

Forestry Series 3



Diversifying Commercial Forest Values for Forest Conservation and Improved Livelihoods on the Ssesse Islands

Jacob Manyindo

January 2003

**DIVERSIFYING COMMERCIAL FOREST VALUES
FOR FOREST CONSERVATION AND IMPROVED
LIVELIHOODS ON THE SSESE ISLANDS**

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Acronyms

DFO	District Forest Officer
FAO	Food and Agriculture Organisation
GDP	Growth Domestic Product
INBAR	International Network for Bamboo and Rattan
MFEP	Ministry of Finance & Economic Planning
MFPEd	Ministry of Finance, Planning & Economic Development
NEMA	National Environment Management Authority
UWS	Uganda Wildlife Society
US\$	United States Dollar
UShs	Uganda Shillings
WTO	World Tourism Organisation

A. Introduction

The Ssesse Island Archipelago situated in Lake Victoria consists of 84 islands in the administrative district of Kalangala in southern Uganda. The islands are copiously endowed with tropical high forest resources covering close to 50 percent (220km²) of the total land surface (Appendix I and II). Of the estimated 40,000 hectares of forest cover on the islands, 8,700 hectares are gazetted Central Forest Reserves, 3,400 hectares are forest on public land and 27,900 hectares are forests on private land owned mostly by absentee landlords (Mununuuzi, 2002).

Interestingly, this forest endowment has not always existed on the islands. At the end of the 19th Century, the islands, especially the largest (Bugala Island), were among the densely populated regions of the Kingdom of Buganda. The inhabitants of these islands were generally farmers involved in slash-and-burn agriculture on forested land and livestock rearing on the savannah plains. In 1902, the islands experienced an outbreak of sleeping sickness that required all the inhabitants to be evacuated to the mainland in 1909. By this point, the forest cover on the islands had largely been depleted.

It was not until 1920 that the islands were declared safe for human habitation and that people began to return. However, the population density on the islands continued to remain low in the following decades, which is confirmed by the population censuses carried out since 1921. The sparse population on the islands allowed the forests to regenerate over a period of approximately 70 years.

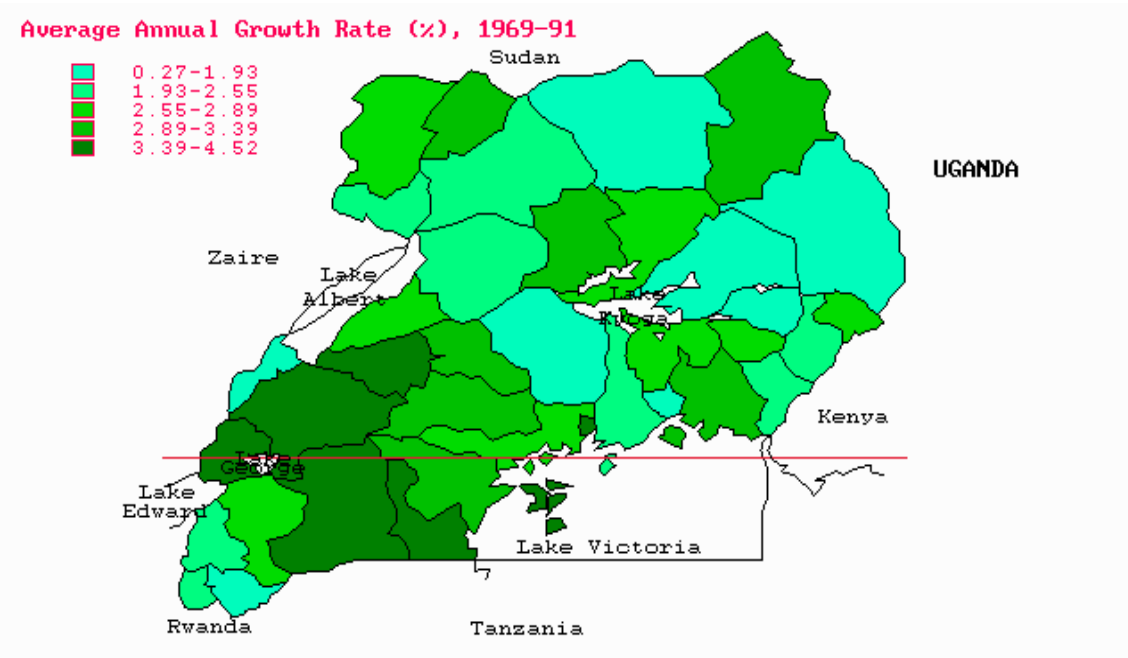
Evidence over the last two decades suggests an influx of immigrants from the mainland that has led to fast population growth on the islands, particularly around the town of Kalangala on Bugala Island. Other immigrant settlements are small fishing villages scattered on the shores of the islands. Between 1980 and 1991, Kalangala District had the highest annual average population growth rates in Uganda of 5%, compared to a national average of 2.1% and an average of 1.8% for the Buganda Region (NEMA, 1998). The recently conducted 2002 population census put the population of Kalangala District at 34,476, an increase of approximately 111% from the 1991 population census (Table 1), which gives the District one of the fastest population growth rates in the country over the last decade.

