Tanzania Coastal Management Partnership

SOCIOECONOMIC ASSESSMENT OF TANZANIA'S COASTAL REGIONS

A Background Study prepared for the Tanzania Coastal Management Partnership

BACKGROUND DOCUMENT

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PREFACE

This study reviews socioeconomic conditions and trends in the five coastal regions of mainland Tanzania—Lindi, Tanga, Mtwara, Coast and Dar es Salaam. Regional statistics do not necessarily give an accurate picture of life in coastal communities. Nevertheless, since most information is collected on a regional basis, regional information was used as a starting point for this assessment of socioeconomics and coastal management. The study was prepared as a background report for the Tanzania Coastal Management Partnership (TCMP). It was written by Susan Wagner, University of Dar es Salaam, and Ignace Mchallo, National Environment Management Council (NEMC), with the supervision of James Tobey, University of Rhode Island Coastal Resources Center (CRC).

This is a preliminary, fact-finding study and does not pretend to be a comprehensive treatment of socioeconomic issues. The objective was to become familiar with existing socioeconomic information specific to the coastal regions, to identify key issues, and to help identify selected topics for further and more focused research. The draft is being made available to elicit reviewer comments. Field visits to selected coastal communities to observe, interview and collect baseline information would be an important part of follow-up activities to improve understanding of key socioeconomic issues.

The limitations of data need to be noted from the outset. Data availability, reliability and consistency across different regions are problematic. Socioeconomic data are scattered and often do not exist or are outdated, and then extrapolated into the future. The last population census in Tanzania was in 1988. The capacity of the government to collect and process information is lagging behind the changes taking place in the economy. In particular, the Bureau of Statistics does not have the financial resources to adequately undertake all the data collection activities under its mandate. Data are scattered and inconsistent. Normally, regional authorities produce annual "Socioeconomic Profiles" that contain essential information on the socioeconomic status of the region. However, these reports are not comprehensive, nor is the data they present consistent across regions. Price information is typically missing. An additional problem is that the employment and products of the informal sector—a critical component of Tanzania's coastal regions—are not counted in official statistics.

Information was gathered from primary and secondary sources. Most information was obtained from national government agencies such as the Planning Commission, Dar es Salaam City Commission, Bureau of Statistics, National Environmental Management Council (NEMC) and various libraries and information centers in the capital. Time and resources allowed for only one field trip to Tanga. During the field visit, consultations were held with the Tanga Coastal Zone Conservation Development Programme and various regional authorities. Interviews were also held with the district authorities of Pangani and Muheza.

Seaweed farming and other mariculture activities are not covered in this study. Mariculture, as well as coastal salt and lime production, is addressed in the reports of the TCMP Core Policy Working Group and Mariculture Working Group prepared in parallel with this study.

Section one summarizes population dynamics in the five coastal regions. Section two reviews economic activities including agriculture and livestock, forestry, fishing, mining, tourism, and manufacturing and other industry. Sections three and four briefly note the importance of the informal sector and women's development groups in coastal regions. Section five highlights the links among economic growth and the environment, and emphasizes the importance of maintaining a balance to ensure sustainable growth. Section six surveys the status of health and social services in Tanzania's coastal regions. Section seven assesses transportation and communication infrastructure—a key consideration and constraint to alleviating poverty and inequality in rural Tanzania, and as opportunities for growth in all economic sectors.

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EXECUTIVE SUMMARY

The coastal regions of Tanzania are critical to its future social and economic development. They are rich in natural resources and currently contribute a more than proportionate share of national income (32 percent). There is substantial potential for agriculture, mariculture and fisheries, tourism, small-scale mining, and manufacturing. The country's principal urban area—Dar es Salaam—and 75 percent of the country's industry are located in coastal regions.

One of the challenges for coastal management is to harness the potential of the coastal regions' natural and human resources in a way that is environmentally, socially, and economically sustainable. Promoting sustainable development in coastal regions is important because of the growing human pressures on the resource base.

Promoting and managing balanced growth in coastal regions will mean addressing issues of rural poverty, equity, resource use, and underlying development constraints. This study shows that a large percentage of the coastal population lives at very low levels of welfare. The level of per capita income, health and educational standards, and basic infrastructure is very low, especially in rural areas. Some coastal regions are ranked among the poorest in the nation. This is the context in which national and local coastal management efforts must operate. A conclusion that can be drawn is that sustainable coastal management strategies and activities should maintain a focus on promoting social and economic development.

The main findings of the study are listed below.

1. There is a significant pattern of rural-urban migration, particularly to the city of Dar es Salaam. It is anticipated that over 33 percent of the country's population will live in urban areas by the turn of the century, compared to 18 percent in 1988 (World Bank, 1996). Major reasons are the lack of communication and transportation infrastructure in rural coastal areas, especially in southern regions, lack of livelihood opportunities and social services, and poor performance of agriculture and fishing.

2. In the coastal regions overall, agriculture is the most important sector in terms of employment and income. Most men and women are farmers. The agricultural potential remains to be harnessed as productivity is low. The main constraints relate to the need to access more productive, appropriate technology, including reliable low-cost implements, extension service support, supply of inputs (including fertilizers, fuel and seeds), and provision of rural infrastructure (including transport and water resources). Rural farmers need advice on sound farming practices. Improved rural infrastructure, particularly rural roads and low-cost public transport, is essential to the effective functioning of markets. Other than the Postal Banks, rural financial institutions are lacking.

3. Fishing is the major livelihood activity and source of income for inhabitants of coastal villages. A large percentage of the male population in coastal villages or towns is composed of artisanal fishermen using traditional, labor intensive techniques. Artisanal fisheries contribute more than 96 percent of total marine fish landings. Fish and mollusks are the main source of protein for coastal people. Fishing is also an important activity and source of income not only for the fishermen but also for many others engaged in the processing, frying and trading of fish. Aside from seaweed farming, the potential of mariculture is largely untapped.

4. The demand for forestry products in coastal regions is growing rapidly, especially due to population increases and growing demand of the city of Dar es Salaam. Timber cutting and sale of wood is an important economic activity for villagers. The revenues from timber product licenses are also important source of district revenue. Forests in coastal regions are cut for household cooking; for fuelwood in the production of lime, salt, and charcoal; construction; boat building; crafts; and to clear land for low input, extensive agriculture. Wood and charcoal are the source of energy for most residents of coastal regions in Tanzania in both urban and rural areas. Hardwood species are exploited for woodcarvings and woodwork.

5. In coastal regions, particularly in urban areas, the informal sector is becoming a more significant component of the economy. The number of people in the informal sector has grown as the economic situation has worsened and real wages have declined. The informal sector has an important role to play because it provides income-earning opportunities for large numbers of unskilled and otherwise jobless people.

6. Health, nutrition, sanitation, safe water access, and educational standards are low, especially in rural areas. It is increasingly difficult to finance basic public services from domestic revenues.

7. There is great potential to empower and increase the role of women in the economy and social development of coastal communities. Credit schemes in coastal regions are having an impact on the establishment and strengthening of women’s groups, providing them with credit and technology, improving their marketing skills, and thus helping to improve their income earning potential.

8. Problems with infrastructure, including roads and other transport, port facilities, electrical power, and telecommunications, are fundamental and underlying issues in almost all aspects of development in coastal regions. They have a major impact on economic growth, decisions to migrate, health, education, and sanitation.

Finally, there are a number of complex and multi-dimensional issues that this preliminary study does not address, but that have direct relevance for coastal resource stewardship, and should be priorities for further socioeconomic research. They include:

- How the rural poor make decisions on resource use, strategies for coping with poverty, and the essential factors that determine the prosperity or poverty of a community.

- Gender, inequality, and the quantity and quality of associational life and related norms in coastal communities.

- The impact of the land tenure system on equity, migration, and flexibility and adaptation in the economy. There is currently a shift to a private, market-based economy, yet there is no market-based system for land purchase and sale.

- Assessment of the market and non-market value of coastal resources, resource carrying capacity, and natural resource accounting.

1.0 POPULATION DYNAMICS

Tanzania's coastal zone stretches 800 kilometers from North to South along the Western Indian Ocean. The five coastal regions encompass about 15 percent of the country's land area and are home to approximately 25 percent of the country's population. *Most of the country's major urban areas and industrial activities are located in coastal regions, including Dar es Salaam, the national capital*.

Recent estimates indicate that the population of the five coastal regions has increased to about seven million, with a growth rate of 2-6 percent (Linden and Lundin, 1996). The growth rate for mainland Tanzania overall, according to 1988 census data, is 2.8 percent. Data on population in coastal regions is shown in Table 1.1.

Table 1.1. Population density and annual population growth rate by region

Region	Land Area Km.^{2}	1988			1996		2000	
		Actual Population	Annual Growth Rate %	Population Density per Km.^{2}	Population Estimates	Population Density per Km.^{2}	Population Estimates	Population Density per Km.^{2}
Tanga	27,348	1,280,262	2.1	46.8	1,514,550	55.4	1,647,185	60.2
Dar es Salaam	1,350 (city)	1,360,900	4.7	1,008	1,982,355	1,468	2,392,039	1,772
Coast	32,450	638,000	2.1	19.7	754,714	23.3	820,848	25.3
Lindi	67,000	646,345	2.0	9.6	758,493	11.3	821,665	12.3
Mtwara	16,710	875,977	1.4	52.4	979,792	58.6	1,036,225	62.0
Mainland Tanzania	*883,590	22,486,000	2.8	25.4	*28,131,560 (includes Zanzibar)	31.8	31,465,537	35.6

Source: Regional land area and year 1988 population and growth rate from Bureau of Statistics, 1988 census. Year 1996 and 2000 estimates are extrapolated from 1988 population and growth rates. *World Bank, African Development Indicators, 1997.

