

The contribution of air transport to sustainable development in Africa

THE CONTRIBUTION OF AIR TRANSPORT TO SUSTAINABLE DEVELOPMENT IN AFRICA

Final report on study for the Air Transport Action Group

By

Oxford Economic Forecasting

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The study can be downloaded from ATAG's website www.atag.org.

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EXECUTIVE SUMMARY

- **The aviation industry has a vital role to play in achieving sustainable development in Africa. The expansion of air services is a necessary condition for the development of a more diversified export base across the continent and for the expansion of tourism to the region. Improvements in the air transport infrastructure would help to raise living standards and alleviate poverty in Africa by lowering transport costs, supporting more rapid economic growth and increasing personal mobility. Moreover, the expansion of the nature-based tourist industry offers not only a significant source of future employment and income growth but also an effective mechanism to improve the conservation of the environment and, in particular, Africa's protected areas.**
- Africa accounts for just 2% of world GDP but hosts 13% of its population. As a result, GDP per capita in Africa is the lowest of the world's regions. The general picture is one of underdevelopment, political instability, economic volatility and pervasive poverty. While there is a major opportunity to improve living standards and alleviate poverty through sustained economic growth, the combination of a poverty trap, poor human capital and the threat of HIV/AIDS poses formidable challenges to policy-makers across Africa.
- Investor confidence and investment have been direct casualties of prolonged instability. As a result, despite its great growth potential and the availability of natural resources, investment – both foreign and local – has been poor and erratic in the region in recent decades. In order for Africa to realise its growth potential, there has to be a rapid and decisive reversal of this trend that is widening the 'infrastructure gap' compared to other regions in the world.
- Africa is the smallest region for air services in the world, reflecting its low income and lack of air transport infrastructure. It accounted for only 4.1% of total world passenger traffic in 2002 and just 1.6% of the world air cargo traffic. Moreover, the use of air services is very concentrated within Africa: the 10 biggest national markets account for 70% of the total number of passengers travelling by air in the region and 90% of cargo flights. However, aviation is the main transport mode in international flows in the continent and its importance relative to other modes of transport is increasing: the use of air transport expanded by 7.2% a year on average during the 1990s, compared to a rise of 4.4% pa in the use of road transport.
- Infrastructure – i.e. airports and air-traffic management - is essential to the growth and functioning of air transport services. In many African countries, more than elsewhere in

the world, infrastructure inefficiencies coupled with limited competition are making market access both difficult and expensive. In addition, safety issues are a source of concern, particularly given the prospective growth in demand for air services.

- Improvements in the air transport infrastructure have a key role to play as a facilitator of and complement to policies that aim to improve living standards and alleviate poverty. The aviation industry is particularly important for countries that adopt an outward-oriented development strategy in providing access to wider markets, reducing the costs of assembling inputs during the production process and of delivering goods and services, and facilitating inward investment. In this, better air services are especially important to landlocked countries in Central Africa.
- Perhaps the major potential contribution that air services can make to economic development in Africa is through developing and promoting international tourism. Tourism facilitates poverty reduction by generating economic growth, providing employment opportunities and increasing tax collection, and by fostering the development and conservation of protected areas and the environment in general. Economies with high growth during the last decade (e.g. Mauritius, Tunisia, Egypt, Ghana) have tended to be those where the tourist sector is key to economic activity.
- The limited number of regional hubs and the lack of a well-developed network of domestic airports is a serious limitation to the opening of tourist resorts in the continent. Deficiencies in air services are particularly acute in Central and Western Africa. In addition, air transport costs and flight fares in Africa are above the world norm, inhibiting the development of tourism in the continent and the export of high value-added products.
- But maximising the impact on poverty alleviation of the development of the air transport and tourism sectors requires that provision is made for the involvement of local communities, emphasising the improvement of education and employment opportunities. In this respect, government policy can encourage the private sector to adopt poverty reduction practices, as illustrated by the experience of South Africa in promoting a Responsible Tourism Approach.
- Despite significant technological improvements, the environmental impact of the expansion of air transport continues to be a source of concern. Aviation causes air pollution and noise at ground level, together with ozone layer depletion and global warming effects due to emissions in the troposphere. However, in Africa the beneficial impacts of the expansion of air services on economic growth and poverty alleviation are most likely to outweigh costs in terms of climate change, noise and congestion.
- In particular, aviation can make a significant contribution to the conservation of protected areas in Africa by facilitating the development of a nature-based tourist industry. The continent is home to nearly 15% of the total landmass of protected areas worldwide, potentially a valuable comparative advantage in attracting international visitors.
- Nature-based tourism, properly managed, is a win-win solution, where environmental conservation can effectively be combined with economic development in the rural areas of Africa. However, a balance needs to be found between the revenue and employment-generating potential of protected areas - implying increased capacity and infrastructure - and pressures on the environment.

- The expansion of aviation in Africa has the potential to generate the largest net benefits of any of the world regions. The currently very low level of incomes per capita mean that African countries would gain more than richer, developed economies from new investment, particularly in infrastructure. And the continent's low population density, high land availability and relatively low initial airflows mean that the environmental costs associated with an expanding aviation sector are likely to be less than in other regions.

Summary of Recommendations

- Aviation safety and security across Africa remains a major source of concern and an obstacle to both the integration of African countries into the world economy and to the healthy development of the tourism sector. In particular, the modernisation of air traffic control (ATC) systems is key to improving efficient operation and safety of airflows. Improving safety and security in Africa requires the full commitment and cooperation of airlines, airports, air navigation service providers, governments and international institutions.
- The 1999 Yamoussoukro decision should be fully implemented, leading to the radical reduction of state control over the aviation industry. Besides establishing the appropriate bodies and mechanisms to translate this decision into action, governments should refrain from using airlines and airports as easy targets for new revenues. They should only charge them those costs which are strictly justified in the provision of essential supplies and services.
- The main challenge to a number of African countries is to put an end to a situation of economic stagnation and poverty. It is the message of this report that the expansion of air services in the continent, and the promotion of more diversified external trade and tourism sectors, offer an opportunity to put in motion a virtuous cycle based on economic growth and sustainable development.
- Our findings also confirm the need to implement the triple partnership of air services proposed by the Air Transport Action Group (ATAG): i) improving air transport's efficiency and environmental performance, ii) a partnership to develop infrastructure and links with other transport modes, iii) a partnership with communities and other interest groups to promote exports and tourism.

INTRODUCTION

This study analyses the contribution of air transport to sustainable development in Africa and considers what policies towards aviation would best promote sustainable development over the next 10-20 years. In doing so, it considers sustainability from three perspectives:

- **Economic and financial sustainability** – Looking at the role of the aviation industry in creating jobs, encouraging trade and tourism, and improving investment opportunities in Africa.
- **Environmental and ecological sustainability** – Identifying the ways in which air services impact on the environment: noise and air pollution. The conservation of protected areas and other emerging examples of best practice suggest that there is scope to improve the environment and the livelihood of the poor, who are particularly threatened by global warming, while taking advantage of the economic benefits generated by safe and efficient air transport links and responsible tourism.
- **Social sustainability** – Considering how air services contribute to the well-being of all sections of the community, not just the richer households and companies. The assessment on the social aspects of air transport should lead to a dialogue on the future role of air transport and sustainability in Africa.

The main message of this report is that the expansion of air services in Africa and the promotion of more diversified external trade and tourism offer an opportunity to set in motion a virtuous cycle of economic growth and sustainable development. Our findings also confirm the need to implement the triple partnership of air services proposed by the Air Transport Action Group (ATAG): i) improving air transport's efficiency and environmental performance, ii) a partnership to develop infrastructure and links with other transport modes, iii) a partnership with communities and other interest groups to promote exports and tourism.

ATAG is an independent coalition of organisations and companies throughout the air transport industry that have united to drive aviation infrastructure improvements in an environmentally-responsible manner. Created in the early 1990s, ATAG is a not-for-profit association based in Geneva, Switzerland with some 80 members worldwide. Its members include airports, airlines, manufacturers, air navigation services providers, airline pilot and air traffic controller unions, chambers of commerce, travel and tourism organisations, ground transportation and communications providers. ATAG's funding members are ACI, Airbus, Boeing, CFM, IATA and Rolls-Royce

This report is divided into eight main sections:

- Section I begins by highlighting key aspects of the continent's economic and social environment. Africa is a vast region including a plethora of countries with significant variations in terms of economic structure, institutions, natural resources, culture and religion. However, the general picture is one of underdevelopment, political instability, economic volatility and pervasive poverty. While there is a major opportunity to alleviate poverty and improve living standards in the continent through sustained economic growth, the combination of a poverty trap, poor human capital and the threat of HIV/AIDS poses formidable challenges to policy-makers across the region.