Table 1: Average Annual Growth Rates for Kalangala District, 1969 – 2002

Year	Total Population	Av. Annual Growth Rate (National Average)
1969	6,803	-
1980	8,575	2.2%
1991	16,371	5.9% (2.5%)
2002	34,476	6.4% (3.3%)

Source: NEMA, 1998 and New Vision, 5th & 9th Oct 2002

Figure 1: Average Annual Population Growth Rate (%) for Uganda, 1969–1991



Source: MFEP, 1991

The fast population growth on the islands over the last two decades has not been without consequences, particularly the unsustainable exploitation of natural resources – especially forest resources. Degradation of forests on the islands has occurred primarily as a result of lumbering, charcoal burning, slash-and-burn agriculture, and fuelwood for household purposes and smoking of fish. These forms of forest degradation embody the *market* and *non-market* values that the residents of the Ssesse Islands place on the forest resources.

Visits to Kalangala District over the last couple of years have revealed that district officials and many residents perceive the current management and conservation approach for the islands' forest estates as being counter productive and an impediment to the district's economic development efforts, such as the Bidco Palm Oil Project. Efforts to diversify the commercial benefits of the forests on the islands in ways that will improve the livelihoods of island residents have, therefore, become more urgent if forest conservation on the islands is to be achieved.

Criticism of forest management and conservation on the islands often doesn't take into account the common difficulties faced by the islands' forest authorities, such as extremely inadequate human and financial resources and poor transportation. These difficulties will have to be addressed as well for forest conservation to take place on the islands.

Therefore, this policy brief will draw attention to current commercial forest values on the Ssesse Islands and provide an indication of the unsustainability of these values in terms of forest conservation and livelihood improvement. It will then present viable policy options for diversifying commercial forest values on the Ssesse Islands and underscore their merits. A detailed evaluation of the ecological and economic benefits of these options, as well as the requisite institutional adjustments they will require, is currently being undertaken and will be the subject of subsequent policy briefs under this series.

B. Current Commercial Forest Values

Presently, timber and fuelwood constitute the major commercial benefits of forests for the residents of the Ssesse Islands. Both these benefits represent *direct use* values in that they serve as inputs to production or as consumption goods. Therefore, timber and fuelwood are commercial in that they have *market* values (timber, charcoal and smoked fish prices) for the benefits they provide to the residents of the islands.

Unfortunately, it is largely as a result of these two commercial uses that the forest resources on the islands are currently being unsustainably exploited.

a. Timber

Commercial timber species on the Ssesse Islands include *Uapaca guineensis* (Mukusu), *Lovoa trichilioides* (Nkoba), *Maesopsis eminii* (Musizi) and *Cordia africana* (Mukebu). The commercial use of these species ranges from the sale of roundwood for local artisanal boat and furniture-making industries to the export of raw timber to the mainland. Commercial forest exploitation occurs in both the islands' protected and unprotected forest estates. Mugoye and Towa are the major productive forest reserves on the islands (Basoga¹, *pers.comm.*). Other forest reserves, such as Nkose, have been virtually depleted of tree cover due to uncontrolled exploitation.