Statistics show a *significant rural-urban migration pattern, particularly to the city of Dar es Salaam* (Table 1.2). Major reasons are the lack of communication and transportation infrastructure in coastal regions, especially in southern regions; lack of livelihood opportunities; and poor performance of agriculture and fishing. The failure of the agricultural sector in terms of production of both food and cash crops discourages potential farmers. Availability of arable agricultural land is also an issue. Most of the arable land is owned by "customary law." Especially in Mtwara and Lindi regions, cash crop plantations such as coconut and cashewnuts occupy large expanses of land leaving nowhere for the young to farm. Fishing along the coastline provides little attraction due to the low level of technology and the poor condition of gear. Incomes generated do not meet the economic needs of fishermen throughout the year. *To reduce the tendency of rural-urban migration there is a need to identify actions to increase productivity of current economic activities in rural areas; promote alternative, environmentally sustainable livelihood opportunities; and strengthen infrastructure and social programs in rural areas. Expanding access to farmland by making unused government farms available to small farmers would also help reduce migration.*

Poverty in the Lindi region and lack of infrastructure has led to large-scale migration of youths to urban areas, especially Dar es Salaam. The influx of youths to Dar es Salaam from Lindi and Mtwara has led to the formation of a distinctive social group known as 'Wamachinga.' With little education or money, most of the immigrants depend upon petty trading for survival. Young immigrants from Lindi and Mtwara are so recognized as street merchants that every youth in Dar es Salaam who participates in this activity is called "Machinga," after the name of the immigrants.

Table 1.2. Lifetime migration by region

Region	Lifetime in	Lifetime out	Net Lifetime	Gross Migration

	Migration	Migration	Migration	
Mtwara	46,299	144,988	-98,689	191,287
Lindi	95,200	145,031	-49,831	240,231
Tanga	98,747	150,915	-52,168	249,662
Coast	103,804	207,716	-103,912	311,520
Dar es Salaam	651,246	150,625	500,621	801,871
Total, Mainland Tanzania	3,025,983	3,106,414	-80,431	6,132,397

Source: 1988 Population Census, National Profile. Lifetime migration refers to changes in individuals' regional domicile over their lifetime based on surveys completed for the 1988 Population Census.

2.0 THE CONTRIBUTION OF COASTAL REGIONS TO THE ECONOMY OF TANZANIA

Over the period 1980-1994, the five coastal regions have contributed, on average, about 32 percent of the national GDP (see Table 2.1). The distribution of this contribution across the coastal regions is uneven, with Dar es Salaam and Tanga among the leading regional economies, and Lindi, Mtwara and Coast regions among the smallest. The economy of the Dar es Salaam region dominates the country. The cities of Dar es Salaam, Tanga, Mtwara, and Lindi are the major urban areas in the coastal regions.

Table 2.1. Regional contribution to national GDP

Region	1994 GDP (million Tshs.)	Contribution to GDP 1994 (%)	Contribution to GDP 1980-1994 Average (%)	National Ranking 1980-1994 Average
Dar es Salaam	317,541	19.1	20.3	1
Arusha	145,192	8.7	7.8	2
Mwanza	107,553	6.5	7.7	3
Mbeya	84,903	5.1	6.0	4
Shinyanga	110,353	6.6	5.8	5
Iringa	92,021	5.5	5.5	6
Tanga	92,821	5.6	5.5	7
Morogoro	88,073	5.3	4.7	8
Kagera	80,537	4.9	4.6	9
Kilimanjaro	72,898	4.4	3.7	10
Mara	50,127	3.0	3.5	11
Tabora	55,012	3.3	3.4	12
Ruvuma	49,565	3.0	3.3	13
Mtwara	62,491	3.8	3.3	14
Rukwa	66,160	4.0	3.1	15
Dodoma	57,856	3.5	3.1	16
Singida	51,995	3.1	2.9	17
Kigoma	30,545	1.8	2.5	18
Lindi	29,253	1.8	2.0	19
Coast	17,033	1.0	1.0	20
Total	1,660,000		100.00	

Source: National Account of Tanzania 1976-1994, 11th Edition, August 1995. (Totals are rounded off.)

Some coastal regions are ranked nationally as among the poorest including Tanga, Lindi, Mtwara, and Coast region. (Table 2.2 shows 1994 income per capita for these regions.) Even if economic growth were 8 percent, a child born in Tanzania today would have an average income equivalent of approximately US $440 on reaching the age of 15 years (World Bank, 1996). This underlines both the magnitude of the challenge facing Tanzania and the importance of economic growth to poverty alleviation.

Table 2.2. GDP per capita, 1994

Region	GDP (current price, millions Tshs.)	Per Capital GDP at Current Prices		
		Tshs.	Tshs./US$	US$
Tanga	92,821	60,021	553	108
Mtwara	62,491	59,533	553	108
Lindi	9,253	38,340	553	69
Coast	17,033	22,624	553	41

Source: National Account of Tanzania 1976-1994, 11th Edition, August 1995; Socioeconomic Profile, Tanga region, 1997.

The economy of rural coastal regions depends mainly on small-holder farming and cash crop farming; subsistence forestry and charcoal production; artisanal fishing; lime production; salt production; seaweed mariculture; livestock husbandry; small-scale trade (esp. selling of fish, mangrove poles, coconut, salt, lime and retail goods); and handicrafts. Most families in the coast are involved in more than one economic activity. Common food crops are paddy, cassava, legumes, sorghum, sweet potatoes, millet, bananas, fruits, and vegetables. The major cash crops are cotton, sisal, cashews, and coconuts. In coastal communities, coconut is the most important cash crop in terms of land area in production and number of farms. Coconuts are primarily brought to market and sold in Dar es Salaam for domestic consumption.

For over a decade, the country has pursued a program of reforming restrictive state controls that led to economic stagnation and deterioration of living conditions between the 1970s and early 1980s (World Bank, 1996). For example, controls on agricultural input and output markets and prices were abolished; restrictions on traditional exports and import controls were lifted; taxes were simplified; official exchange rate controls were phased out; and interest rate controls and restrictions on private banking were lifted. Privatization of state-owned enterprise has progressed rapidly since the parastatal reform program was initiated in 1993. Investment policies were liberalized and in 1996 the National Investment Promotion Policy was adopted. A new National Land Policy was adopted by the cabinet in March 1995. These economic and land reforms were accompanied by political and administrative reforms. The country is moving toward a more decentralized government structure—giving district authorities greater fiscal and planning autonomy.

The National Development Plan still acts as an umbrella policy from which regional and district plans draw guidance. The emphasis in national development planning continues to be on achieving sustained increases in national income, with the expectation that this will improve social welfare. Environmentally sustainable development is not well incorporated in national and regional planning.

2.1 Agriculture

Agriculture is the country's most important sector in terms of employment and income. Most men and women are farmers. In 1994 the agricultural GDP was 57 percent of the total GDP for the country. About 84 percent of the labor force are engaged in the agricultural sector. However, agricultural productivity is low. Output levels are below or not much greater than those of the early 1970s for some important crops. For example, total export of cashewnuts was over 100,000 metric tons during 1972-74, compared to less than 60,000 in 1994 and 108,000 metric tons in 1997. The southern coastal regions are the main producers of cashewnuts.

Much of Tanzania's agricultural potential remains to be harnessed. Most of the farming is low intensity, with minimal use of inputs such as fertilizers, fuel and seeds, that would enhance productivity. Maize yield, for example, is about a third of the world average. *Improved agricultural productivity is critical to reducing rural poverty*. The main constraints relate to the need to access more productive technology; durable, low-cost implements; extension service support; supply of inputs, including fertilizers, fuel and seeds; and provision of rural infrastructure, including transport and water resources (World Bank, 1996). Poor farmers need extension assistance on sustainable farm practices. Improved rural infrastructure, particularly rural roads and low-cost public transport, is essential to the effective functioning of markets. Other than the Postal Banks, rural financial institutions are lacking. Because transactions are small and costs high, formal institutions tend to limit their rural activities to market centers.

There is a need to strengthen extension, training, and awareness-building to promote sustainable agricultural practice; develop mechanisms to provide rural credit; make available low-cost, appropriate technologies; demonstrate the feasibility of small irrigation schemes; improve marketing of agricultural products; and test the feasibility of alternative agricultural activities (e.g. high value horticulture and beekeeping).

Table 2.3 summarizes agricultural output for major food crops across the coastal regions for which data was obtained for this study.

Table 2.3. Food crop production, coastal regions, 1991 (tons)

Food Crop	Mtwara	Dar es Salaam	Lindi	Tanga
Cassava	107,000	13,660	130,110	155,007
Sorghum	46,290	28	22,480	2,406
Maize	28,830	509	27,100	126,096
Paddy	11,180	2,410	14,850	4,334
Total	193,300	16,607	194,540	287,843

Source: see tables below.

Mtwara region. Agriculture is the predominant economic sector, with about 90 percent of agricultural output from individual, small-holder farmers. The main food crops are cassava, sorghum, millet, and increasingly maize, and paddy. The local population generally prefers paddy and maize, but regional authorities emphasize cassava and sorghum due to their resistance to drought. Cash crops include cashewnuts, sesame, groundnuts and coconuts. *Area under cultivation is about 270,300 ha., or only about 55 percent of total arable land area in the region* (599,500 ha.). *Regional production of food crops is low, and in some years the region is a net importer of food*. Small irrigation schemes would improve production. Table 2.4 shows trends in food and cash crop production between 1990-1997.

Table 2.4. Food and cash crop production, Mtwara region (tons)

Food Crops	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Cassava	107,000	101,410	129,415	177,310	230,140	332,704	404,463
Sorghum	46,290	11,610	90,203	14,000	27,040	52,091	63,823
Maize	28,830	19,650	74,671	15,120	58,130	90,343	106,444
Paddy	11,180	15,300	43,592	17,440	33,620	53,612	24,716
Cow/pigeon peas	220,380	65,880	22,750	34,000	21,210	17,260	30,252
Cash Crops							
Cashewnuts	15,209	21,286	17,943	21,834	27,463	49,106	--
Groundnuts	6,150	21,790	41,220	13,010	12,040	27,771	--
Sesame	4,020	2,940	7,380	1,860	3,920	10,965	--
Other (Soya and Sunflower)	5,270	230	1,948	-	170	95	--

Source: Regional Agricultural Development Office, Mtwara, 1997.

Cashewnuts are produced primarily for export and are an important source of foreign exchange earnings for the country. In 1994, cashewnut exports accounted for 5.8 percent of total national exports (World Bank, 1996). Mtwara is the main producer—about 50 percent of national production comes from the region (see Table 2.5). Within the region over 50 percent of the cashewnut harvest comes from Newala district, while the Masasi and Mtwara districts contribute 29 and 19 percent respectively.