- Section II introduces the current situation of air services in Africa. Despite recent significant improvements in air infrastructure in countries adopting an export-led growth strategy, in general air services in the continent are underdeveloped, particularly in domestic air transport. A particular problem in the provision of air services in the region is that it is highly concentrated in a handful of countries, notably South Africa and the tourist-based countries in North Africa. There are a number of countries, especially landlocked ones where air services are needed the most, that suffer from a serious under-provision of air services.
- Section III deals with the sector's contribution to economic growth and poverty alleviation. Transport infrastructure is seen as a necessary condition for economic growth and, although in itself it cannot reduce poverty, it has a key role to play as a facilitator of and complement to policies that aim to improve living standards. The development of infrastructure in general, and air services in particular, is paramount for the future of African countries as they embark on closer integration with the world economy.
- Section IV concentrates on the link between air services and tourism. The promotion of tourism is a superior option to the promotion of other industries in Africa in terms of economic linkages and generation of employment and foreign exchange. In order to take full advantage of their potential as magnets for tourism, African countries need to embark on the modernisation and expansion of their air transport infrastructure and regulation. They also need to continue progress in promoting the creation of regional hubs in order to increase the supply of air transport to each of the sub-regions and to enable competitive and attractive fares.
- Section V focuses on the impact of aviation on the environment. Aviation has great advantages as a mode of transport in terms of access, time saving and safety. However, despite significant technological improvements, the expansion of air transport continues to be a source of concern due to its impact on the environment. In particular, aviation causes air pollution and noise at ground level, together with global warming effects. However, even though environmental considerations should be addressed and efforts renewed in developing cleaner technologies and improving environmental standards, the implications of air services for the environment need to be seen in the broader context of countries' development needs.
- Section VI considers the relationship between air services and protected areas. The expansion of the nature-based tourist industry could become a significant source of revenues and employment and, at the same time, an effective mechanism to improve the conservation of protected areas. However, nature-based tourism is a global industry, where an efficient and well-developed air infrastructure and services is crucial if African countries are to compete successfully.
- Section VII reports the findings of a series of case study interviews with major companies operating in Africa to identify their views on the importance of air services to their businesses and the key improvements they would like to see regarding air service provision.
- Finally, Section VIII presents a number of policy recommendations for the development of air services in Africa. Key issues are identified regarding the role for African

governments, particularly in ensuring significant improvements in aviation safety and security; the improvement in airport development and in the performance of African airlines and the need to increase co-operation with international airlines; and the role for external governments and supranational bodies in promoting the expansion of air services in the continent. Improving training opportunities for African carriers through an extended International Airline Training Fund (IATF) will be essential to the enhancement of the operational and commercial performance of the airlines.

The report also includes a number of case studies describing relevant development initiatives and projects. They serve to offer a more vivid account of recent experiences in the continent related to the main issues discussed in the report. They are:

- The *Trade and Investment Gateway Project* in Ghana designed to attract a critical mass of export-oriented investors to Ghana to accelerate export-led growth;
- The South African experience with the *Responsible Tourism Approach*, illustrating how government policy can encourage the private sector to adopt poverty reduction practices;
- The *Central Region Project* in Ghana, an initiative with the support of international organisations for the development of the country's central region with tourism as the leading sector;
- The development of *Ecotourism in Costa Rica* as an example of the potential of nature-based tourism as a generator of foreign exchange, employment and the improvement of conservation;
- The *Kasanka National Park* in Zambia, which demonstrates the beneficial contribution the private sector can make to improving the conservation of protected areas;
- The *Budongo Forest Ecotourism Project* in Uganda, which is an example of how to preserve protected areas without sacrificing their economic contribution to the country.

In addition, Annex A includes a map of Africa, including the five sub-regions. Annex B presents the results of the African section of a survey on inter-carrier co-operation worldwide conducted by Airline Business. Annex C presents a graphical analysis of the economic and social background in Africa. And Annex D provides a graphical overview of recent trends in the use of air services and tourism in Africa.

I. ECONOMIC AND SOCIAL BACKGROUND

Key Points

The general picture of Africa is one of underdevelopment, political instability, economic volatility and pervasive poverty. While there is a major opportunity to alleviate poverty and improve living standards through sustained economic growth, the combination of a poverty trap, poor human capital and the threat of HIV/AIDS poses formidable challenges to policy-makers across the region.

Main economic and social features:

- Africa accounted for only 2% of world GDP but 13% of the world population in 2000.
- Economic activity in Africa is highly concentrated. South Africa, Egypt, Algeria, Morocco and Nigeria were responsible for 67% of the continent's GDP in 2002.
- GDP in the region tends to be volatile, the result of extreme export concentration, high indebtedness, and political and policy instability.
- Agriculture still accounts for a very high proportion of output and employment in many African countries, while the development of many industrial sectors is still in its initial stages.
- African countries remain to a large extent producers of raw materials.
- Poverty is endemic in the continent, with 65% of the population living in extreme poverty.
- HIV/AIDS poses an enormous public health, economic and social challenge to Africa.

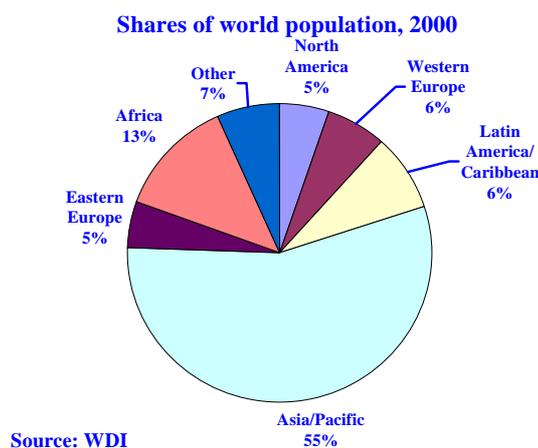
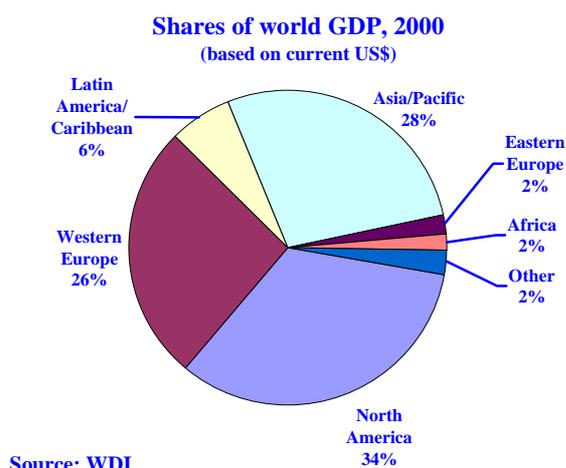
Africa is a vast continent with a plethora of countries with different levels of development and with significant variations in terms of economic structure, institutions, natural resources, culture and religion. However, the general picture is one of underdevelopment, political instability, economic volatility and pervasive poverty. While there is a major opportunity to alleviate poverty and improve living standards in the continent through sustained economic growth, the combination of a poverty trap, poor human capital and the threat of HIV/AIDS poses formidable challenges to policy makers across the region.

The continent is usually divided into five sub-regions: North Africa comprising a total of 7 countries with 22% of the continent's population in 2000, Central Africa with 9 countries and 11.7% of the population, East Africa with 18 countries and 32% of the population, West Africa with 17 countries and 28% of the population, and Southern Africa with 5 countries and 6.3% of Africa's population (see map of Africa in Annex A). Meanwhile, the continent includes 31 of the 49 countries identified by the United Nations Conference on Trade and Development (UNCTAD) as "Least Developed Countries" (LDCs) – a definition that in addition to low income per head also refers to a low share of manufacturing activity, high degree of economic vulnerability and weak human assets.

