most diseases e.g. tick borne diseases and others. The Orma boran breed is resistant to Trypanosomosis. The indigenous breeds are also drought tolerant, able to walk long distance and are able to feed on rough pasture. However, their milk production capacity is very low hence they are mainly kept for sale as beef cattle while milk production is mainly for local consumption.

Animals are fed through natural grazing using open grazing livestock management practice, supplementary feeding is uncommon in the province. The population practice seasonal migration to access pasture, settling near to water sources and good pasture for a few weeks before moving on. Distress migration is practised in times of hardship. Because of the prolonged drought many pastoralists have been forced to migrate long distances with herds in search of pasture. The most common livestock reproduction method is through natural breeding. In most cases management of diseases is by natural ways.

Figure 1: Seasonal calender and critical events



3.3 Investment potential

The ecological zone in which the NEP lies is highly suitable for pastoral production. One important advantage of the province is its location near the livestock markets in the Middle East and North Africa (MENA). Furthermore, the NEP serves as a route for livestock movement from Somalia and Ethiopia to Nairobi and other markets that serve as a potential source of income for local people through value addition.

Due to the arid and semi-arid terrain over most of NEP, pastoral/nomadic livestock keeping is the more viable and therefore primary social and economic activity in the area. The numbers of livestock kept in the province are shown below:

Table 2 Livestock numbers in North East Province

District	Cattle		Goats		Sheep		Camels	
	2005	2006	2005	2006	2005	2006	2005	2006
Garissa	265,708	246,565	563,400	535,370	287,480	257,330	101,800	100,168
Ijara	270,529	281,350	126,840	133,182	154,050	163,293	0	0
Mandera	214,178	169,468	358,997	325,023	237,168	172,067	187,192	175,814
Wajir	316,000	251,349	251,000	379,500	335,000	345,507	291,000	345,507
NEP	1,066,415	948,732	1,300,237	1,373,075	1,013,698	938,197	579,992	621,489

Government/ public extension including veterinary service has for a long time been inadequate in the NEP as it is the case in many Arid and Semi Arid areas of Kenya. Reports indicate that despite the fact that more than 75% of Kenya's livestock are in the ASAL areas, they are served by fewer than 10% of livestock service staff. This is mostly because the ASAL areas are considered a hardship post and few veterinary staff want to work there. Due to inadequate or lack of animal health services in ASAL/Pastoral areas,

various private service delivery initiatives, including community-based animal health service delivery systems facilitated by various NGOs, have emerged as an alternative option. Even with a combination of private and public extension providers, extension delivery in the pastoral areas is still challenging because of conditions such as insecurity, poor infrastructure, low cash economy, high cost of service delivery, vastness of the areas, and lack of veterinary personnel among others.

The livestock population in NEP has stagnated over the past 7 years, with significant variations during drought and flood years. Drought is the most severe risk faced by pastoralists in Northern Kenya. Apart from affecting an increasingly larger number of people in the province, droughts have also had a clear effect on livestock production.

There are two types of livestock movements that happen across the porous borders of northern Kenya. The first, involving movement of animals into Ethiopia and Somali in search of water and pasture intensifies during severe drought. This type of migratory movement is as a traditional coping mechanism. The second movement, estimated to represent 25–30% of the animals that are sold in Kenya, involves the trekking of animals destined for terminal markets in Kenya. These animals are subsequently trucked from livestock markets in Northern Kenya for slaughter. The inflows of livestock into Kenya are the result of stronger demand and higher prices in the country. Nairobi prices for live animals and meat are the highest in the Horn of Africa. In addition, the breakdown of the state in Somalia and the bad relations between Eritrea and Ethiopia has made Kenya a more attractive destination for re-export of live animals. With better infrastructure connecting Northern Kenya to the coastline, the country has potential to emerge as a re-export centre.

Livestock is sold from NEP largely as live animals rather than slaughtered carcasses. These live animals are trekked from within the four districts (and some from neighbouring countries such as Somalia to local markets in northern Kenya. The main livestock markets that receive animals from NEP are at Garissa and Isiolo. However, there are many smaller livestock markets in the area. Middlemen buy livestock from these markets and transport them by either trekking or trucking to the terminal markets, mainly in Nairobi and Mombasa. Some animals are also transported to other towns.

After years of such trade, elaborate trekking and trucking routes have been developed for live animals. Significant proportions are kept in intermediate ranches, especially in the Rift Valley and at the Coast for fattening before sale or export.

The sale of milk from both camels and cattle provides greater value to livestock farmers in this region than all the other livestock products and is second only to sale of live animals. This is largely because of the high prices occasioned by milk shortages in the province. However, NEP has no comparative advantage in milk production in comparison to other provinces in Kenya. Milk production is concentrated in the highlands of Kenya and there is very little production in the ASAL areas such as the NEP. This is because the ASAL production systems are mostly conducive for the indigenous cattle breeds whose milk production are much lower than that of the dairy breeds found in the highlands.