Table 2.5. Cashewnut production by major producing regions (tons)

Region	1991/92	1992/93	1993/94	1994/95	1995/96	Total	As % of Total
Lindi	5,913	7,435	5,944	9,063	11,585	39,940	14.7
Mtwara	22,125	17,943	21,834	27,536	49,107	138,545	51.
Coast	4,163	2,333	7,468	12,200	6,855	33,019	12.1
Tanga	2,246	2,122	2,148	500	978	7,994	3.
Ruvuma	2,854	5,165	4,981	6,640	7,997	27,637	10.2
Dar es Salaam	3,840	4,131	3,576	5,864	1,591	19,002	7.
Others	97	194	652	1,000	3,613	5,556	2.
Total	41,238	39,323	46,603	62,803	81,726	271,693	100

Source: Ministry of Agriculture, 1997.

Dar es Salaam region. The land area of the city of Dar es Salaam is 1,350 sq. km. About 430 sq. km. is reserved for urban development and 900 sq. km. are suitable for agriculture. Agricultural land use is summarized in Table 2.6.

Table 2.6. Agricultural production, Dar es Salaam region

Food Crop	Hectares	Tons
Cassava	5,464	13,660
Paddy	4,414	2,410
Sweet potatoes	3,242	4,084
Sorghum	48	28
Beans	170	42
Maize	2,033	509
Bananas	3,795	45,540
Cash Crop		
Cashewnut	3,836	11,138
Coconut	6,385	6,000
Oranges	1,694	5,082
Pineapples	774	1,548
Sesame	560	1,792
Cotton	177	56

Source: Regional Agricultural Office, Dar es Salaam 1992.

Coast region. The Coast region's economy is mainly agricultural. More than 90 percent of the population is employed in agriculture and it contributes more than 80 percent of regional income (see Table 2.7).

Table 2.7. Contribution of agriculture to total income, Coast region, 1991 and 1996

Year	Agriculture		Other Sectors		Total Regional Income (Tshs.)
	Income (Tshs.)	Percent of Regional Income	Income (Tshs.)	Percent of Regional Income	
1991	4,912,600,000	84.7	887,400,000	15.3	5,800,000,000
1996	17,310,400,000	83.3	3,462,088,000	16.7	20,772,488,000

Source: Coast region, Socioeconomic Profile, 1997.

Agriculture is dominated by individual, small-holder farms relying on family labor and traditional farming methods. *Only 18.6 percent of the total arable land in the region is farmed suggesting that the potential to increase regional agricultural output is large.* The main food crops are paddy, maize, cassava, millet and sorghum. In 1995, paddy production was 52,562 tons on 15,000 ha. of land for an average of 3,504 tons per ha. Export of perishable food crops outside the region (e.g. fruits like oranges, pineapples and mangos) is constrained by poor transportation infrastructure, although there is an abundant supply. The major cash crops in the region are cashewnuts, cotton, coconuts, sesame, vegetables and fruits.

Lindi region. Individual, small-holder farms using traditional techniques are also predominant in the Lindi region—producing about 90 percent of agricultural output. *Yields are low and output growth is not keeping pace with population growth* (estimated at 2.0 percent, Population Census 1988). Because of variability of rainfall and low yield, the region is persistently hit by food scarcity. Poor transportation infrastructure is also a problem. The major food crops are maize, sorghum, cassava and paddy (see Table 2.8 and 2.9). Cassava is the biggest single food crop grown in Lindi, accounting for about 33 percent of land under cultivation. In 1997, 49,100 ha. out of 150,500 ha. of cultivated land were planted with cassava for a total yield of 88,400 tons.

Table 2.8. Hectares of major food crops under production, Lindi region

Crop	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
Maize	25,000	53,300	60,000	30,400	63,000	62,300	62,300
Sorghum	26,000	28,800	29,300	28,700	28,300	27,400	27,400
Paddy	14,300	10,800	1,600	12,800	12,200	11,700	11,700
Cassava	50,000	46,300	53,900	50,800	51,700	49,100	49,100

Source: Basic Data, Agriculture and Livestock Sector, Ministry of Agriculture, September 1998.

Table 2.9. Production of major food crops, Lindi region (tons)

Crop	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
Maize	27,100	52,800	54,000	26,800	56,700	56,700	56,100
Sorghum	22,480	35,800	12,200	33,600	25,800	21,300	22,000
Paddy	14,850	10,800	1,600	12,300	14,700	14,000	14,000
Cassava	130,110	120,400	140,200	92,400	93,300	88,500	88,400

Source: Basic Data, Agriculture and Livestock Sector, Ministry of Agriculture, September 1998.

The region's important cash crops are cashewnuts and simsim. *The region is the biggest simsim producer in the country, contributing about three-quarters of total production* (see Table 2.10). Lindi is also the second largest producer of cashewnuts in the country. In the 1995/96 crop year the region harvested 39,940 tons, second only to Mtwara whose output was 138,545 tons.

Table 2.10. Simsim production in major producing regions (tons)

Region	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	Total	%
Lindi	1,459	3,437	3,778	4,000	561	479	13,714	72.0
Mtwara	226	747	804	600	253	1	2,631	13.8
Morogoro	78	245	212	260	108	-	903	4.7
Coast	73	-	83	155	26	37	374	2.0
Others	23	350	361	518	177	2	1,431	7.5
Total	1,859	4,779	5,238	5,533	1,125	519	19,053	100.0

Source: Basic Data, Agriculture and Livestock Sector, Ministry of Agriculture, May 1993.

Tanga region. Subsistence agriculture, livestock, and cash crop production are important economic activities in the Tanga region. Primary food crops are maize, cassava, banana, beans and paddy (see Table 2.11). Cash crops include sisal, cotton, coffee, tea, cardamom, coconuts, tobacco and cashewnuts. These crops are grown by both small-holder and large-scale farmers (both public and private). In the sixties, especially in the era of the sisal boom, the economy of the Tanga region was reasonably strong. However, the decline of this industry is one of the causes of economic decline. Sisal production in Tanzania in 1994 was less than one-third what it was in 1980.

Table 2.11. Production of food and cash crops, Tanga region (tons)

Food Crop	1987/88	1990/91	1992/93	1993/94	1994/95	1995/96
Maize	95,647	126,096	107,464	128,571	147,636	146,339
Paddy	6,894	4,334	33,863	8,674	9,490	12,288
Beans	6,707	19,679	39,542	2,554	42,470	22,127
Sweet Potatoes	2,028	3,120	4,646	4,417	5,124	4,894
Irish Potatoes	9,248	23,604	27,435	26,761	30,247	25,786
Cassava	122,924	155,007	166,176	164,254	156,790	150,890
Sorghum	6,634	2,406	3,178	2,987	3,896	4,866
Banana	61,085	113,616	124,514	115,896	135,182	128,676
Cash Crop						
Cotton	972	327	838	1,342	924	3,114
Tea	1761	2,325	3,872	3,901	3,901	3,905
Coffee	3154	2,311	3,085	3,170	3,170	3,,446
Cashewnuts	3730	4,323	3,848	3,310	3,310	5100
Tobacco	7.5	2.0	3.4	2.8	2.6	4.6
Cardamom	1,406	1,487	1,501	1,497	1,676	1,597
Sisal	24,800	26,153	27,230	27,230	20,231	28,476
Coconuts	38,141	40,761	45,761	44,107	46,154	47,497

Source: Socioeconomic Profile, Tanga region, 1997.

2.2 Livestock

Relative to the rest of the country, the livestock sector is small in all coastal regions, except Tanga (see Table 2.12). Although the data of Table 2.12 is dated, it is presented to illustrate the relative size of the livestock sector across the regions.

Table 2.12. Livestock population by region

Region	Cattle	Goats	Sheep
Arusha	1,855,880	1,231,014	758,476
Coast	57,542	18,682	4,938
Dar es Salaam	6,158	9,524	1,449
Dodoma	1,001,840	539,648	169,779
Iringa	480,410	197,110	91,635
Kagera	364,795	344,262	53,784
Kigoma	62,319	167,348	36,428
Kilimanjaro	408,457	438,087	221,059
Lindi	6,217	13,205	8,582
Mara	969,766	394,444	215,558
Mbeya	901,077	171,486	101,365
Morogoro	332,683	139,948	53,274
Mtwara	15,046	84,864	14,519
Mwanza	1,357,535	570,142	249,943
Rukwa	392,234	75,319	21,115
Ruvuma	39,010	138,435	19,716
Shinyanga	1,882,081	871,826	486,798
Singida	939,821	476,532	280,349
Tabora	925,904	309,836	174,540
Tanga	472,909	258,284	116,840
Total	12,471,684	6,449,996	3,080,147

Source: Basic Data Agriculture and Livestock Sector, Ministry of Agriculture, various years 1983/84-1987/88.

2.3 Forestry

Coastal forests cover an area of 320 km.^{2} of which 39 km.^{2} carries a conservation status (Mwandosya et al., 1997). The most significant include the Mchungu forest in the Coast region which contains unique gum copal forest habitat; Pugu forest which contains the second largest deposit of kaolin in the world; Kazimzumbwe forest; Gendagenda forest in Pangani in the Tanga region; Kiwengono forest in Rufiji; Rondo and Chitoa forests in Lindi; and Mlola forest in Mafia. These forests contain unique indigenous hardwood species such as teak and ebony. Other forests include mangroves along deltas, creeks, and estuaries and on coastal shores.

Forest timber is used for many purposes. *A major use is for firewood and the production of charcoal. Wood and charcoal are the source of energy for most residents of coastal regions in Tanzania in both urban and rural areas*. The demand for timber for house construction is another source of pressure on forests. In rural areas, mud and wood houses are built at least twice during a lifetime. Demand for firewood, charcoal and wood for construction is tremendous in the rapidly growing city of Dar es Salaam. Table 2.13 shows indicators of forest product imports into the city. The southern coastal regions in Tanzania are famous for carvings, carpentry and other woodwork. Hardwoods, such as teak and ebony are used for this purpose. *The high international and domestic demand for hardwoods and fuelwood suggests that renewable forestry (e.g. farming fuelwood or hardwood trees as a cash crop through village plantations, small-holder tree farming or farm forestry) may be feasible in the coastal regions.*

Table 2.13. Forest product imports, Dar es Salaam, 1991

Products	Amount	Value (Mill. Tshs.)
Charcoal (Bags)	1,288,268	1,031
Firewood (m3)	107,203	306
Building Poles (pieces)	128,721	26
Timber (pieces)	549,716	--
Timber (cu. ft.)	756,986	--

Source: Dar es Salaam Environmental Profile, Dar es Salaam City Commission, 1991.