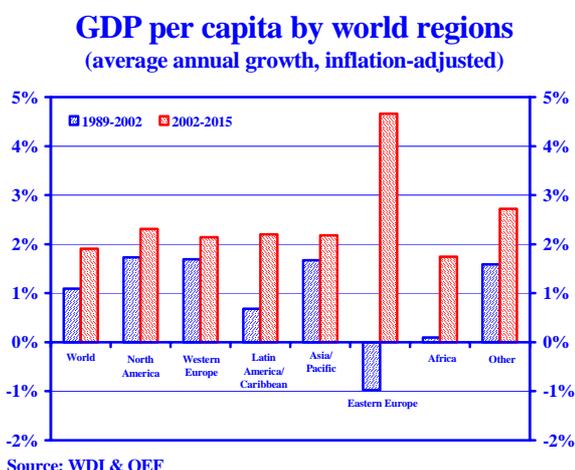
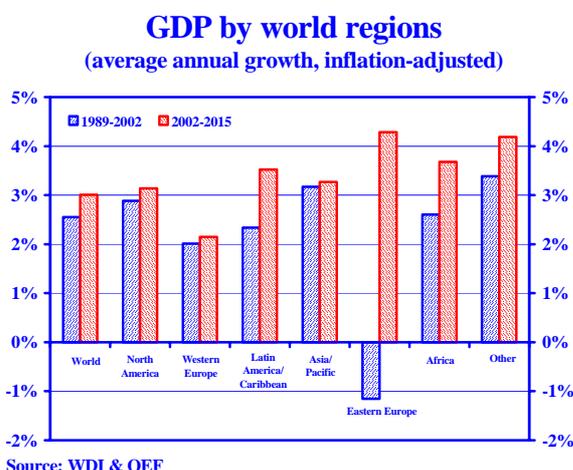
In this report we shall pay particular attention to a sample of 11 countries where there is either already a well-established tourist industry (Egypt, Tunisia, Morocco, Mauritius and Kenya) or where there are on-going efforts to improve and promote tourism (South Africa, Tanzania, Ghana, Senegal, Cameroon, Nigeria). These also tend to be countries with relative political and social stability, thus favouring prospects for economic growth and investment.

1. Main features of the economy

Africa accounted for only 2% of world GDP in 2000, roughly the same percentage as in 1990. However, in contrast to its low share of economic activity worldwide, the continent contained 13% of the world population in that year. The combination of low output and high population means that GDP per capita in Africa (adjusted by purchasing power parity) is the lowest among the world regions. In 2000 the income level of an average person in Sub-Saharan Africa was 15 times lower than that of the average person living in the EU, and nearly 50 times lower when market exchange rates are used to compare income across regions (WDI, 2002).



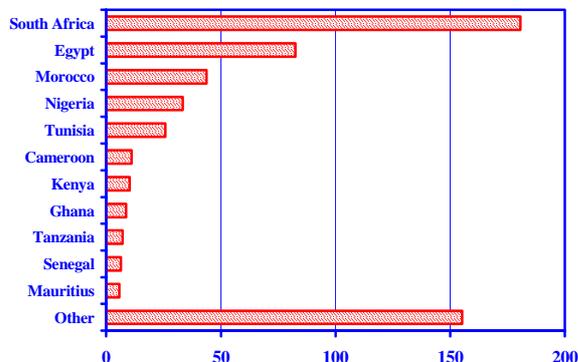
Africa's GDP has risen by close to the world average since 1989, at an average annual rate of 2.6%, and it is expected to be one of the fastest growing regions to 2015. However, with population growth relatively rapid, at an annual average of 2.3% during the 1990s (above the world average of 1.5%), GDP per capita has barely increased since 1989. Despite the fact that there is ample room for improvement in terms of living standards - given the continent's low level of capital per capita, its abundance of natural resources and relatively low labour costs - civil unrest, political instability and natural disasters have severely undermined investment and growth prospects in the region for decades.



Agriculture still accounts for a very high proportion of output and employment in many African countries, whereas the development of many industrial sectors is still in its initial stages, confirming a general state of underdevelopment. The exceptions are South Africa and Mauritius, where the share of industry in GDP was close to 30% in 2000. The level of urbanisation in Sub-Saharan Africa was 34% in 2000, although there are countries such as South Africa (45%) and Botswana (50%) well above the average. The process of urbanisation is in a more advanced stage in North Africa with an average close to 60%.

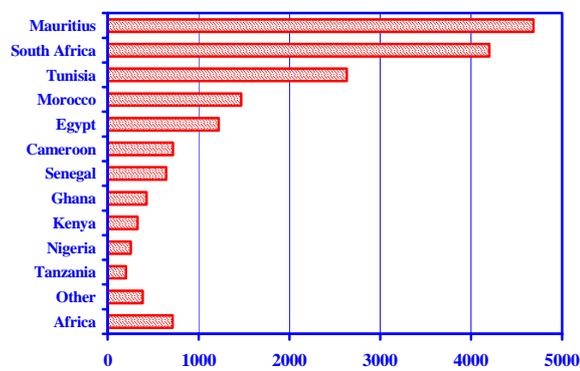
One salient feature of economic activity in Africa is that it is highly concentrated among a handful of countries. Thus, five economies (South Africa, Egypt, Algeria, Morocco and Nigeria) were responsible for 67% of the continent's GDP in 2002. South Africa is by far the biggest economy in the region with nearly a third of total GDP. And high concentration is also evident in the distribution of the continent's population. It is estimated that the top five most populated countries (Nigeria, Egypt, Ethiopia, Congo Democratic Republic and South Africa) accounted for about 45% of the total population of the continent in 2000. GDP per capita is highest in Mauritius and South Africa (where it is similar to so-called 'middle income' countries such as Brazil and Malaysia). However, there is a great dispersion in living standards across Africa, with most countries recording very low levels of income per head. For instance, GDP per capita in South Africa in 2000 was nearly 20 times that of Sierra Leone and six times the average value for Sub-Saharan Africa.

GDP in Africa, 2002
(US\$ bn, 1995 prices)



Source: WDI & OEF

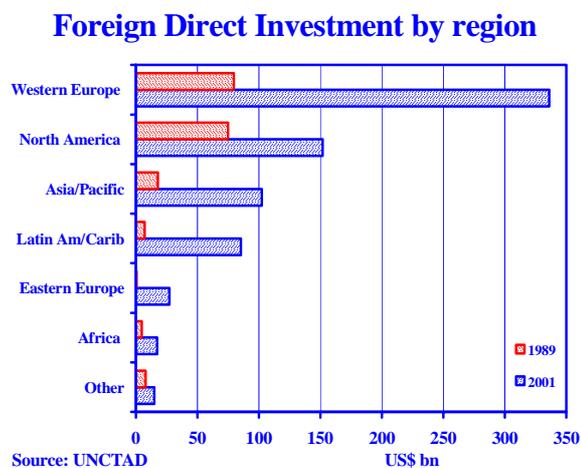
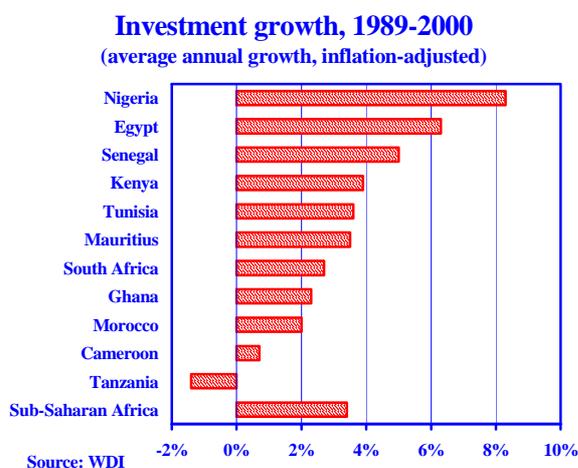
GDP per capita in Africa, 2002
(US\$, 1995 prices)