Pitsawing began on the islands in the late 1980s. As stocks of mainland timber gradually declined over the last decade, timber exploitation on the islands gradually increased. Over the last few years, the timber industry on the islands has been ranked as the second most important economic activity after fishing. It employs an estimated 1,500 people (approximately 5% of the population) and has an annual turnover of US\$ 3 billion (Mununuzi², 2002).

Unfortunately, the fell-and-roll method used by pitsawyers has proven to be extremely destructive to both protected and unprotected forests, especially since forest authorities are poorly facilitated to monitor the protected estates and absentee landlords are not there to supervise pitsawing on their land. Pitsawyers

¹ David Basoga is the Assistant District Forest Officer for Kalangala District.

² David Mununuzi is the District Forest Officer for Kalangala District.

typically fell and roll the roundwood over long distances to the lumber beds, thereby destroying young trees and forest undergrowth along the way.

b. Fuelwood

The commercial value of fuelwood on the islands exists in the form of charcoal and firewood for the smoking of fish and brick making. Charcoal may be classified as a consumption item, whereas firewood for fish smoking and brick making serves as an input to production.

The improved ferry transport between Bugala Island and the mainland has stirred increased trade in charcoal from the Island to the mainland. The Government's decision to raise electricity tariffs in 2001 has also increased demand for charcoal on the mainland. Large areas of forest accessible by truck and boat are being cleared for charcoal burning (Mununuzi, 2002). Although the Government now levies a fee of US\$ 40,000 per lorry that carries charcoal from the mainland, this has in no way reduced the trade.

The fish industry ranks as the most important economic activity of the islands. The primary preservative method used by this industry to preserve fish catches is smoking the fish. Smoked fish is both consumed on the islands and exported to the mainland. However, annual fuelwood requirements for this method of preservation amount to an estimated 18,000 m³ (Mununuzi, 2002), which is an additional unsustainable pressure on the islands' forests.

The increased population growth on the islands has resulted in a construction boom as more private houses, schools, health units and commercial buildings are constructed. This has encouraged the brick-making industry on the islands and increased the demand for fuelwood on the islands.

C. Opportunities for Sustainable Expansion of Commercial Forest Values

It is paradoxical that although Kalangala District possesses immense natural resource wealth, especially forests and fish, it is one of the poorest districts in Uganda. Not only are the forest resources being exploited unsustainably, but also the benefits of that exploitation are not easing the poverty on the islands in any real way.

Given that it is generally acknowledged that improving community livelihoods in and around forests is vital for forest conservation and that, already, forest authorities on the islands believe that the current rates of exploitation are unsustainable, developing policy options that allow for forest conservation as well as improved livelihoods on the islands should be a major priority. Although several policy options exist for additional commercial benefits from the forests of the Ssesse Islands, this brief will focus on three that are ready for immediate

development if the central and district governments can make them major policy foci over the next decade.

Ecotourism, agroforestry and small-scale forest enterprises provide opportunities for communities living in and around forests to augment their income while maintaining the islands' vital forest resources.

a. Ecotourism

Ecotourism refers to ecologically responsible visits to natural areas that also improves the socio-economic status of residents in those areas. It is a growing niche within the larger international tourism industry, accounting for approximately 20 percent of the industry's revenue and coupling as an important instrument of sustainable development. Forecasts by the World Tourism Organisation (WTO) suggest that international tourist arrivals will increase from 565 million in 1995 to 1.6 billion in 2020, and that Africa's share of this increase will rise from 3.6 percent to 5 percent over the same period (Table 2). Additionally, international tourist revenues are expected to rise from US\$406 billion to US\$2 trillion over this period.