3.4 Study on livestock trading

These notes are based on livestock trading study carried out by UNOCHA in the Somali region of Ethiopia but many of the observations are likely to also apply to Northern Kenya.

The findings of the study challenge the current orthodoxy on the workings of a pastoralist-based economy and its contribution to livelihoods and national wealth in a number of ways. The size of the economy is much larger than usually reported. The volume of animals traded and exported via informal trading routes significantly exceeds the volume of animals exported through official channels. The study estimates that informal cross-border exports from northern Somali Region alone exceed by a factor of 3.2 to 6.5 the Ethiopian Customs Authority's statistics for the number of live animals exported from the whole of Ethiopia. The official number of animals exported from Ethiopia in 2003/4 was 41,565, while the study estimates for 2005 that a minimum of 140,000 animals were exported from just two markets. Total estimated turnover in four markets in the region amounted to 450 million Birr or around US\$ 50 million. Yet for each of the many thousands of individual traders and middlemen making this trade possible, income levels are low and profit margins are very small.

The study found that 25–45% of stock sold is exported across national borders to consumers in Saudi Arabia, the Gulf and Kenya. Almost all the remaining animal sales are for breeding or slaughter within Somali Region itself. Very little is moved north to the Ethiopian highlands or to central export abattoirs.

The essential characteristics of the trading system were laid down hundreds of years ago. Livestock and other commodities flow along corridors out of and into the region. Each corridor is dominated by two or three large clans and managed by a particular set of traders, market operators, transporters, guarantors and credit suppliers whose ties are clan-related and whose operations are founded on trust. While most traders are male and middle-aged and their trade is medium-scale and focused on dealing in small stock and food commodities, there is also dynamism in the system. A growing number of relatively young as well as female traders are coming into the business. The trade itself is changing, with new commodities, new forms of transport, communications, finance and banking.

There is oversupply of animals to the markets and relatively inflexible prices. While it is often believed that pastoralists do not like to sell their stock, for all markets for which data exists in the region the number of animals offered for sale systematically exceeds the number of animals sold for all grades of stock. Low to moderate levels of price volatility indicate the strengths of the market, including a rapid response to demand.

Price changes in one market do not appear to have an immediate effect on the prices in others. Traders describe how difficult it is to adjust from one market or market corridor to another, involving increased cost and risk. The trade routes are strongly clan-based and are not quickly interchangeable – a trader cannot easily choose to use a different route than the one he or she normally uses, unless that trader has the contacts and trust arrangements needed to make such a shift. Nevertheless, within these somewhat confined channels the market chains are strong and competitive, offering primary producers value

for their stock.

Low demand, low margins and harassment dominate the list of constraints reported by traders. Multiple taxes, alongside the costs of working without the umbrella of legality, put unrealistic pressure on traders and means that they tend to avoid payment to protect their small profit margins. Traders cling to what might otherwise be considered outmoded and excessively cautious arrangements for transport, finance, insurance and marketing.

Income levels are constantly threatened by costs imposed by bureaucratic bottlenecks. There are various predictable internal costs (capital, transaction and labour costs and taxes), as well as unpredictable costs imposed by border closures, confiscations and insecurity. The trade is also subject to exogenous shocks beyond the control of the affected traders and pastoralists (such as the Saudi Arabian government ban on live imports, fluctuating currency regimes or the sinking of uninsured boats).

Traders and producers must adapt to a fast-globalising world where sources of supply can quickly change along with consumer tastes. New markets need to be found to meet the considerable capacity of pastoralists to supply. To make the trade more efficient, the systems of insurance and finance need to open up and modernise.

4 Leather

4.1 References

- Government of Kenya: Position paper on leather and leather products, June 2001
- Pipal Ltd – project files

4.2 Leather – Industry Overview

Kenya has substantial livestock resources, 13.6 million cattle, 8.05 million goats and 5.9 million sheep and therefore hides and skins are an important renewable locally available resource. The leather and leather products industrial sub-sector has however experienced gradual decline in spite of its having great potential for development. There are 16 tanneries, which were established with a total capital investment of over US \$ 50.5 million (Kshs. 3.8 billion). Prior to the liberalization of the economy all these tanneries operated at an average capacity utilization of 80% and employed over 4,000 people. After liberalisation there are only 8 tanneries operational at an average capacity utilisation of 20%. The footwear and leather e.g new products sub-sector also experienced growth before liberalisation and was dominated by between 55-60% of all leather footwear made in Kenya and employing over 12,000 individuals.