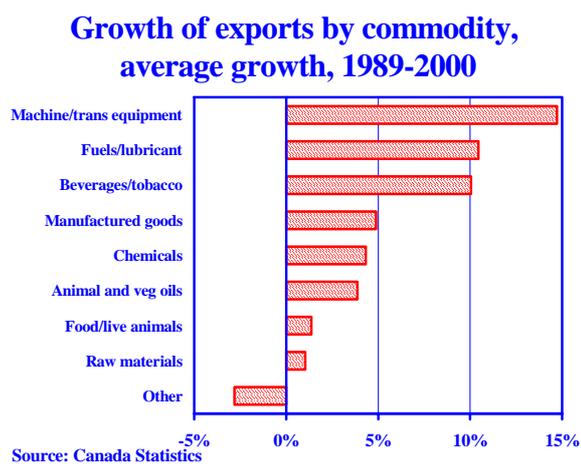
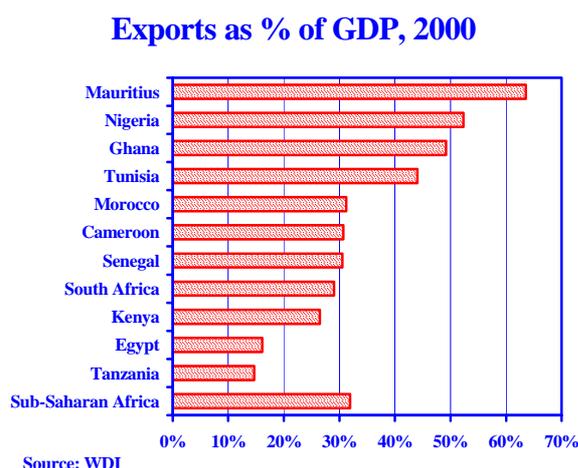
Source: WDI & OEF

GDP in the region tends to be volatile. This is largely the result of the combination of high levels of export concentration, extremely high indebtedness (e.g. Zambia, Tanzania, Rwanda, Burundi) and political and policy instability. The main transmission channel of external shocks into the internal economy is via international trade. Export revenues in African countries tend to be volatile due to recurrent and sharp fluctuations in the price of primary products. In addition, high debt service ratios make countries extremely vulnerable to movements in world interest rates. As for internal factors, recurrent armed conflicts (both between countries and civil wars), political upheaval, droughts and other natural disasters have taken a severe toll on economic growth and development in many countries. In particular, investor confidence and investment have been direct casualties of prolonged instability. As a result, despite its great growth potential and the availability of natural

resources, investment – both foreign and local – has been poor and erratic in the continent in recent decades.



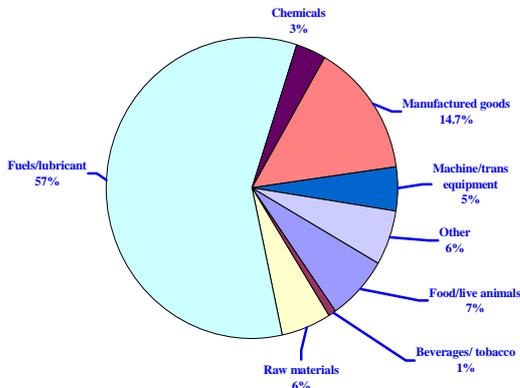
Africa shows a high degree of openness, partly the result of the adoption of a more outward-oriented development strategy in recent years. Trade in goods represented 96% of GDP in the Sub-Saharan region in 2000 compared to 76% a decade earlier. And the ratio of exports to GDP is over 30% in a number of countries (e.g. Mauritius, Nigeria and Ghana). The EU is the main market for African exporters, accounting for more than 40% of total exports in 2000, followed by the US with 20%. Intra-regional trade represented only 8% of the total - with South Africa as the leading exporter to the region with 21% of the total. The more dynamic destinations for African products are China, with 27.5% annual average growth during the period 1989-2000, and India, growing by 19.5% during the same period.



The EU is also the largest source of imports into Africa, accounting for more than 43% of the total in 2000 – with France alone responsible for 14% of imports to the region. Intra-regional imports represented 10% of total imports - with South Africa the major recipient of goods from the rest of the region - whereas the US was the origin of 9% of total imports. However, imports from non-traditional sources are growing faster. During the period 1989-2000,

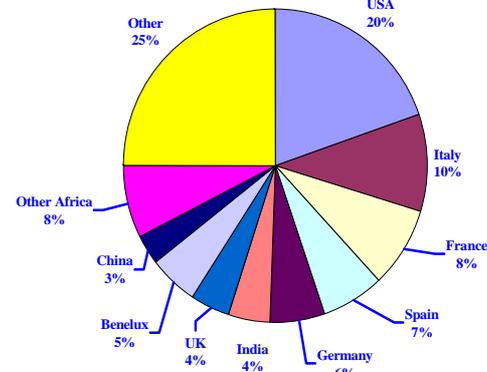
African imports from China grew at an annual average rate of 18% and imports from South Korea rose by 9% pa.

African exports by commodity, 2000



Source: Canada Statistics

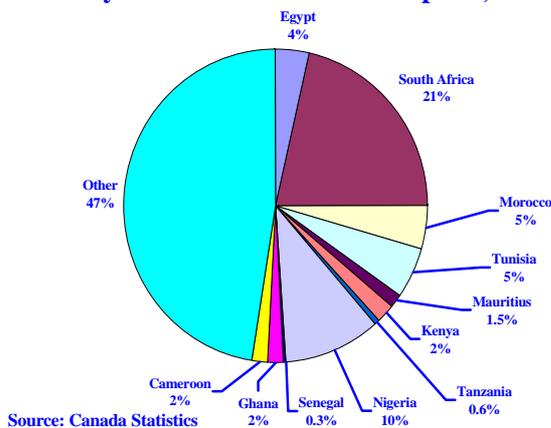
Main trading partners for African exports, 2000



Source: Canada Statistics

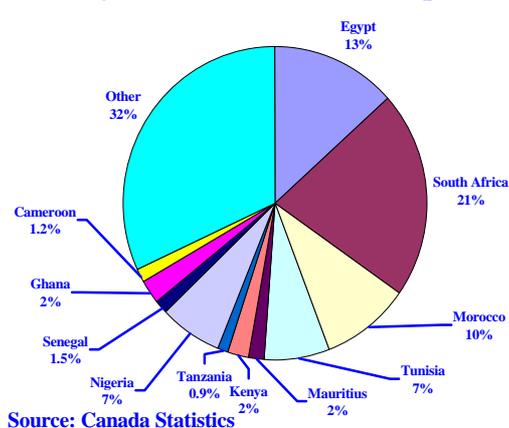
With the exception of South Africa, African countries remain to a large extent producers of raw materials, whether agricultural (such as coffee and cocoa), or mineral (such as crude oil and copper). Economic activity in countries in the Sub-Saharan region tends to be dominated by agricultural exports, while countries in North Africa rely on tourism and oil production. Crude oil and its derivatives accounted for 57% of Africa's exports in 2000 – boosted by the high prices recorded during the year - whereas agricultural products were responsible for about 14%. Because of the lack of well-developed internal markets and the high level of export concentration, African economies are highly exposed to movements in their terms of trade with a direct and destabilising impact on their national income.

Country shares in total African exports, 2000



Source: Canada Statistics

Country shares in total African imports, 2000



Source: Canada Statistics

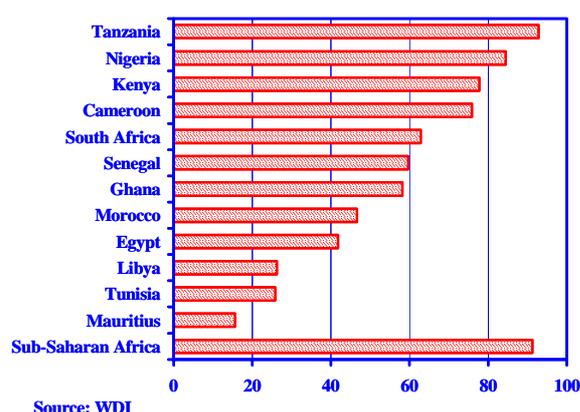
2. Challenges to development in the continent

Poverty is endemic in the continent. According to UNCTAD (2002a) estimates during the period 1995-1999, 87.5% of the population in African LDCs live on less than US\$2 a day, and 65% live in extreme poverty (i.e. on less than one dollar a day). This is in marked contrast to the situation in industrialised countries, where the poorest 10% of the population have an average consumption per head of about US\$13 per day. Although poverty has worsened in most countries in the region during the last two decades, there is a group of African countries (Cape Verde, Burkina Faso, Mauritania and Uganda) that have shown persistent poverty reduction over this period, and some improvement was achieved during the 1990s in Benin, Gambia, Liberia, Mozambique and Tanzania.