Table 2: Forecasts for International Tourist Arrivals by Tourist Receiving Region

	Base Year (million)	Forecasts (million)		Average Annual Growth Rate (1995-2020)	Market Share (million)	
		2010	2020		1995	2020
World	565.4	1,006.4	1,561.1	4.1%	100	100
Africa	20.2	47.0	77.3	5.5%	3.6	5.0
Americas	108.9	190.4	282.3	3.9%	19.3	18.1
East Asia & Pacific	81.4	195.2	397.2	6.5%	14.4	25.4
Europe	338.4	527.3	717.0	3.0%	59.8	45.9
Middle East	12.4	35.9	68.5	7.1%	2.2	4.4
South Asia	4.2	10.6	18.8	6.2%	0.7	1.2

Source: World Tourism Organisation, 2000

Uganda currently holds less than 1% of the international tourist arrival market share in Africa (Table 3). Leading sub-regional tourist destinations such as Kenya, Tanzania, Zimbabwe and South Africa are making major investments in ecotourism so as to cash in on the WTO forecasts. Uganda, too, needs to make the requisite policy and infrastructural investments to fully exploit its ecotourism potential.

Table 3: International Tourist Arrivals by African Sub-Regional Destinations

	International Tourist Arrivals (1000)				Market Share in Africa (%)		Average Annual Growth (%)
	1990	1995	1998	1999	1995	1999	1995-1999
<i>Africa</i>	14,980	20,055	24,866	26,469	100	100	4.3
North Africa	8,398	7,305	8,676	9,437	36.4	35.7	6.6
West Africa	1,352	1,913	2,410	2,626	9.5	9.9	8.2
Central Africa	372	358	513	452	1.8	1.7	6.0
East Africa	2,852	4,488	5,536	5,931	22.4	22.4	7.2
Kenya	814	896	857	943	4.5	3.6	1.3
Tanzania	153	285	450	564	1.4	2.1	18.6
Uganda	69	160	100	142	0.8	0.5	-2.9
Southern Africa	2,006	5,991	7,731	8,023	29.9	30.3	7.6
South Africa	1,029	4,684	5,898	6,026	23.4	22.8	6.5
Zimbabwe	605	1,363	1,986	2,103	6.8	7.9	11.5

Source: World Tourism Organisation, 2000

Mountain gorilla tracking in the Bwindi Impenetrable National Park offers perhaps the most prominent precedent of ecotourism in Uganda. Bwindi is a World Heritage Site located in southwestern Uganda at the linkage of the plain and mountain forests. The park covers 32,000 ha and is known for its exceptional biodiversity. Apart from serving as one of three remaining habitats for the endangered mountain gorilla, the forest is home to 120 species of mammals, 346 species of birds, 202 species of butterflies, 163 species of trees, and 100 species of ferns, thus making it one of the richest ecosystems in Africa.

Hundreds of people live off the park and its visitors, working as rangers and staff at camping sites or providing food, crafts and entertainment to the tourists. In the Buhoma valley just outside the park, many local businesses have been established offering goods and services to visitors. Tourist attractions such as Bwindi demonstrate that the multiplier effect of tourism can be substantial.

Another less-recognised ecotourism project in Uganda, but of some import to the Ssesse Islands, is the Budongo Forest Ecotourism Project. The Project, located in Uganda's largest forest reserve (825 km²), was created to serve the dual purpose of conserving the forest and improving the standard of living in communities adjacent to the forest. Some of the project's accomplishments include: the employment of 28 local people, a market for local handicrafts that supplements income for some women, training of local people on income-generating activities such as bee-keeping and vegetable growing, and greater awareness of the value of forest conservation.

Other lesser eco-tourism destinations in Uganda can be found in the following forest reserves: Mabira, Mpanga, Kasyoha Kitomi, and Kalinzu.