In all regions, forests are cut to clear land for low input, extensive agriculture. In some locations wood is used in the production of lime and in the production of salt by boiling. In coastal communities, wood is used in the preservation of fish. Salt production by boiling is very fuel intensive and occurs mostly in the coastal area around Tanga and Pangani, in the area south of the Rufiji, and in the Rufiji Delta itself. The boiling method produces fine salt crystals needed to preserve sun-dried fish, whereas the solar evaporation method produces big crystals which have to be ground first, resulting in further processing and transport costs. Burning coral for the production of lime is an activity carried out mainly by people who live in coastal areas. It provides a building material that is less costly than the cement produced by industry. The production process is extremely fuel intensive. *So far, license fees for salt production by boiling, and the manufacture of lime have not reflected environmental costs of forest degradation and loss.* Finally, there is illegal trade in hardwood forest products. Export is primarily to the Near East and Iran, via Mafia and Zanzibar. Illegal trade of forest products by people outside local villages is the most significant source of mangrove deforestation in some areas.

All of these human activities exert enormous pressure on the country's forests in coastal regions and the extent of forest cover. There are no reliable, scientific estimates of losses in forest cover. However, *fuelwood extraction and land clearing for agriculture are clearly the greatest causes of deforestation*. In some specific coastal locations, as in villages of Mtwara, woodcutting for lime production is the most serious pressure on forest cover. The socioeconomic impacts of forest loss on the poor who depend on forests for firewood and building material are significant and can even lead to resettling.

A license fee is charged on forest products based on the quantity of the product brought to market (such as bags of charcoal, firewood, building poles, or timber). Checkpoints along roads allow authorities to monitor compliance with the quantity of wood products that the license permits. Penalties for noncompliance can be severe (financial penalties and jail). *Local government revenues for license fees are significant in some regions. Forest product* *revenues were about 11, 5, 24, and 19 percent of total government revenues in the coast region for the four fiscal years from 1992/93 to 1995/96, respectively.* In a time of government and fiscal decentralization, there is an incentive for local governments to encourage forest product trade and increase enforcement of the licensing system to generate much needed local revenues.

Timber harvest data and total revenues for Mtwara, Dar es Salaam and Coast region are shown in Tables 2.14, 2.15, and 2.16. Comparison of Table 2.13 with 2.15 shows the very large excess demand for forest products over the locally available supply in the Dar es Salaam region. Table 2.16 shows that forest product revenues have rapidly increased over the last 11 years in the Coast region. This probably reflects increased demand for the products due to population growth, particularly in the adjacent city of Dar es Salaam, and increased license fees.

Table 2.14. Forest product revenues, Mtwara region

Year	Timber Volume Cubic Meters	Value Tshs.
1992/93	486	3,266,752
1993/94	326	1,238,637
1994/95	406	3,684,143
1995/96	416	7,420,019
1996/97	180	7,170,895
Total	1,814	22,780,446

Source: Mtwara Regional Forest Office, 1997.

Table 2.15. Forest product revenues, Dar es Salaam region, 1991

Products	Amount	Value (Mill. Tshs.)
Charcoal (bags)	7,324	6.0
Firewood (m3)	1,405	4.0
Building Poles (pieces)	1,440	0.3

Source: Forestry Department, Dar es Salaam City Commission, 1991.

Table 2.16. Forest product revenues, Coast region (Tshs.)

Year	Round Wood	Charcoal	Firewood	Building Poles	Total Revenue
1985/86	550,418	3,359,946	1,412,242	158,348	5,480,954
1986/87	876,828	6,279,285	129,334	1,119,249	8,404,696
1987/88	1,048,450	4,092,294	92,918	1,774,949	7,008,611
1988/89	1,428,578	4,411,690	57,815	183,145	6,081,228
1989/90	3,060,305	4,252,170	143,818	240,125	7,696,418
1990/91	10,209,417	8,185,980	173,004	479,790	19,048,191
1991/92	7,596,688	16,421,940	1,998,700	874,600	26,891,928
1992/93	12,728,667	23,571,750	583,300	2,964,358	39,848,075
1993/94	11,787,213	16,271,440	55,200	1,316,350	29,430,203
1994/95	14,740,700	29,977,700	1,066,500	805,840	46,590,740
1995/96	26,939,020	41,248,300	2,141,700	4,097,060	74,426,080

Source: Regional Forestry Division, Kibaha, 1997.

2.4 Fisheries

Fishing is the major livelihood and source of income for inhabitants of coastal villages. A large percentage of the male population in coastal villages or towns are fishermen. Mollusks (which are collected by women and children) and fish are the main source of protein for coastal people. Fish are also an important source of income not only for the fishermen, but also for many others engaged in the processing, frying and trading of fish.

With the exception of a few urban and overseas-based companies, most of the catch in coastal regions is from the artisanal fishery using traditional techniques—hooks and lines, traps, seining and digging—to catch inshore pelagics such as herrings, sardines, king fish, mackerel, fin fish, anchovies, shrimp, and shellfish (such as oysters and mussels). Artisanal fisheries contribute to more than 96 percent of total marine fish landings. There are three main types of artisanal fisheries vessels: ngalawa (sailing outrigger canoe), hori and mitumbwi (dugout canoes), and mashua (dhow). The bulk of artisanal fishing is concentrated in the area between the shoreline, the outer edge of the fringing reef, and on the shallow shelf of Mafia and Zanzibar channel. Fresh water fishing is carried out in large coastal rivers with small boats (2 to 8 meters in length). Dynamite fishing is common along the coast although it is prohibited by the government.

Domestic commercial fishing practices are largely carried out using trawlers and longliners. Offshore fishing is very limited. The most important variety of fish often caught by offshore commercial fishermen are pelagics such as tuna and swordfish. There is also a growing number of foreign commercial vessels that are operating illegally inside the exclusive zone.

Table 2.17 shows that the inland freshwater fishery is over four times as large as the marine fishery in terms of number of fishers, vessels and quantity of catch. The difference between the two fisheries in terms of value, however, is not as great. In 1994 and 1995, the estimated value of the marine fishery catch was 46 and 55 percent, respectively, of the value of the freshwater fishery catch.

Table 2.17. Marine and freshwater fishery resources

Marine waters	**1992**	**1993**	**1994**	**1995**
Fishers	15,027	15,027	15,027	13,822
Vessels	3,514	3,232	3,232	3,768
Metric Tons (1,000)	43.9	36.7	40.8	48.8
Value (million Tshs.)	6,167	10,207	14,228	24,662
Freshwater				
Fishers	46,470	46,916	46,639	61,694
Vessels	16,441	17,744	16,129	18,696
Metric Tons (1,000)	291.6	294.8	228.0	197.6
Value (million Tshs.)	19,947	31,239	30,949	44,730

Source: Fisheries Division, Ministry of Natural Resources and Tourism.

Table 2.18 shows fisheries resources by region for 1993.

Table 2.18. Marine fishery resources by region, 1993

Region	**Fishers**	**Vessels**	**Outboard Engines**	**Metric Tons**	**Production (% of total)**	**Value (million Tshs.)**	**Contribution to GDP (%)**
Lindi	1,207	599	1	3,271	9.6	616	2.1
Coast	4,551	996	52	8,609	25.1	1,482	8.7
Dar es Salaam	3,276	577	116	14,867	43.4	5,555	1.8
Mtwara	1,508	362	1	2,624	7.7	574	0.9
Tanga	4,485	698	72	4,856	14.2	1,171	1.3

Source: Annual Statistics Report, Fisheries Division, Ministry of Natural Resources and Tourism, 1993.

The 1997 Socioeconomic Profile of the Tanga region indicates that there are 2,213 fishers and 787 vessels, representing a decline in the number of fishers but increase in number of vessels when compared with the table above from 1993. The artisanal fishery contributes just over 1 percent of the region's GDP.

Fishing in the Mtwara and Lindi regions is limited to the artisanal fishery. The marine resources in the two regions are generally underfished. The fishing industry in Mtwara and Lindi regions contributes approximately 1 and 2 percent of regional GDP, respectively. In specific locations in Mtwara region, dynamite fishing has impacted fish abundance and catch. *Sustainable development of the fishery sector offers an opportunity to increase employment and could encourage young people to remain in the southern coastal regions rather than migrate to cities*.

The artisanal fisheries account for about 8 percent of GDP in the Coast region. It is a primary economic activity and source of food for coastal communities. One of the most important artisanal fish species in the Coast region, particularly the Rufiji district, is prawn. *About 80 percent of the commercial prawn catch of Tanzania takes place in the Rufiji Delta*, and about 40 percent of the catch comes from small-scale fishermen. The foreign market for prawns is large and the opportunity to increase harvest of this species has not been realized. *The lack of reliable transport and cooling facilities are the biggest obstacles to further development of the prawn fishery*. Large mangrove crabs are also an under-exploited resource with great market potential in both the domestic tourism market and abroad, if transportation and marketing constraints could be overcome.

In summary, the main constraints to improved performance of the marine fisheries sector appear to be the lack of transportation and infrastructure to market products; lack of rural credit to finance growth; and the need for extension services to build awareness and demonstrate low-cost, appropriate technologies.

2.5 Mining

Officially, mining accounts for less than 2 percent of national GDP, but the actual potential for expansion is considered to be enormous (World Bank, 1996). Small-scale mining is growing, but large-scale mining performance has been limited by inadequate management, poor physical infrastructure; and poor technology for exploring, extracting and processing mineral resources. Small-scale mining offers an opportunity to increase income in coastal regions. *Extension services and technical assistance should be provided to promote the activity in a way that is environmentally sustainable*.

Tanga region. Mining is only small scale, although there is great potential for increasing scale in production. Mineral deposits in the region are shown by districts in table 2.19.