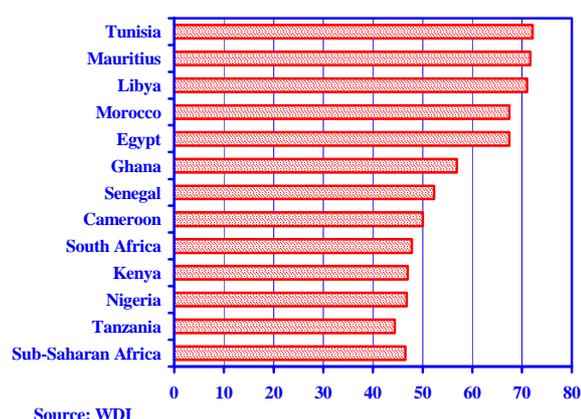
Sub-Saharan Africa has one of the poorest records in terms of health expenditure among the world regions. Health expenditure per head averaged just US\$41 a year during the second half of the 1990s (compared to US\$2,029 in Europe) and health expenditure averaged only 4.9% of GDP (9.1% in Europe). Moreover, access to sanitation facilities remains very poor in rural areas of Sub-Saharan Africa, benefiting only 41% of the population living in those areas (WDI, 2002).

Africa's poverty and poor sanitation is reflected in low life expectancy and high infant mortality rates. Life expectancy for an average person living in Sub-Saharan African was 47 years in 2000 (compared to 48 years in 1980), by far the lowest value of life expectancy among the world regions. However, there are important exceptions. In Tunisia, Mauritius, Morocco, Libya and Egypt life expectancy in 2000 was above 65 years. Meanwhile, infant mortality in 2000 was at 91 per 1,000 live births, a dismal figure (although it is at least an improvement over the 116 recorded in 1980).

Mortality rate, infant (per 1,000 live births)

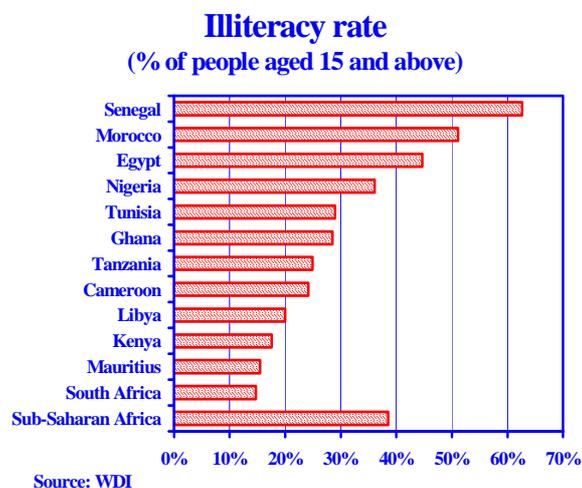
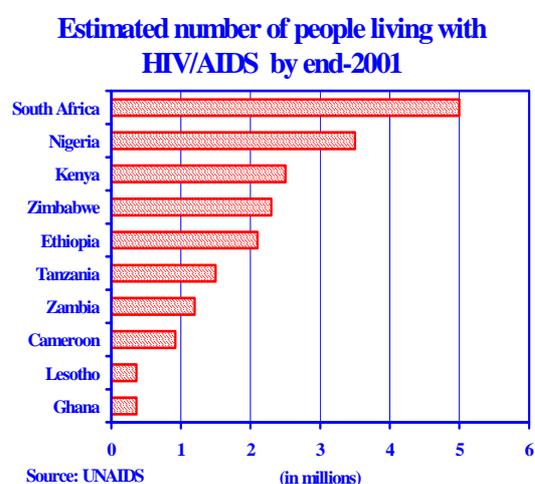


Life expectancy at birth (years)



AIDS poses an enormous public health, economic and social challenge to Africa. HIV/AIDS is the leading cause of death in Sub-Saharan Africa. It is estimated that in 1999 8.4% of the adult population in the region were HIV positive, and the percentage is most likely to have risen since. The scale of the HIV/AIDS problem in Africa has no parallel (e.g. the prevalence of HIV in the world's adult population was estimated at 1% in 1999), with the aggravation that in many countries about half of those infected are in the age group 15-24. And there are countries on the continent where the disease is threatening to decimate a large part of the

population and cripple prospects for development. For instance, HIV affects 20% or more of the adult populations in South Africa, Zimbabwe, Zambia, Swaziland, Namibia, Lesotho and Botswana.



Together with high health risk factors, deficiencies in human capital are a second major obstacle to development in the continent. In 2000 the adult illiteracy rate in Sub-Saharan Africa was one of the highest among the world regions. The percentage of adult illiteracy (ages 15 and over) was close to 40% in 2000, while the youth illiteracy rate reached 22% in the same year. And prospects are not looking good. Figures available during the 1990s indicate that just over 50% of those children enrolled in primary education finished it (WDI, 2002).

In the current situation of generalised and extreme poverty in Africa, sustained economic growth and increases in consumption per capita can have a particularly large effect in reducing poverty levels. However, the widespread poverty is itself a major obstacle to the required economic transformation and growth, creating a poverty trap. The main policy challenge to a number of African countries is to put an end to a situation of economic stagnation and poverty. It is the message of this report that the expansion of air services in the continent, and the promotion of more diversified external trade and tourism sectors, offer an opportunity to put in motion a virtuous cycle based on economic growth and sustainable development.

II. AIR SERVICES IN AFRICA

Key Points

Air services are key to facilitate the development of a more diversified export base and tourism in Africa. However, the current situation is one of under-investment and underdevelopment, particularly in domestic air transport.

Main features:

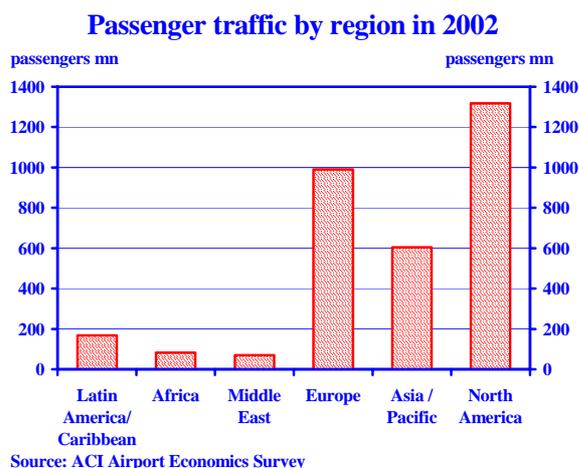
- Africa is the smallest region for air services in the world, reflecting its low income and lack of air transport infrastructure.
- African airports recorded a total movement of 83.2 million passengers in 2002.
- Nearly half of the passengers travelling by air in Africa during 2001 were on international flights. There is a relatively low level of development of the domestic market.
- The 10 biggest national markets in 2001 accounted for 70% of the total number of passengers travelling by air and 90% of cargo flights.
- African airborne exports to European markets have increased significantly during the period 1995-2001. However, most of the air cargo traffic is concentrated in only a few countries.
- Total employment at airport sites amounted to 150,000 employees in the Africa/Middle East region in 2001.

Airports are essential to the growth and functioning of air transport services. In many African states, more than elsewhere in the world, inefficiencies at the level of airports and air transport coupled with limited competition in the air market are making market access both difficult and expensive. In addition, the safety of airlines, airports and air routes in Africa is a major source of concern, particularly in view of the further expansion of markets.

Air services are key to facilitating the development of a more diversified export base and increased tourism in Africa. Currently, despite significant improvements in those countries adopting an export-led growth strategy, the general situation is one of under-investment and underdevelopment, particularly in domestic air transport. The low level of demand for air services in Africa is also reflected in the level of employment and investment at airports.