With their unique, near-pristine scenery, the Ssesse Islands have the potential to match or surpass the accomplishments of the aforementioned ecotourism

precedents in Uganda, especially since options for ecotourist activities are greater on the islands. Such options include: camping, forest walks, bicycle riding, bird watching, swimming, wind surfing, and sport fishing in one of the worlds largest fresh water lakes. Already, district forest officials have received applications for access to the forest reserves for eco tourism projects and evidence of the growing ecotourism potential on the islands is reflected by the gradual increase of hotels and tourism sites along the lakeshores of Bugala Island.

The economic benefits of ecotourism on the islands could include entry fees, licences and concessions, as well as employment and improved household income from tourist expenditures on lodging, transportation, food, guides and souvenirs. Table 4 shows how Uganda is doing relatively poorly in tourism receipts compared to other regional tourist destinations less-endowed in biological and landscape diversity.

Table 4: International Tourism Receipts by African Sub-Regional Destinations

	International Tourism Receipts (US\$ million)				Market Share in Africa (%)		Average Annual Growth (%)
	1990	1995	1998	1999	1995	1999	1995-1999
<i>Africa</i>	5,298	8,101	9,933	10,295	100	100	6.2
North Africa	2,292	2,732	3,295	3,470	33.7	33.7	6.2
West Africa	575	691	964	1,006	8.5	9.8	9.9
Central Africa	98	91	87	125	1.1	1.2	8.3
East Africa	1,092	1,947	2,331	2,605	24.0	25.3	7.6
Kenya	443	486	290	304	6.0	3.0	-11.1
Mauritius	244	430	503	545	5.3	5.3	6.1
Reunion	-	216	265	270	2.7	2.6	5.7
Tanzania	65	259	570	733	3.2	7.1	29.7
Uganda	10	78	144	149	1.0	1.4	17.6
Southern Africa	1,241	2,640	3,256	3,087	32.6	30.0	4.0

Source: World Tourism Organisation, 2000

Many of the tourists to the other countries in the sub-region are beach tourists. Uganda offers a diversity of tourism attractions that these other countries cannot equal, which it should take full advantage of. For example, the islands' forests, lakeshores and grasslands could be sold as part of an ecotourism package for ecotourists going to or coming from the more popular tourist destinations of southwestern Uganda such as Bwindi Impenetrable National Park, Mgahinga Gorilla National Park and the Queen Elizabeth Protected Area.

However, before Uganda can take advantage of the unique scenery that the Sses Islands offer, major policy and infrastructural investments will have to be undertaken. In this, both the Government and private sector have important roles to perform. In the case of the Government, it should assume its natural leadership roles, which include:

- ✧ Creating a conducive macroeconomic environment for private sector entities to embark on infrastructural investments on the islands. This includes availing grants, loans and incentive schemes, as well as providing clear guidelines for ecotourism businesses and facilitating compliance with environmental regulations. Government should seek the co-operation of key parties in this endeavour and develop a proactive and co-ordinated approach. This could be achieved, to some extent, by the development of management plans for the forest reserves.
- ✧ Ensuring the provision of appropriate infrastructure such as more convenient and safer transport between the mainland and the islands, island roads, water, electricity, and waste disposal.
- ✧ Facilitating small-scale entrepreneurs on the islands that want to cash in on the ecotourist market for goods and services such as souvenirs, guides, food, transportation and cultural exhibits. This should include training in artisanal trades such as carpentry, tailoring and handicraft-making, as well as small business management, among others.

According to Liu (1994), the private sector's role is to provide entrepreneurs that will take advantage of the opportunities that ecotourism will provide. These entrepreneurs will be crucial in choosing and implementing productive investment opportunities. They will be the ones that take the risks in obtaining the necessary loans to establish ecotourism businesses. They need the necessary financing, managerial skills and knowledge of operations so that they can run their businesses profitably.

Commendably, the Government is already in the process of improving transportation between the mainland and the largest of the islands, Bugala. This will go a long way towards making the islands more conveniently accessible. However, more is still required in terms of selling the islands as a tourist destination such as improving their road network, options for accommodation, water, electricity and waste disposal facilities. Generally, Uganda will need to improve its tourism expenditures if it expects to compete favorably with other ecotourist destinations in the region (Table 5). Improvements in tourism expenditure should seek to take advantage of Uganda's superior ecotourism attractions.