Table 2.19. Mineral deposits by district, Tanga region

District	Minerals
Tanga	Limestone
Handeni	Amethyst Gamets (Gemstone) Gemstone Tourmaline
Lushoto	Kyanite Gypsum Feldspar
Korogwe	Kornerupine (Semi-precious gemstone) Gemstone Zircon Bauxite Amethyst Ruby
Muheza	Turquoise Tourmaline (Gemstone)

Source: Socioeconomic Profile, Tanga region, 1997.

Coast region. The most important mineral deposits are sodium chloride (common salt), calcite, gemstones and koelin (clay). Salt is produced by solar evaporation along the shore of Bagamoyo, Mkuranga, Rufiji and Mafia districts. There are several large producers, both private (e.g. The Stanley and Sons Salt Company, Bagamoyo) and public (e.g. Coastal Salt Company, Bagamoyo), but there are also many small producers.

Calcite (in various colors such as white, black, pink and red) is mined in Miono, Mkange and Mandera in Bagamoyo district. The mineral, which is commonly known as "terrazo," is used for marbles, chicken feed, and in glass making. It is extracted by small-scale miners for sale mainly in Dar es Salaam. Gemstones are mined in Mkange, Mbwewe and Miono in Bagamoyo district. High quality Kaolin (clay) deposits are found in the Pugu hills in Kisarawe district. The Pugu Kaolin Company holds a mining license for the mine and has a factory for processing the raw product.

Mtwara region. Known mineral deposits are shown in Table 2.20. As of 1996, 21 gemstone dealers were licensed to mine in the region, but only 50 percent had extracted and marketed minerals for a total value of Tshs. 113.2 million (Mtwara, Socioeconomic Profile, 1997). The lack of reliable data on deposits has slowed development of this sector.

Table 2.20. Mineral deposits, Mtwara region

District	Minerals
Newala	Rhodolite, Sapphire, Amethyst and Red Garnets
Tandahimba	Sapphire, Tourmaline, Red Garnets, Graphite
Masasi	Red Garnets, Sapphire, Marble, Chrysoberyl, Alexandrite, Tourmaline and Rhodolite

Source: Southern Geological Zone Office, Mtwara, 1997.

Lindi region. Minerals with potential for exploitation are gold in Nachingwea and common salt along the coastline.

2.6 Tourism

Coastal tourism is growing, although much of its potential is under developed. The majority of hotels are located in and near the city of Dar es Salaam (at least 57 hotels). The number of hotel facilities is growing in the coastal regions of Tanga (at least 15 hotels) and Coast. There are few or no hotel facilities for foreign tourists in the Mtwara and Lindi regions. National data on numbers and types of hotels, rooms, and beds is not available.

Tourism offers the potential to boost the coastal economy of Tanzania. Pristine coral reefs, white sandy beaches, and crystal clear waters are obvious attractions. The coast also possesses other sites of interest such as old trade centers and markets; colonial buildings, forts and ruins; archaeological sites such as Ras Kisimani on Mafia Island; unique natural and geological sites like the Amboni caves; and bird colonies on Latham Island; and coastal game reserves, such as the Selous and Saadani reserves in Tanga region. *Major constraints to coastal tourism growth are availability of good transportation, communication, power, and trained service staff. As infrastructure is improved and tourism facilities spread to new areas, careful management of sites will be critical to ensure development that is environmentally and socially sustainable.*

Coast region. Potential tourism attractions in the Coast region include game reserves, historical sites, eco-tourism, and beach tourism. There are two game reserves, Saadani and Selous. Saadani Game Reserve in Bagamoyo district covers an area of about 300 sq. km. and extends directly to the shoreline—a unique feature worldwide. Animals in the reserve are lions, giraffes, antelopes and zebras. Selous Game Reserve is located in the southern portion of Rufiji district and covers a land area of about 50,000 sq. km. The reserve is famous for its variety of animals such as lions, giraffes, buffalo, zebras, antelopes, rhinos and a vast number of hippos. The natural environment of this area has, for the most part, not been altered over time. With better roads to this area, the potential for eco-tourism would be great.

A number of hotels were recently constructed in Bagamoyo, both for its scenic beaches and its historic and cultural attributes (the Kaole Ruins and historic colonial buildings of the once national capital). More hotel development is anticipated.

There are camping sites along the Rufiji River, such as at Mbuyu and Stigler's Gorge, where photography, game viewing, swimming and boating are the attractions. The natural beauty of the beaches and marine environment are attractions of Mafia Island.

Lindi region. Part of the Selous game reserve is in Liwale district in Lindi region. However, poor transportation and communications infrastructure has hindered tourism development.

Mtwara region. There is currently little, if any, tourism in Mtwara region. As in Lindi region, transportation and communications are the principal problems. With an improved road to Mtwara from the capital, the potential for tourism will increase dramatically. The region has two game reserves covering an area of 65,450 ha. These are Msanjesi and Lukwika/Lumesile, both of which are in Masasi district, and contain a variety of wild animals. Msimbati Bay with 125 km. of coastline, Mikindani historical sites, and the famous "makonde" carvings are other potential tourist attractions.

2.7 Manufacturing and Industry

The coastal regions of Tanzania account for some 75 percent of the county's industries which are mainly concentrated in Dar es Salaam and Tanga. In the country as a whole, the contribution of industry to national GDP in 1994 was 16.7 percent (World Bank, 1996). Major industries in Tanga and Dar es Salaam regions include manufacture of fertilizer, textiles, cement, hardwood floor tiles, sisal rope/twine, steel rollers, plastics, cigarettes, soap and detergents, food processing, soft drinks, and breweries.

Industries located in the Coast region include:

- Tanzania Automobile Assembly Company (TAMCO) in Kibaha district. It assembles trucks, buses and tractors. In 1985 the company assembled 700 trucks per year, but trade liberalization has brought the plant to a near standstill.
- Cashewnut Processing Factory in Kibaha. Disease, low productivity, and falling cashew prices have reduced sales dramatically.
- African Wood, Ltd. in Mkuranga. Manufactures wood flooring for export.
- Two cotton ginneries in Bagamoyo and Rufiji.
- Pugu Kaolin mineral processing factory in Kisarawe district.

There is very little industry in the Lindi and Mtwara regions. In Lindi, cashewnut-processing plants built by the government have long been closed due to the lack of spare parts, fuel, and low agricultural productivity. There are two oil-processing mills, four saw mills and two backyard soap-manufacturing plants. The poor transportation system within the region is a major reason for limited industrial development. Also, the national electrical power grid does not reach Lindi. The major industries in Mtwara region are also agriculture-based. There are five cashewnut and two sisal processing plants, but they have all performed poorly. The cashewnut plants are now being privatized.

Oil and Gas Industry. There are a number of known petroleum reserves along the Tanzania coast that may result in mining operations with importance for the coast and nation.

- Selous Basin covers an area of 50,000 km.^{2}. The site is isolated with no major town or roads except for Liwale on the eastern side. The Shell Company has 4,700 km. of seismic data; one well was drilled, but was abandoned in 1995.
- Rufiji Trough covers an area of 16,000 km.^{2}. mostly within the Rufiji River flood plain and delta. The Shell Company has recorded 2,200 km. of seismic data on the site.
- Ruvu Basin covers an area of approximately 18,000 km.^{2}. Some 5,000 km. of seismic data was recorded and five wells were drilled.
- Pemba and Zanzibar Basins cover an area of 2,000 km.^{2}. The BP Company drilled three wells in 1969 and found the first offshore well in the United Republic of Tanzania. About 9,000 km. of seismic data was recorded.
- Songo Songo gas field is to the south of Kilwa district in the Coastal/Mafia Basin. The basin was licensed to Shell in 1991. It is expected that oil drilled from the gas field will contribute significantly to the nation's economy.
- Mandawa Basin covers an area of 15,000 km.^{2}. Three deep wells drilled by Shell in 1991 prove the existence of mature oil-prone source rocks. Tanganyika Oil Co. is negotiating with potential partners to drill two structures near the Indian Ocean about 270 km. southwest of Dar es Salaam.

3.0 THE INFORMAL SECTOR

In coastal regions, particularly in urban areas, the informal sector, or "second" economy, is becoming an increasingly substantial component of the economy. Growth of the informal sector has occurred as the economic structure shifts from a centrally-planned to a market-oriented. The number of people in the informal sector also grew as the economic situation worsened and real wages declined. The informal sector has expanded faster than official GDP, but is not measured by official statistics because of underreporting or non-reporting.

Informal sector activities are characterized by easy establishment; reliance upon indigenous resources both financial and material, family ownership; small-scale operation; labor intensity and dependence on family labor; adopted technology which requires skills that can be acquired outside the formal school system; and unregulated and competitive markets (Omari, 1989; Maliyamkono and Bagachwa, 1990). In Tanzania, the informal sector involves child labor, sometimes to the detriment of their education (Wagner, 1991).

In developing countries worldwide, the informal sector has an important role to play because it provides income-earning opportunities for large numbers of unskilled and otherwise jobless people. The informal sector is particularly important for women because it provides income-earning opportunities while still fulfilling their domestic and child-rearing role. In Tanzania, the informal sector has been important in providing essential commodities and services not provided by the government or any other non-government organization.

4.0 WOMEN'S DEVELOPMENT GROUPS IN COASTAL REGIONS

There is great potential to empower and increase the role of women in the economy and social development of coastal communities and coastal regions (see EPIQ 1998). Women dominate labor-intensive activities such as weaving, tailoring, pottery, beach seining, digging of shellfish, salt making, farming, preparing and selling food, brewing and selling beverages. The types of projects or activities that women engage in differ somewhat depending upon the social class they belong to, as well as their education, age, occupation, tribe and religion (Wagner, 1991). Women in the middle and upper income brackets may operate livestock and poultry projects, export/import businesses, quarries, private day care centers, and tutorial classes (a common activity for professional teachers).

There are about 170 women's economic development groups with a total of 2,073 members in the Coast region (1997 Socioeconomic Profile of the Coast region). These women's groups are involved in many different economic activities including vegetable gardens, retail shops of different types, restaurants and guest houses, sales of cooked food (mama Ntilie), embroidery and tailoring, pottery making, raising dairy cattle and poultry, grain milling, fishing, and buying and selling maize.