1. Main features of African air services

Africa is the smallest region for air services in the world, reflecting its low income and lack of air transport infrastructure. A number of statistics show the lack of development of aviation in the continent. For instance, the revenue per passenger kilometre (RPKs) on African traffic (including both intra-Africa and inter-continental routes) represented only 4.1% of the world total in 2002 (Boeing, 2003), similar to its share of the total number of international passengers carried in 2001. Moreover, according to preliminary figures published by the Airports Council International (2003) the number of passengers carried, both domestic and international, in Africa during 2002 was 83.2 million (up 1.5% on the previous year), compared to 168.3 million in Latin America and the Caribbean (down 4.9%) and 604.7 million in Asia and the Pacific region (up 5.6%).



Inter-regional air traffic flows (annual average growth rate, in %)			
	1994-00	1994-02	Share in 2002
Africa-Far East	6.0	4.6	0.1
Africa-Middle East	5.1	4.3	0.3
Europe-Africa	7.5	5.9	1.1
Intra-Africa	3.7	3.9	1.7
Intra-Europe	7.2	4.7	20.2
Intra-Far East	4.9	4.5	23.6
Intra-North America	2.0	0.1	34.4
North-Atlantic	7.0	3.4	2.5
World	4.2	2.6	100

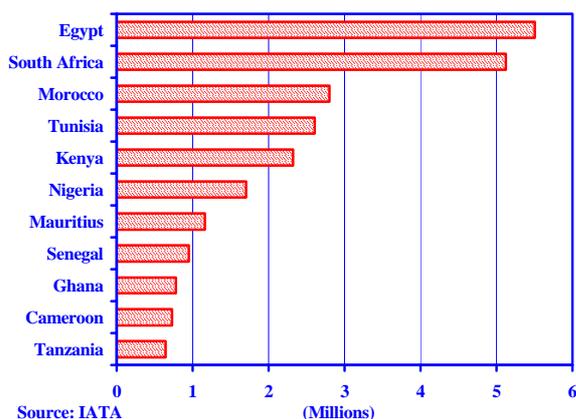
Air traffic is measured in terms of airlines seating capacity
Source: OAG

Recent trends in airline seating capacity highlight the relatively low growth of intra-Africa traffic relative to other world regions, suggesting that there are missing air links inside Africa. For example, air traffic in the continent has grown at a lower rate than intra-Europe traffic despite the fact that African flows have a much lower base (i.e. the market is much less mature). Airflows among European countries grew at an average annual rate of 4.7% during the period 1994-2002, compared to 3.9% growth among African countries. And the contrast is more pronounced after excluding the disruption experienced by the air industry in 2001 and 2002: during the period 1994-2000 intra-Europe air capacity expanded by 7.2% compared to 3.7% in intra-Africa traffic.

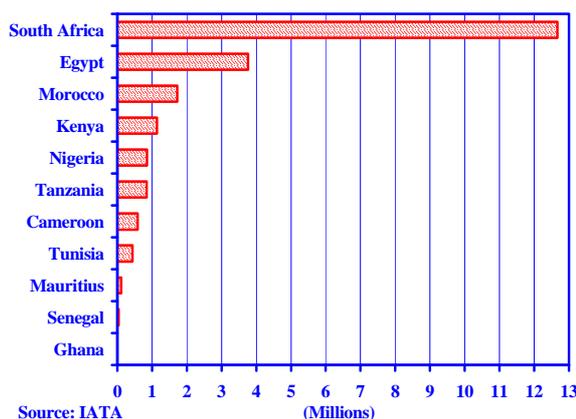
However, aviation is the main transport mode in international flows in Africa and its relative importance is increasing. According to the World Tourism Organization (2002b), air transport accounted for 51% of total international arrivals in Africa in 2000 (compared to 46% in 1990), while road transport accounted for 37%. During the 1990s the use of air transport has increased at an annual average rate of 7.2%, almost double the use of road transport (up 4.4% per annum). Moreover, the relative importance of airborne arrivals in Africa by the end of the 1990s was similar to that in Latin America and the Caribbean (55% of the total in 1999) and above the world average (38% in 2000). However, the number of passengers arriving in Africa by air in 2000 (13.8 million) was still low when compared to other world regions. For example, the number of international tourist arriving by air in Latin America and the Caribbean was 24.9 million in 1999 (ATAG, 2002b).

As with many other aspects of economic performance in the continent, relatively few countries account for most air traffic flows. Thus, the 10 biggest national markets in 2001 accounted for 70% of the total number of passengers travelling by air and 90% of cargo flights. The biggest national markets for passenger travelling by air are South Africa (160,000 passenger flights in 2001, of which 19% were international), Egypt (53,300, 51% international) and Morocco (40,800 flights, 54% international). The high level of concentration in traffic flows is another indicator of the need to improve air services and airport infrastructure across the continent.

Number of international seats, 2001



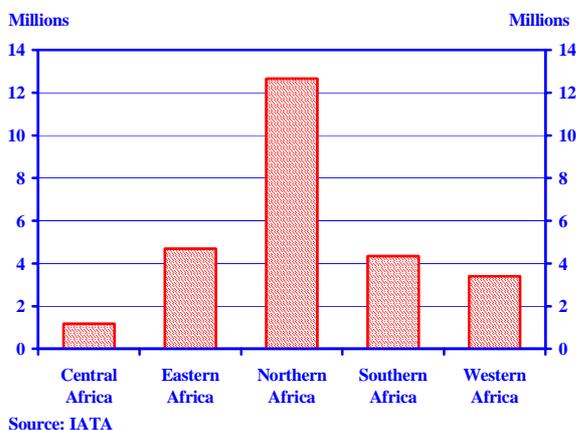
Number of domestic seats, 2001



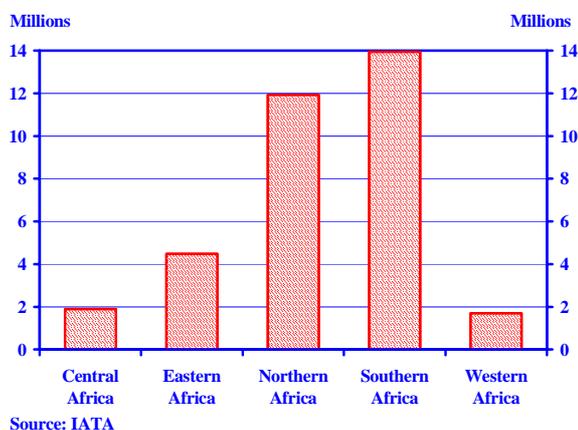
The domestic aviation markets in the continent (i.e. air traffic within a country) are, except for in South Africa, particularly poorly developed. Although the number of seats on domestic flights represented 56% of the African total in 2001, South Africa alone was responsible for nearly 40% of the total of seats on domestic flights in the continent. Moreover, the combined domestic traffic flows in South Africa, Egypt and Morocco accounted for 54% of the continent's total seats on domestic flights and 42% of the total number of flights covering domestic routes in 2001.

And recent trends have reinforced the level of concentration of air traffic in Africa, both in domestic and international air traffic. For example, the number of intra-regional flights (including flights within a country and between countries in a sub-region) grew particularly strongly during 1994-2001 in North Africa (6.1% per year), East Africa (5.3%) and Southern Africa (5.1%). In contrast, the market for air flights in Central and West Africa remained stagnant during the period, with intra-regional flights expanding at an annual average rate of 1.6% and 0.8% respectively. The lack of air links in the Central and Western regions is at odds with the presence of a number of landlocked countries (e.g. Democratic Republic of Congo, Central African Republic, Chad, Burundi and Rwanda), where aviation is needed most.