Table 5: International Tourism Expenditure by African Sub-Regional Destinations

	International Tourism Expenditure (US\$ million)				Market Share in Africa (%)		Average Annual Growth (%)
	1990	1995	1998	1999	1995	1999	1995–1999
<i>Africa</i>	4,113	5,743	6,297	5,082	100	100	-3.0
North Africa	563	640	688	714	11.1	14.0	2.8
West Africa	1,123	1,388	1,989	803	24.2	15.8	-12.8
Central Africa	714	483	237	243	8.4	4.8	-15.8
East Africa	430	1,092	1,273	1,316	19.0	25.9	4.8
Kenya	38	145	147	115	2.5	2.3	-5.6
Mauritius	94	159	185	187	2.8	3.7	4.1
Tanzania	23	360	493	550	6.3	10.8	11.2
Uganda	8	80	95	141	1.4	2.8	15.2
Southern Africa	1,283	2,140	2,110	2,006	37.3	39.5	-1.6

Source: World Tourism Organisation, 2000

b. Agroforestry

Agroforestry, as defined by the World Agroforestry Centre, is a dynamic, ecologically based, natural resources management system that, through the integration of trees on farms and in the agricultural landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels.

Simultaneous³ agroforestry on the Ssesse Islands would allow for the domestication of market and non-market forest products for the purposes of reducing the pressures on the natural forest estate and improving livelihoods of the majority small-scale, resource-poor farmers on the islands. Pressure on the natural forest estate can be reduced by small-farm forest plantations that provide alternative sources of timber and non-timber forest products. These products increase smallholder farmer incomes by diversifying on-farm produce.

According to the District Environment Officer, soil erosion and nutrient degradation are among the major environmental concerns on the Ssesse Islands. These concerns are primarily a result of forest clearing for cassava and potato cultivation (Bafirawala⁴, 2002). When this cultivation occurs too close to the lakeshore, it results in lake siltation, which is harmful to both the islands' ecology and the livelihoods of fishing communities. Recent research confirms what has been common knowledge for decades, that agroforestry is a sustainable land use that provides valuable on-farm ecological services such as soil

³ *Simultaneous agroforestry* refers to the category of agroforestry systems that allows tree growing and agriculture to take place at the same time on the same piece of land. In contrast, *sequential agroforestry* takes place when trees and crops are grown successively on the same piece of land, with crops usually preceding the trees.

⁴ Maurice Bafirawala is the District Environment Officer for Kalangala District.

conservation by up to 15-20%, while promoting the economic welfare of small farmers (Pattanayak and Mercer, 2002).

The Forest Department has already begun an agroforestry project with small-farmers using Musizi, Lusina, Mukeba, *Eucalyptus* and pine trees. However, the project has yet to achieve the desired outcomes because it is still operating on a limited scale. Poor facilitation of the forest authorities on the islands is also impeding the project's success. Other plants that would be valuable for agroforestry and provide market and non-market benefits for smallholder farmers in the District are bamboo, rattan and palm oil. For example, bamboo, as a woody grass plant is uniquely suited to agroforestry.

Domestication projects in agroforestry should address the short-term needs of farmers by using species that have proven quick yields. Species mentioned above such as *Eucalyptus*, bamboo and rattan would be suitable for domestication on the Ssesse Islands and provide income from the sale of timber and timber-related products, as well as meet farmer requirements for fuelwood, construction material and other household items.

Internationally, bamboo has proven to be remarkably lucrative. It has many new applications as a substitute for fast depleting wood and as an alternative to more expensive materials. For example, according to the International Network for Bamboo and Rattan (INBAR), the paper industry in India uses 2.2 million tonnes of bamboo every year. Exports of furniture made from bamboo earned the Philippines US\$1.2 million in 1994. It is currently being used as a biomass fuel to generate electricity in South America. The construction industry in Asia uses bamboo for bridges, scaffolding, pillars, walls, window frames, rafters, room separators, ceilings and roofs.