One-hundred and fourteen of the women's groups in the Coast region received loans and grants from various institutions, and another 57 groups are running their projects with their own resources. Ninety-six women's groups received loans from the government valued at a total of Tshs. 21 million under the Women's Development Fund. *The basic objectives of the Women's Development Fund and other credit schemes are to establish or strengthen women's groups, provide them with credit and technology, improve their marketing skills, and thus help improve their income earning potential.*

Other institutions that provide loans and grants to women's economic groups in the Coast region include UNDP (Women Appropriate Food Technology project), and the Ford Foundation (Rural Women Initiated Economic Participation project). Both institutions have provided loans or grants to a total of 18 women's economic groups amounting to over Tshs. 10 million.

In Lindi region, women's economic activities were funded by the Women's Development Fund for a total amount of Tshs. 35 million. *In Mtwara region there are 459 women's economic development groups with 6,452 members* involved in a variety of income generating activities including services, production, and trade. Thirty-one women's groups have obtained loans through the Women's Development Funds project for a total amount of Tshs. 11 million.

In Tanga region, women's economic groups are involved in a wide array of activities, including farming, trading, tailoring, livestock husbandry, and food processing. Eighty-two groups with 330 members received loans totaling Tshs. 10 million from the government in 1997 under the Poverty Africa Project.

5.0 BALANCING DEVELOPMENT AND ENVIRONMENTAL SUSTAINABILITY

The coastal zone is a dynamic area surrounding the interface between land and sea. It encompasses the shoreline environment as well as adjacent coastal and marine waters. The coastal area and its natural resources offer great benefits and opportunities for human use. Most coastal activities in Tanzania rely on the natural resources that the coast offers (fishing, forestry, agriculture, tourism, mining, salt production, mariculture). Therefore, *the condition of coastal ecosystems and social well-being are closely linked. A decline in coastal ecosystem productivity has a direct negative impact on society*.

In nature, coastal systems maintain a dynamic equilibrium. Human activities, if left unchecked, can threaten this sensitive equilibrium, and undermine the productivity of the resource base and the very foundation of current and future livelihood opportunities. Coastal stewardship means that pollution, habitat destruction, and overexploitation of resources are kept in check. Without adequate government regulations and oversight, the carrying capacity of complex and fragile coastal ecosystems is soon exceeded resulting in degradation, or even collapse of ecosystem functions.

In general, Tanzania is fortunate in that coastal ecosystems are in relatively good condition as a result of limited economic development and low population density in rural areas. *The challenge for the future is to increase coastal development and the well-being of coastal communities while continuing to protect the natural resource base.*

There are already many cases of the impacts of coastal activities on the delicate balance of the coastal ecosystem, and in urban areas, the trade-off between development and the environment is readily observed. The importance of forest product trade on forest resource exploitation was already noted in Section 2. Other examples of the impact of coastal activities on ecosystem health include:

- Extensive extraction of sand (for construction) from stream beds draining into the Kunduchi beach area (located approximately 18 km. north of Dar es Salaam) has contributed to beach erosion (Linden and Lundin, 1996).

- All along the coast, coral ecosystems are damaged from dynamite fishing, overfishing, mining of coral rocks for production of lime used in construction, and boat anchoring.

- Marine pollution from urban areas (e.g. Dar es Salaam and Tanga) is a growing problem. Sewage from homes, municipal buildings, and factories, is discharged into the sea untreated. Sewage systems are not abundant in Tanzania, and are limited to cities. In Dar es Salaam only 15 percent of more than two million inhabitants are connected to the sewer system (Linden and Lundin, 1996). Even where sewage systems are present, they are typically in poor condition and leak. Soak-away pit and septic tank systems are used in the city suburbs, where sludge is collected from the pits and taken to dump sites within the city limits. Settling pond systems are used in a few selected sites in the city. During rainy seasons, the pits and septic tanks tend to overflow and discharge into the sea via creeks, streams, and the surface drainage system. This results in the contamination of coastal waters especially in the vicinity of runoff, and in creeks and estuaries where there is little water exchange.

- Untreated wastes from industries on the coast are dumped in the open and leach into the ground or runoff into the sea. The city and region of Dar es Salaam contain about 70 percent of the country's industry ranging from textiles, food processing, beverages, tanneries, sisal factories, cement factories, and power generation.

6.0 HEALTH AND SOCIAL SERVICES

The improved well-being of coastal inhabitants, as indicated by education, health, sanitation, and social welfare is a major long-term goal of coastal management. This section presents a number of social indicators that demonstrate that the standard for social welfare is low in coastal regions. The findings suggest the need to:

- Develop targeted public education and awareness-building activities
- Demonstrate opportunities for low-cost, appropriate technologies for sanitation

- Promote formation of women's groups and community groups to increase public health awareness, share best methods for coping with difficult situations, and identify actions to resolve problems and improve conditions
- Provide technical assistance to selected villages to enhance effectiveness of Village Water Committees
- Increase household income and local revenues to improve standard of living
- Support social programs through enhanced performance of current livelihood activities and support alternative livelihood options.

6.1 Health

Health and health care in Tanzania's coastal regions are hindered by a number of problems relating to the low level of development. These include poor communications, unsafe water supplies, poverty, traditional belief systems, lack of education, poorly run health services, and malnutrition. The majority of people along the coast are exposed to environmental and nutritional related health problems. Water borne diseases such as malaria, cholera, and diarrhea are prevalent. Measles, pertussis, diphtheria, tetanus, and polio are serious heath problems among children. Malnutrition is also a common problem that exacerbates the risks from these diseases. Other health problems of significant importance are AIDS, upper respiratory tract infections, tuberculosis and leprosy. Table 6.1 shows the frequency of these and other communicable diseases for the Coast region.

Table 6.1. Top ten diseases by number of cases, Coast region

Type of Disease	1991		1993		1995	
	Cases	%	Cases	%	Cases	%
Malaria	414,809	42.9	390,194	51.6	122,620	46.8
URTI	110,672	11.5	74,512	9.9	34,434	13.2
Diarrhea	101,486	10.5	75,890	10	25,324	9.7
Anemia	67,717	7	67,568	8.9	18,208	7
Skin Diseases	72,405	7.5	39,900	5.3	15,646	6
Helminthes	57,288	5.9	40,226	5.4	16,436	6.3
Eye Diseases	63,580	6.6	24,966	3.3	17,278	6.6
Pneumonias	37,845	3.9	19,481	2.6	11,469	4.4
Venereal Diseases	25,256	2.6	9,360	1.2	-	-
Malnutrition	15,256	1.6	13,858	1.8	-	-
Total	966,314	100	755,955	100	261,415	100

Source: Regional Medical Office, Kibaha, 1997.

Health facilities for coastal regions are shown in table 6.2.

Table 6.2. Number of health facilities by region, 1996

Region	Hospitals		Health Centers		Dispensaries	
	Public	Private	Public	Private	Public	Private
Tanga	6	7	17		248	--
Mtwara	3	1	12	2	108	18
Coast	5	1	13	1	105	35
Dar es Salaam	--	--	--	--	--	--
Lindi	4	3	12	0	106	14

Source: Adapted from Health Statistics Abstract, 1997.

The distribution of health facilities relative to population is shown in Table 6.3.

Table 6.3 Hospitals and dispensaries per capita by region, 1996

Region	1996 Population (est.)	Number of Hospitals	Hospitals per capita	Number of Dispensaries	Dispensaries per capita
Coast	737,932	6	122,989	140	5,271
Lindi	744,402	7	106,343	120	6,203
Tanga	1,482,812	13	114,062	248	5,979

Dar es Salaam	--	--	--	--	--
Mtwara	1,005,405	4	251,351	126	7,979

Source: Adapted from Regional Socioeconomic Profiles, 1997.

The population per hospital bed (681) for Mtwara is the third best in the nation after Ruvuma (604) and Kilimanjaro (680). The national average is 981. The worst-served region is Shinyanga with 1,448 per hospital bed.

The life expectancy for Tanzania in 1988 was age 48 for males and age 51 for females. Life expectancy for coastal and other regions is shown in Table 6.4.

Table 6.4. Life expectancy at birth by region, 1978 and 1988 census

Region	1978 Census		1988 Census	
	Male	Female	Male	Female
Arusha	50	57	57	58
Coast	47	48	46	51
Dar es Salaam	50	50	50	50
Dodoma	45	46	45	47
Iringa	41	45	44	47
Kagera	45	45	44	45
Kigoma	40	48	47	49
Kilimanjaro	58	59	57	62
Lindi	42	47	46	48
Mara	44	47	46	48
Mbeya	41	47	45	48
Morogoro	44	46	45	48
Mtwara	40	46	45	48
Mwanza	44	48	46	50
Rukwa	40	45	44	48
Ruvuma	43	49	48	51
Shinyanga	42	50	48	51
Singida	44	55	54	55
Tabora	44	53	53	54
Tanga	44	49	48	51
Average for Tanzania	45	49	48	51

Source: Health Statistics Abstract, 1994.

The infant mortality rate and under age five mortality rate are common indicators for the success of health programs. Health Statistics Abstract 1997 shows that *Mtwara and Lindi regions have the highest infant mortality rate and under five mortality rate among all the regions of the country* (Table 6.5). Although the infant mortality rate and under five mortality rate numbers are better today than they were in 1975, they are still high. In Lindi region, for example, nearly 22 percent of children born today will not reach the age of five.

Table 6.5. Infant mortality rate and under five mortality rate by region (per 1,000)

Region	Infant Mortality Rate			Under Five Infant Mortality Rate		
	1975	1985	1995 (est.)	1975	1985	1995 (est.)
Mtwara	161	138	119	267	233	202
Lindi	151	140	129	255	236	218
Ruvuma	145	113	88	245	188	143
Morogoro	140	124	96	267	209	163
Coast	121	113	105	204	189	174
Dar es Salaam	108	105	102	179	173	168
Iringa	152	130	111	257	220	189
Dodoma	133	132	130	225	222	220
Arusha	108	75	52	179	129	78
Kagera	133	130	127	225	219	212
Kigoma	163	115	81	269	192	137
Kilimanjaro	76	67	59	119	104	90
Mara	140	125	112	236	211	189
Mbeya	161	124	96	267	209	163
Mwanza	139	115	95	233	192	157
Rukwa	170	131	101	2833	221	172
Shinyanga	150	110	81	252	183	131
Singida	137	96	67	231	157	106

Tabora	140	101	73	236	166	116
Tanga	112	106	100	187	176	166

Source: Health Statistics Abstract, 1997.