Number of international seats, 2001



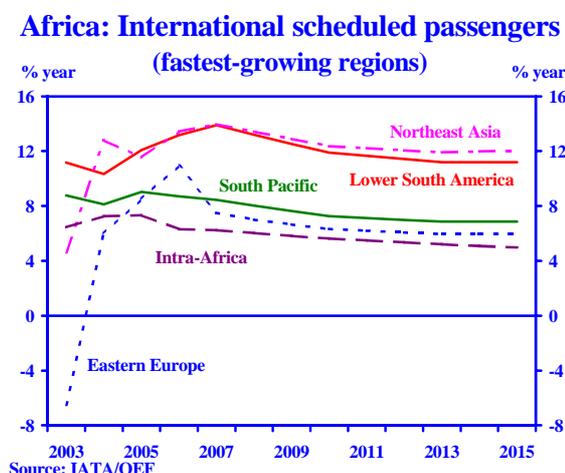
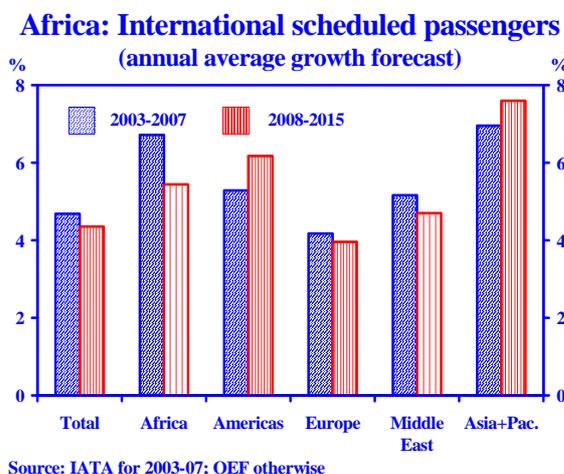
Number of intra-regional seats, 2001



Meanwhile, Southern Africa showed the fastest growth in international passenger flights (including inter-continental traffic and flights between sub-regions) during 1994-2001, with an average annual rate of 10.4%, followed by Central Africa (8.3%) and East Africa (7.4%). By contrast, Western and Central Africa are still lagging significantly behind, with recent high growth rates largely due to a very low starting point. For example, in 2001 Central Africa accounted for only 6% of the African total of international flights, whereas Western Africa was responsible for 17%.

2. Air passenger traffic forecasts

In this section we present forecasts for the growth in international scheduled air passenger traffic between Africa and the main world regions. (IATA provided the forecast for the short and medium term, covering 2003-2007, and OEF has extended this to 2015.) The forecast for the continent as a whole shows that air traffic with the Asia-Pacific region and that within Africa itself are expected to be the most dynamic markets for international air passengers in the medium term, growing at an average annual rate of 7.0% and 6.7% respectively. This is consistent with recent trends and the high growth potential of those markets, particularly of intra-African routes. The more mature markets of the European routes (accounting for 72% of total international scheduled passengers in 2002) and the Middle East (responsible for 11%) are expected to expand at average annual rates of 4.2% and 5.2% respectively during the next five years. Meanwhile, traffic flows with the Americas are forecast to grow at average annual rates of 5.3%, mostly reflecting a low base.



According to the forecast, air passenger flows to and from countries in Northern Asia and the South Pacific will be leading the expansion of passenger volumes in the Asia-Pacific region during the period 2003-2015, growing at average annual rates of 11.9% and 7.7% respectively. And, markets in lower South America and Eastern Europe will experience particularly high rates of growth during the same period (11.9% and 6.0% respectively). Southern Africa is expected to continue to lead the way in intra-African air passenger volumes, growing at a healthy average annual rate of 6.0% over the next twelve years. But despite significant differences in the growth forecast of international air traffic to and from Africa, air passenger volumes with Europe are still expected to account for about 70% of the

total by the end of 2015. However, intra-African flows are likely to displace the Middle East as the second most important source of demand for international scheduled flights.

Looking at sub-regions in Africa during the period 2003-15, the combined Central and Western regions will experience their most vigorous source of growth in international scheduled air traffic from the intra-African market (an annual average rate of 10.5%). This is consistent with the current state of underdevelopment of air services in this sub-region and the fact that a number of countries in this group are landlocked. Meanwhile, flows with the Asia/Pacific region are expected to become more important for Southern and Northern Africa, expanding at average annual rates of 8.5% and 6.5% respectively over the next twelve years. Air passengers to and from the Middle East are forecast to provide the most dynamic route for aviation in Eastern Africa, with average growth of 7.9% per year.

International scheduled passengers: 2003-2015 (annual average growth rates)					
	Africa	Europe	Americas	Asia/Pacific	Middle East
Central/Western Africa	10.5	3.4	6.0	<i>n.a.</i>	6.6
Eastern Africa	5.0	4.2	<i>n.a.</i>	4.8	7.9
Northern Africa	5.6	4.2	5.7	6.5	4.0
Southern Africa	6.0	4.1	5.8	8.5	5.5
Africa	5.9	4.0	5.8	7.3	4.9

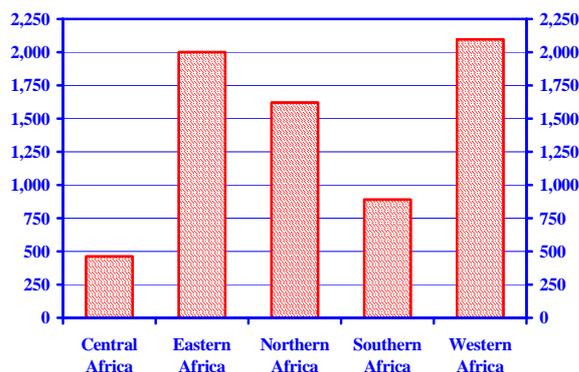
Source: IATA for 2003-2007, OEF thereafter.

3. Cargo air traffic in Africa

Air cargo traffic carried to and from Africa totalled 1 million metric tonnes in 2002 (up 1.8% on the previous year), the lowest among the world regions, accounting for only 1.6% of the world total (ACI, 2003). Air trade among African countries was estimated at 66 thousand tonnes in 2001, only 6.4% of the overall African cargo market (Boeing, 2002). The low level, both in absolute and relative terms, of the intra-Africa cargo traffic illustrates an underdeveloped intra-regional trade pattern and deficiencies in air infrastructure.

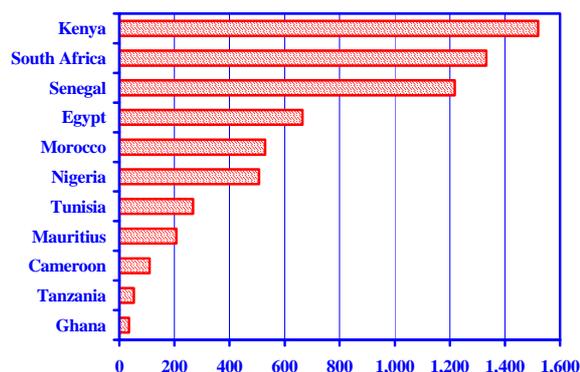
Western and Eastern Africa are the sub-regions that recorded the highest number of international cargo flights in 2001 (including inter-continental flights and flights between sub-regions in Africa), with their combined traffic flows accounting for nearly 60% of the African total. Flights between countries in a sub-region are excluded from these data, which significantly lowers the figure for Southern Africa. Compared to the international market, the intra-regional cargo market (including flights within a country and between countries in a sub-region) saw little activity in 2001, with most of it concentrated in Central Africa. This is a direct consequence of the landlocked geography of this region that precludes the use of maritime transport - the most common means used for freight transport.

Number of international cargo flights, 2001



Source: IATA

Number of international cargo flights, 2001

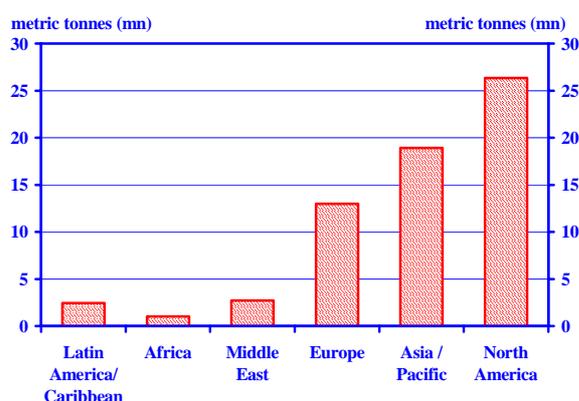


Source: IATA

The dominant economies in the overall African air trade are Egypt, Algeria and Morocco in North Africa and Kenya, Senegal, Nigeria and South Africa in the Sub-Saharan region. Kenya was the most important single market for international cargo flights (i.e. inter-continental traffic and flights to other African countries) with 1,531 flights in 2001, followed closely by South Africa with 1,333 flights and Senegal with 1,218 flights. Again, as with the flow of international passenger traffic, most of the cargo traffic is concentrated in a few countries, with the top five countries accounting for more than 70% of Africa's total.