Box 1: Uses of Bamboo

Primary Use Functions	Value-Added Products
Intercropping	Timber
Riparian vegetation filter	Craftwood
Constructed wetland	Fibre crop
Living screens	Livestock storage
Permaculture	Bamboo shoots
Soil erosion impediment	Medicines
Road edge stabilisation	Charcoal
Afforestation	Paper

Source: Diver, 2001

According to the District Forest Officer, large tracts of forest cover in areas of the islands that are accessible by truck and boats are being cleared for charcoal burning. Bamboo agroforestry could provide a solution to this loss of natural forest cover on the islands. Bamboo has been used for centuries to make charcoal. Since it produces far more wood per acre than any tree, and because it makes exceptionally good charcoal, encouraging the cultivation of bamboo for charcoal on the islands would help conserve the current forest estate and provide a particularly lucrative export of island residents.

Additionally, worldwide trade in rattan has burgeoned into a multimillion-dollar industry. For example, worldwide trade in raw rattan is in the order of US\$50 million. By the time the finished product reaches the consumer, its value has

increased to US\$1.2 billion. Overall, the global trade is now worth US\$4 billion and domestic trade US\$2.5 million.

Rattan is increasing in popularity because it is easy to work with, requiring only simple tools and low-cost machines. Rattan cane furniture in Uganda already provides an economical alternative to wood furniture because rattan lends itself to uncomplicated labour-intensive processing and thus requires minimal manufacturing costs, while generating diverse employment. Furthermore, rattan could be of very important ecological value to the Ssesse Islands because it grows in degraded forests and in marginal soil. It can also be introduced artificially in natural forests without disturbing the existing structure and balance.

Therefore, with the acquisition of Asian technology (most of it being appropriate for Ugandan small-scale enterprises), the residents of the Ssesse Islands could develop a niche market for bamboo and rattan products in Uganda that will allow for reduced pressures on natural forests, increased employment and improved household incomes.

c. Small Scale Forest Enterprises

Generally, small-scale forest enterprises are those that use forest resources for income generation. Typically, they are small, rural, household-based businesses that use simple technology, require few skills and minimal capital investment.

Small-scale forest enterprises are an important contributor to rural and urban economies in Uganda, both in terms of employment and income. Table 6 generally shows how over the last decade the forest sector contributed approximately 2% to Uganda's growth domestic product (MFPED, 1999), largely on account of small-scale forest enterprises. Forest-based activities in the formal sector have been estimated to employ 100,000 people and the equivalent of 750,000 man-years in the informal sector (Sepp and Falkenberg, 1999). Secondary wood processing (a forestry sub-sector dominated by small-scale enterprises) as well as the distribution and marketing of wood and wood products employs an estimated 250,000 people (Impact Associates, 1997).

Table 6: Sectoral Contribution to GDP

Sector	1989	1995	1998
Agriculture	54.1%	46.5%	42.7%
- Food crops	37.4%	31.8%	28.1%
- Livestock	9.1%	7.4%	7.2%
- Cash crops	3.2%	3.2%	3.5%
- Fishery	2.4%	2.1%	2.1%
- Forestry	2.1%	1.9%	1.8%
Industry & Services	45.9%	53.5%	57.3%

Source: MFPED, 1999

However, as with small-scale industries in other sectors, those that are forest-based are often neglected because they are generally not part of the focus of

Government's development policies. In general, small-scale forest enterprises in Uganda are widely dispersed and cater for the bulk of rural and urban demand for processed forest products such as household and office furniture, construction woodwork and handicrafts. They can employ up to 14 people (Jacovelli & Carvalho, 1999), often as little as one, using simple equipment and processes. In aggregate, these enterprises make up the greater part of the processed forest products industry.