Table 6.6 shows that *rural areas have considerably higher infant mortality rate and under five mortality rates than urban areas*.

Table 6.6. Urban and rural infant mortality rate and under five mortality rate by coastal region, 1988

Region	Infant Mortality Rate		Under Five Mortality Rate	
	Rural	Urban	Rural	Urban
Mtwara	143	108	241	180
Lindi	143	121	241	204
Coast	115	104	193	172
Dar es Salaam	121	103	203	169
Tanga	109	89	182	144

Source: Population Census, 1988.

6.2 Sanitation

The availability of toilet facilities is an important aspect in health and environmental sanitation. Table 6.7 shows the distribution of toilet facilities in private households. The table shows that pit latrines are most common, access to flush toilets is much higher in urban than in rural areas, and the percentage of households without any toilet facilities is high in rural coastal regions (15-23 percent depending on the region). Particularly in coastal communities, there is a high percentage of households without any toilet facilities.

Table 6.7. Type of toilet facility by region (percentage of households, 1988 census)

Region	Rural			Urban		
	Flush	Pit Latrine	None	Flush	Pit Latrines	None
Dodoma	0.6	81.0	18.2	16.5	78.6	4.2
Arusha	1.2	65.9	32.8	18.4	79.5	2.0
Kilimanjaro	2.7	92.5	4.5	24.4	71.3	4.3
Tanga	0.8	80.8	18.3	16.2	79.2	4.5
Morogoro	1.3	88.6	9.5	12.7	84.8	2.5
Coast	0.9	76.1	23.0	4.8	88.3	6.7
Dar es Salaam	3.8	80.9	15.2	15.9	83.1	1.0
Lindi	0.6	77.2	22.2	4.7	85.0	10.3
Mtwara	1.0	84.2	14.8	7.4	86.1	6.6
Ruvuma	1.3	95.4	3.2	4.0	94.7	1.3
Iringa	0.9	97.1	2.0	4.0	94.9	1.1
Mbeya	1.4	94.3	4.4	6.1	91.8	2.1
Tabora	0.7	91.9	7.4	9.1	89.5	1.5
Rukwa	0.5	73.2	26.3	4.2	92.4	3.4
Kagera	0.5	86.6	12.9	13.0	81.4	5.7
Singida	0.9	78.6	20.5	7.0	87.6	5.5
Kigoma	0.7	94.1	5.2	5.3	91.9	2.8
Shinyanga	1.0	84.3	14.7	16.1	79.4	4.6
Mwanza	0.6	86.9	12.4	11.9	80.7	7.3
Mara	0.8	76.0	23.2	9.0	85.0	6.0

Source: Population Census, 1988.

6.3 Nutrition

The percentage of children underweight is another indicator of poverty and is related to school enrollment and education. The national average of children underweight (below 80 percent of normal weight) is nine percent. The average in coastal regions varies from 3 percent (Dar es Salaam) to 22 percent (Mtwara). *Lindi, Mtwara and Coast are among the regions with the highest percentage of children underweight* (Table 6.8).

Table 6.8. Nutrition status of children by region, 1995

Region	Number weighed	Children Undernutrition			
		Weight (as percent of normal)		Total	Percent Underweight
		<60%	60-80%		
Lindi	22,779	868	1,932	2,800	12
Arusha	68,418	709	2,845	3,554	5
Dar es Salaam	50,370	435	1,206	1,641	3
Dodoma	52,957	500	1,686	2,186	4
Iringa	45,459	847	8,083	8,930	20
Kagera	60,417	1,002	4,606	5,608	9
Kigoma	42,408	1,392	5,227	6,619	16
Kilimanjaro	42,903	211	968	1,179	3
Mbeya	84,231	1,528	10,062	11,590	14
Mara	45,944	651	1,918	2,569	6
Morogoro	51,329	1,045	3,215	4,260	8
Mtwara	23,127	850	4,138	4,988	22
Mwanza	89,166	1,416	4,648	6,064	7
Coast	22,934	734	2,607	3,341	15
Rukwa	33,454	876	3,611	4,487	13
Ruvuma	26,630	646	2,599	3,245	12
Shinyanga	74,715	559	2,244	2,803	4
Singida	31,254	376	1,276	1,652	5
Tabora	45,648	431	1,734	2,165	5
Tanga	54,006	701	2,060	2,761	5
Total	968,149	15,777	66,665	82,442	9

Source: Health Statistics Abstract, 1997.

6.4 Education

In Tanzania, school enrollment rates are low compared to other sub-Saharan countries. The gross primary school enrollment rate is 69 percent (World Bank, 1996). This compares with 95 percent in Kenya and 71 percent in Uganda. For poor families, primary education (of girls in particular) is not a top priority in the short run. Secondary school enrollment is 5-7 percent, compared to 29 percent in Kenya and 13 percent in Uganda (World Bank, 1996). *A sustained improvement will require a re-allocation of government expenditures to support social sector objectives*. Tanzania devotes about 15 percent of its recurrent budget to education, which is low relative to neighboring countries. Spending on social programs is not keeping up with growth in the economy, and is falling as a percentage of GDP.

In contrast, Tanzania is performing relatively well in terms of illiteracy rate when compared with other sub-Saharan African countries. The adult illiteracy rate is 23 percent of the population.

The number of secondary schools in Mtwara, Coast, Lindi and Tanga regions is shown in Table 6.9.

Table 6.9. Number of secondary schools by region

Region	Public	Private	Total
Mtwara	10	3	13
Coast	12	15	27
Lindi	12	3	15
Tanga	22	19	41

Source: Regional Education offices.

6.5 Water Supply

Water supply and access to clean water varies by coastal region. In Mtwara and Lindi regions, 87 and 61 percent, respectively, of the villages are supplied with clean water. In Tanga, about 48 and 90 percent of the rural and urban population, respectively, are supplied with clean water. *Relative to the country as a whole, water access is good in coastal regions*. On average in Tanzania, only about 22 percent of the people in rural areas have access to safe water. During the dry season, drinking water problems are worse—it takes more time and effort to obtain water and disease problems are much more severe.

In Mtwara, the main sources of water are the Ruvuma, Mbuo, Mambi and Mbangala Rivers; Lakes Kitere and Chidya; and groundwater and rainwater. With respect to urban water supply systems, Masasi has four main sources of water: Mchema dam, five deep wells at Magumchila, 50 shallow wells dug within the town area, and the water catchment from Mwena and Mwili springs. A variety of sources also supply Mtwara and Mikindani townships. There are seven deep wells in Mtawanya valley, two deep wells within the Mikindani area, and a spring at Mchuchu. Newala town is served by the extensive Makonde plateau piped water system that relies on electricity.

Groundwater is the largest water supply source in the Lindi region. It is plentiful and accessible from shallow wells. Shallow wells served by water pumps are common in the villages. Because they are not open as the discharge is made through pumping, the wells are not exposed to the risks of infestation and contamination. In 1996, about 50 percent of the region's population obtained their water needs from piped water. There are also numerous rivers and dams that can provide surface water.

The Tanga region has abundant water sources from underground and surface sources. Surface water supplies include the Pangani, Ruvu, Soni, Mkulumuzi and Sigi rivers. In 1995 the region had 85 water supply schemes (gravity and pump), 475 shallow wells fitted with hand pumps, 19 deep wells, and 11 dams.

About 26 percent of the population of the Coast region get their water supplies from the Wami, Rufiji and Ruvu rivers. Other sources of water are deep and shallow wells, natural and man-made water dams, piped water, and rainwater harvesting. Many of the installed deep wells do not function due to salt water intrusion (especially in Bagamoyo district), lack of pumps, and deterioration of old pumping machines (especially in Rufiji district). A high percentage of the region's shallow wells and dams are also out of operation.

In all the regions, water supply systems are generally operated and maintained by village water committees whose members are elected by villagers. Table 6.10 shows the number of village water committees and village water funds in the Coast, Mtwara, and Lindi regions.

Table 6.10. Number of village water committees and water funds by region, 1996

District	Total Number of Villages	Village Water Committees	Village Water Funds	Funds Contributed (Tshs.)
Coast	377	138	79	10,000,000
Mtwara	548	134	102	na
Lindi	365	241	157	4,039,892

Source: Regional Water Office, Lindi, 1997; Regional Water Engineer, Mtwara, 1997; Regional Water Engineer's Office, Kibaha, 1997.

7.0 COMMUNICATION AND TRANSPORTATION INFRASTRUCTURE

Problems of infrastructure, including roads and other transport, port facilities, electrical power, and telecommunications, are a fundamental and underlying issue in almost all aspects of development and coastal management in coastal regions. They have a major impact on economic activities, decisions to migrate, health, education, and sanitation. Means of improving infrastructure conditions may include: improved planning and coordination of government organizations and projects involved with infrastructure development; integration of investment promotion, sectoral development and infrastructure development; improved assessment of infrastructure priorities; and adoption of labor-intensive methods in constructing rural road projects.

7.1 Roads

In general, the road system is extremely poor in coastal regions. In the Coast region, 89 percent of the roads are constructed of gravel and bare earth and are impassable during the rainy season. The “trunk” roads that connect other regions with the Coast region are about 85 percent hardtop. Connecting roads represent about 11 percent (407 km.) of the total road length in the region. In Lindi, most of the roads are old and have not been rehabilitated—96.4 percent of the roads are built of earth and two percent are built of tarmac, but are full of potholes. In Tanga, about 304 km. of roads are built of tarmac, 1,092 km. are built of gravel and 1,382 km. are built of earth.

Despite their poor condition, in all coastal regions, *roads are the most important means of transportation within regions and to other regions*. In rural areas, bicycle is the main form of local transportation. In Mtwara, the roads to Lindi, Kilwa, and Dar es Salaam, and the Mtwara/Songea/Makambako roundabout link to the Tanzam highway are the main links with other regions. All these connections are severely affected during the rainy season when they become nearly impassable. The sandy terrain that dominates the region makes it difficult for people to use bicycles as an alternative.