Like many other African countries Kenya has been unable to fully exploit hides and skins as locally renewable resources to achieve productivity gains in the leather sector providing the much needed employment creation and foreign exchange earning. There has been a gradual decline in the performance of the sector throughout the production chain starting with raw materials, leather processing, footwear and leather products and marketing. The Challenges facing hide, skin, leather good and leather footwear industry in Kenya are:

- Declining Production
- Small size of hides and skins; the size of Kenyan hide is recorded to be 20 square feet compared to USA bovine hide, which measures 40 square feet. This variation is due to poor animal husbandry.
- Defects on Hides and Skins

Table 3 Challenges in relation to leather production

Before Slaughter	During Slaughter	During Preservation
Brand, Grain scratches and tears; Smallpox and streptothricosis; other defects caused by Mange, Ticks, and Lice. Cockles and Stephanofilariasis, Reeder, pests, etc.	Bruises, Rubbed or dragged grain, Improper bleeding, pattern or irregular shape, flays cuts, gauge marks, scores, corduroy, fouling with blood, stomach content, and dung (filth stains), improper after cleaning and trimming defects,	Putrefaction, mouldy hide and substance defects, flakiness, mottled effects, peppiness, taint, veininess, lacing, defects, folding defects, lime drying defects, smoking, slat-curing defects, salt

	cracked grains and stretch marks, fallen hide defects, poor substance, old age defects.	stains, gypsum stain, heating, metallic stains, red heat, hard spots, Ground drying defects, hide separation resulting into blister, ball-drying, transport damages, re-soaking and frame drying or re-salting of poorly preserved hides and skins.
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5 Tourism and Conservation

The Northern Rangeland Trust is an organisation in Laikipia consisting of 17 community conservancy. It aims at supporting the development of sustainable community enterprises across the conservancy network. It is mentioned here because it may be used as a model for tourism and conservation enterprise development in other parts of Northern Kenya. NRT recently carried out a high level analysis of the business potential within the NRT region. The areas identified include the following:

- **Tourism:** Viable upmarket tourism businesses now exist in 6 of the 17 conservancies. The most successful is an 8-bed upmarket safari camp which generates a profitable return for the management company plus a further c. \$180,000 per year for the community, who own the camp infrastructure and manage the conservancy. NRT's strategic vision for tourism involves seeking investment to strengthen the existing tourism businesses and to developing the following:
 - Developing a further 4 to 6 upmarket experiences across the NRT region
 - Developing mobile safaris and walking safaris
 - Developing mid-range guesthouse / lodge accommodation for the mid range and resident market
 - Creating a network of community-managed camping areas with basic infrastructure

The total investment required to consolidate and to stimulate ambitious growth of the tourism infrastructure in the next 3 years is estimated at US\$14 million.

- **Art and Crafts:** NRT has invested heavily in supporting the development of a cross-conservancy handicraft trading business (NRT Trading) which operates over 4 of the main conservancies, with ambitions to roll out over 4 further conservancies in the next 2 years. Additionally, several other conservancy-level businesses in this sector have been formally structured and have commenced trading. This is clearly a competitive market with many other art and crafts businesses across Kenya, however the existing business NRT Trading has recorded impressive sales growth over the past 3 years and is capturing an international market among the large zoos, museums and conservation membership organisations. Investment required to stimulate this area is estimated at US\$2 million.
- **Livestock Trading:** A partnership has been developed between Ol Pejeta Conservancy and 11 of the 17 NRT conservancies, which in 2009 traded 5000 head of cattle. This is planned to double in 2010. This area of enterprise holds very large potential across the NRT region and also serves a very important development and conservation objective in terms of stimulating a sustainable

livestock industry with sensible stocking levels. Investment requirement into this sector would be estimated at US\$5 million.

- **Bioenterprise:** This emerging enterprise area is being developed in partnership with the Laikipia Wildlife Forum and the African Wildlife Foundation. Its potential within the NRT region has been assessed by a professional bioenterprise development consultant. Investment requirements for the development of a network of community-level bio-enterprise depots and associated distribution infrastructure is estimated at US\$3 million.
- **Clean Energy and Technology:** The NRT region has strategic plans to stimulate the development of clean energy and other environmentally driven technology. The investment requirement has not been assessed but is estimated at US\$5 million.
- **Ecosystem Services and Carbon Trading;** Although not a carbon-related priority in terms of forest cover, the NRT region does boast some impressive forest cover and some of the largest remaining areas of natural forests with 3 significant forest reserves in the region, in addition to being a very significant brush and grassland region. The potential for involvement in ecosystem services and carbon trading remains relatively unexplored, however investment required to stimulate this enterprise area is estimated at US\$1 million.
- **Other enterprise:** exists also significant potential for the development of supporting infrastructure related enterprise such as transport, food production and technology based service industries. Investment in this respect is estimated at \$1 million.

The total investment requirements as estimated by NRT for their territory are set out in table below.

Table 4 Summary of investment requirements (in USDm)

Opportunity	Amount (USD)
Tourism:	14 m
Arts & Crafts	2 m
Livestock Trading	5 m
Bioenterprise	3 m
Clean Energy & Technology:	5 m
Ecosystem Services & Carbon Trading	1 m
Related support enterprises:	1 m
Total	31 m

Source: NRT, Note 25th February 2010