Small-scale enterprises in Uganda, including those that are forest-based, generally operate within a policy environment that is oriented towards large mechanised industries. Thus, small enterprises often face subsidised credit allocation regulations and tax concessions aimed at firms above a particular size (Arnold, 1994). Even where such explicit restrictions do not occur, licensing and other burdensome bureaucratic procedures, as well as lack of entrepreneurial and technical skills, tend to make it difficult for rural populations to embark on small-scale forest enterprises. Therefore, a prevalent policy proposal is that governments establish a neutral policy environment in order to remove inadvertent bias against small-scale enterprises.

There exist several options for small-scale forest enterprises on the Ssesse Islands, both from the vast natural forest estate and from the possibilities available through agroforestry. Island residents can gain commercially from the use of forests for wood for furniture, sculptures and construction timber; canes, reeds and vines for basket, mat, furniture and handicraft production; wood for charcoal production; nuts and seeds for oil processing; fuelwood for fish smoking, beer brewing, and brick-making; and honey production.

Successful small scale forest enterprises generally share the following characteristics (FAO, 1995):

- ✧ *able entrepreneur* – a resourceful and capable manager can overcome many obstacles;
- ✧ *marketable product* – the entrepreneur's ability to continually assess the future of the product's market, such as price trends and competing alternatives;
- ✧ *reliable supply of materials* – processors and traders need a predictable and stable supply for maintaining markets, therefore, forest degradation can threaten an enterprises supply materials and its credibility with traders and consumers;
- ✧ *favourable infrastructure and access to credit* – access to transportation, utilities and credit for capital investment heavily influence an enterprise's chances for success, however, small enterprises can overcome the conditions that favour larger operations by grouping together.

Evidence from Latin America suggests that co-operatives are often established for small-scale forest enterprises for the purposes of promoting common interests, giving technical and economic assistance to members, as well as to serve as a forum to solve joint problems and support the progress of their industries (FAO, 1987). The revival of co-operatives in Uganda offers a fresh opportunity for Government to stimulate the economic potential of small-scale forest enterprises

that will improve livelihoods. The rich forest resources of the Ssesse Islands place them in a unique position to take advantage of such an opportunity.

However, the district and central governments will have to make concerted efforts in skills training and market development for the residents of the islands. Training and market assistance for small-scale forest entrepreneurs will prepare them to eventually take advantage of the bright prospects that ecotourism and agroforestry present to the islands.

D. Conclusion

Diversification of commercial forest values supports forest conservation, increases options for income generation and therefore, improves the livelihoods of forest users and dwellers. However, for this to be achieved a concerted effort on the part of government to bolster the capacity of forest authorities on the Ssesse Islands will have to be made. This should include an increase in human and financial resources, as well as improved transportation and technical training.

The three options presented above for diversification of commercial forest values on the Ssesse Islands are practicable. All they require is a commitment from Government to put in place the necessary policy and infrastructural investments and to implement those that have already been adopted.

Additionally, these three options are mutually supporting in that ecotourism provides a market for agroforestry and small-scale enterprise products, agroforestry provides inputs for small-scale forest enterprises and helps maintain the District's natural forest estate for ecotourism, and small-scale forest enterprises make products for ecotourists and provide a market for agroforestry products. As a whole, these three options will conserve the natural forest estate and improve livelihoods on the Ssesse Islands.

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Appendix II: Forest Reserves on the Ssesse Islands

Name of Forest Reserve	Area (Hectares)
Banga	184
Busowe	1,716
Buturume	181
Buziga	98
Funve	181
Gala	894
Kampala	139
Kamukulu	5
Kijogolo	300
Kubanda	207
Lajabwa	47
Linga	39
Lukalu	231
Lutoboka	403
Luwungulu	23
Makoko	36
Mugoye	945
Mulega	80
Namatembe	241
Towa	1,506
Bufumira	347
Buga	301
Bugana	148
Bukone	139
Bunjazi	80
Kamera	130
Kitemu	60
Nkese	8
Nkose	124
Sekazinga	3
Tonde	65
TOTAL	8,861 (88.61km²)

Source: NEMA, 1998