The Coast region surrounds all sides of Dar es Salaam (except the eastern-most side, facing the Indian Ocean). Therefore all highways connecting other regions to Dar es Salaam, and road traffic to and from the city from every region of the country, pass through the Coast region. Data on road length and density in the Coast region are presented in Tables 7.1 and 7.2.

Table 7.1. Kilometers of roads, Coast region, 1996

District	Trunk Roads		Regional Roads		District Roads		Feeder Roads		Total	
	Km.	%	Km.	%	Km.	%	Km.	%	Km.	%
Bagamoyo	154	37.8	316	41.9	51	6.8	382	21.3	903	24.3
Kibaha	45	11.1	53	7.0	132	17.5	140	7.8	370	10.0
Kisarawe	-	-	151	20.0	153	20.3	596	33.1	900	24.2
Mkuranga	90	22.1	45	6.0	166	22.0	151	8.4	452	12.2
Rufiji	118	29.0	122	16.1	215	28.6	424	23.6	879	23.7
Mafia	-	-	68	9.0	36	4.8	105	5.8	209	5.6
Total	407	100	755	100	753	100	1,798	100	3,713	100

Source: Regional Engineer Office, Kibaha, 1997.

Table 7.2. Road density, Coast region, 1996

District	Land Area (sq.km.)	Total Roads (km.)	Road Density (km./sq.km.)	Rank
Bagamoyo	9842	903	0.092	5
Kibaha	1812	370	0.204	2
Kisarawe	4464	900	0.202	3
Mkuranga	2432	452	0.186	4
Rufiji	13339	879	0.066	6
Mafia	32407	209	0.403	1

Source: Coast Region Socioeconomic Profile, 1997.

In Lindi region, the poor condition of roads discourages traffic flow between other regions. The Dar es Salaam - Lindi road is the “lifeline” of the region’s economy but is in extremely poor condition. It crosses the Rufiji River, but there is currently no bridge (one is under construction). Vehicles are transported across the river by boat. During the rainy season, the road is impassable. By any measure, the region is among the least developed in the country largely due to poor roads and other infrastructure.

Tanga region has a total of 3,907 km. of roads of which 352 km. are trunk roads, 939 km. are regional roads and 2,716 km. are district and feeder roads. Three district centers, Tanga, Muheza and Korogwe are located along main tarmac roads. Most of the roads in the region have recently been improved under the “Routine Road Maintenance Programme.” This improvement has made most of the roads in the Tanga region passable throughout the year.

7.2 Ports and Harbors

Major ports are located in the cities of Tanga, Dar es Salaam and Mtwara. The Tanzania Harbor Authority administers all the ports. The port of Dar es Salaam is by far the most active and handles transit traffic for neighboring landlocked countries (see Table 7.3). More than 50 percent of the cargo handled by Dar es Salaam is transit cargo for Zambia, Malawi, Rwanda, Burundi, Uganda, and the Democratic Republic of Congo. *However, the full potential of the port to provide shipping and transit facilities to neighboring landlocked economies that are in competition with Mozambique and South Africa, has not been realized.*

Table 7.3. Cargo movement in major ports (tons)

Port	1991/92	1992/93	1993/94	1994/95	1995/96
Dar es Salaam					
Imports	3,083,100	3,721,225	3,130,725	3,393,560	3,073,447
Exports	1,161,902	1,119,552	961,126	994,685	858,334
Total	4,245,002	4,840,777	4,091,851	4,388,245	3,931,781
Tanga					
Imports	110,428	81,485	55,596	42,151	28,396
Exports	97,082	112,754	99,363	58,085	78,401
Total	207,510	194,239	154,959	100,236	106,797
Mtwara					
Imports	46,875	39,325	47,345	37,000	42,264
Exports	62,646	56,634	47,790	57,926	64,355
Total	109,521	95,959	95,135	94,926	106,619
Total	4,562,033	5,130,975	4,341,945	4,583,407	4,145,197

Source: Annual Report, Tanzania Harbor Association, 1995-1996.

Tanga port is the second largest in the country. It is estimated that the harbor has a capacity of about 320,000 tons per year.

Mtwara port was built in the 1950s for the British Overseas Food Corporation. The Corporation failed, leaving the port with excess capacity. Two ships at a time can be docked at its deep-water berth; other ships can move within the harbor, and at its entrance channel. The port has an open yard of 15,000 sq. m. that can be used for container storage.

The harbor is strategically well placed to serve cargo being transported to and from the regions of Mtwara, Ruvuma and Lindi, as well as the countries of Malawi and Zambia. This potential has not been achieved due to poor roads leading to the city of Mtwara. There is only limited commercial freight and passenger transport between the port of Mtwara and Dar es Salaam. However, during the rainy season, the passenger service by boat to Mtwara is the most reliable means of travel.

Lindi region has two ports—one in the city of Lindi and the other in Kilwa. However, they service only small boats and merely link the districts within the region; and they do link not the region with other parts of the country.

7.3 Air Services

The most important airport in the country in terms of passenger and cargo service is located in Dar es Salaam. *Air transportation provides a limited but reliable link with the regions*. Mtwara region has three landing facilities—one major airport, one minor airport and one airstrip. The major airport is in the town of Mtwara, and is capable of handling Boeing 737 aircraft and regular commercial traffic. Masasi has a minor airport; and Newala has a small airstrip for use by light, non-commercial aircraft at irregular intervals.

Air transportation is not common in the Coast region. There are two airstrips owned by the government, one on Mafia Island and another in Rufiji. A private airstrip is under construction in Bagamoyo. Lindi region has three airports located in the town of Lindi, Nachingwea and Kilwa; Air Tanzania offers service to them. Tanga region has the fifth largest airport on mainland Tanzania. There are also other privately owned airstrips.

7.4 Railways

The country is served by three rail networks—one running from Dar es Salaam to Kigoma and Mwanza called the central rail line, one running from Dar es Salaam to the northern zone, and one running from Dar to Zambia. The first two are owned and operated by Tanzania Railway Authority—a parastatal body previously wholly owned by the government. The Dar es Salaam to Zambia line is operated by the Tanzania Zambia Railway Authority (TAZARA)—a parastatal firm jointly owned by the governments of Tanzania and Zambia. *There are no railway lines in Mtwara and Lindi regions.*

Tanga region has a total railway track of about 279 km. The railway density is 1 km. per 100 square kilometers of land area. This is the second highest railway density in the country. The region has 32 railway stations. However many travelers prefer to travel by road to and from Dar es Salaam, Arusha, Moshi and Kenya because the roads that connect the region to these areas are in good condition and trains are normally slower.

7.5 Telecommunications

Communications infrastructure is very limited outside a few cities and towns in coastal regions. Even in the city of Dar es Salaam, telephone and fax service poor. Mtwara region has a telephone capacity of 1,550. Currently, about 900 customers are connected to the line in the town of Mtwara and 400 lines are connected to the districts. The Coast region has a total of 787 telephone lines, seven telex machines, and seven fax machines distributed among all districts (Table 7.4).

Table 7.4. Communication services, Coast region, 1996

Type of Service	District	Number
Telephone Lines	Kibaha	424
	Bagamoyo	129
	Kisarawe	44
	Mafia	81
	Rufiji	109
	Total	787
Telex Machines	Kibaha	7
Fax Machines	Kibaha	6
	Bagamoyo	-

Source: Tanzania Telecommunications Company office, Kibaha, 1997

Lindi region has a total of 500 telephone connections. The region has only one automatic telephone exchange located in the town of Lindi that connects the region to the rest of the country. There are “manned” telephone exchanges in the smaller towns of Kilwa Masoko, Kilwa Kivinje, Nachingwea, Liwale and Mtama.

7.6 Electrical Power

In rural areas of the country only about 1 percent of households have electricity, in urban areas about 30 percent, and in Dar es Salaam about 52 percent (World Bank, 1996). The source of power is mainly hydroelectric. The national electrical grid channels all power to Dar es Salaam and from Dar es Salaam it is distributed to the regions.

REFERENCES

EPIQ (1998), *Gender Assessment for USAID/Tanzania SO2 Partners: Executive Summary*. Environmental Policy and Institutional Strengthening Indefinite Quantity Project in Tanzania. USAID. Dar es Salaam, Tanzania, April 1988.

Linden, O. and Lundin, C.G. (1996), *Proceedings of the National Workshop on Integrated Coastal Zone Management in Tanzania*. The World Bank and SIDA.

Maliyamkono, T.L. and M.S.D. Bagachwa (1990), *The Second Economy in Tanzania.* East African Study Series. Ohio University Press.

Mwandosya, M.J. et al. (1997), *Towards a Strategy for the Conservation of Coastal Biological Diversity of Mainland Tanzania.* CEEST Publications. United Republic of Tanzania.

Omari, C.K. (1989), *Rural Women, Informal Sector and Household Economy in Tanzania*. Helsinki: Wider Working Papers.

United Republic of Tanzania (1997), Tanga Region Socioeconomic Profile. The Planning Commission Dar es Salaam and Regional Commissioner’s office Tanga.

United Republic of Tanzania (1997), Lindi Region Socioeconomic Profile. The Planning Commission Dar es Salaam and Regional Commissioner’s office Lindi.

United Republic of Tanzania (1997), Coast Region Socioeconomic Profile. The Planning Commission Dar es Salaam and Regional Commissioner’s office Coast.

United Republic of Tanzania (1997), Mtwara Region Socioeconomic Profile. The Planning Commission Dar es Salaam and Regional Commissioner’s office Mtwara.

United Republic of Tanzania (1988), Tanzania Population Census. National Profile. Bureau of Statistics, President's Office, Planning Commission. Dar es Salaam, Tanzania.

Wagner, S.M. (1991), *Women in the informal economy of Dar es Salaam suburbs: Their contribution to the household budget*. Thesis submitted as partial fulfillment of a B.A. in Sociology, University of Dar es Salaam, Tanzania.

World Bank (1996), *Tanzania, The Challenge of Reforms: Growth, Incomes and Welfare*. Report No. 14982-TA, Volume 1, The World Bank, Washington, D.C.