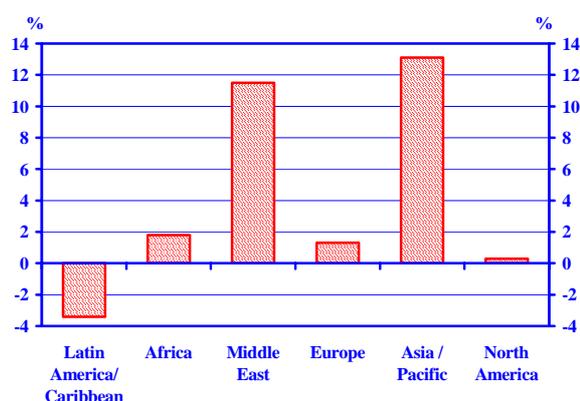
Out of the inter-continental cargo traffic in Africa, 65% related to trade with Europe and 14% to trade with the Middle East. The dominance of Europe is explained by its proximity to Africa and by long-standing historical and investment ties. Air exports from Africa largely consist of perishable goods (fruits, vegetables, cut flowers and fish) and apparel, textiles and fabrics. Air imports are dominated by computers and peripherals, telecommunication and transport hardware and pharmaceutical goods.

Air cargo traffic by region in 2002



Source: ACI Airport Economics Survey

Air cargo traffic trend by region, 2002/2001



Source: ACI Airport Economics Survey

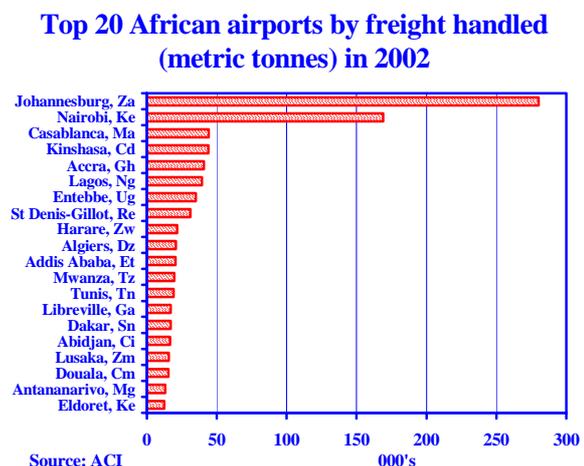
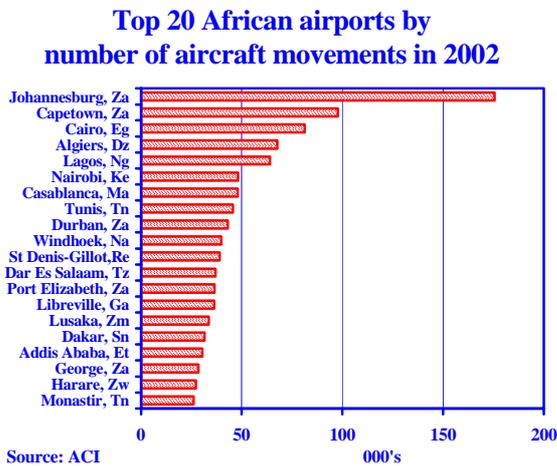
The penetration of African airborne exports in European markets increased significantly during the period 1995-2001, with average annual growth above 5%. Moreover, it is expected to expand by more than 5% a year over the next decade (Boeing, 2002). Although this strong

growth is partly a reflection of the low base level of airborne exports, it is indicative of the high potential for the expansion of the air industry.

4. Principal airports in the continent

Because most of the air traffic in Africa is concentrated in a few countries, the performance of a few large airports has a disproportionate effect on the aggregate results for the continent as a whole. For example, Airports Company South Africa (ACSA) served about one-seventh of the traffic of the entire region in 2001, and the international airports in South Africa, Egypt, Morocco and Tunisia together accounted for over 50% of total regional revenues in 2001, having a pronounced influence on the overall financial performance (ACI, 2002). In contrast with the good results in a few airports, the majority of the airports in the region do not generate enough traffic to be run on a commercial basis. But the cost of not having an airport, which would mean political and economic isolation for many countries – particularly those with poor ground transport systems – would be so high that government subsidies to airports are a social and economic necessity.

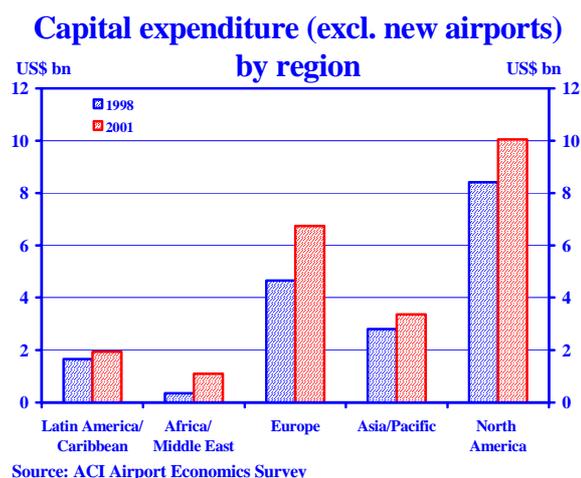
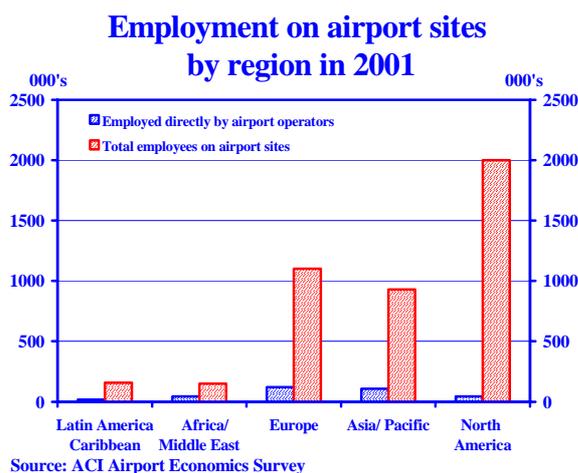
Johannesburg International Airport (JIA), with a transit of more than 11 million passengers a year - half of them international passengers, mostly from Europe and other African countries – and a movement of 280 metric tonnes of freight, is the leading airport in Africa for both passengers and cargo. It has become the first transport hub of Southern Africa and recently overtook Cairo as the continent’s largest and busiest airport. Boosted by the liberalisation of the South African air market since 1996, the number of airlines operating at JIA rose from 23 in 1996 to 72 in 2001, before falling to 44 in 2002 - partly due to the difficulties in global aviation.



During the period 1998-2002, Nairobi (Kenya), Cape Town and Johannesburg (South Africa) and Hurgada and Sharm El Shalam (Egypt) have seen the greatest increase in the number of passenger movements. The dynamism of these airports is largely the result of the growth in tourism. The main airports after Johannesburg for freight are Nairobi in Kenya and Accra Kotoka airport in Ghana. The expansion of the Kotoka airport is key in supporting Ghana’s strategy to become a hub in West Africa for trade in goods and services and a free processing area (see Case Study 1, p.36).

Capital expenditure (excluding investment in new airports) in the Africa/Middle East region totalled US\$1.1 billion in 2001, more than three times the amount recorded in 1998. Currently, some countries are undertaking the expansion of their airports and ATC in order to meet the projected increase in demand for air services. In particular, South Africa is investing nearly US\$800 million in upgrading its airport facilities at Johannesburg and Cape Town, and a project of a similar amount is being carried out in Khartoum (Sudan). Senegal is also embarking on a major modernisation of its airport at Dakar (ACI, 2002). However, despite the significant increase in investment in the modernisation of airports and ATC in recent years, capital expenditure in Africa is still low when compared to other world regions. For example, Latin America and the Caribbean spent US\$1.9 billion in expanding airport capacity in 2001 and Asia and the Pacific region US\$3.4 billion.

Finally, total employment at airport sites (including those working for airlines) amounted to 150,000 employees in the Africa/Middle East region in 2001 - of which 44,000 were directly employed by airport operators. Although this is a significant source of employment, and comparable with the employment generated at airport sites in Latin America and the Caribbean (158,000 in 2001), there is still ample room to increase aviation's contribution to employment in the continent.



5. Obstacles to the expansion of air services

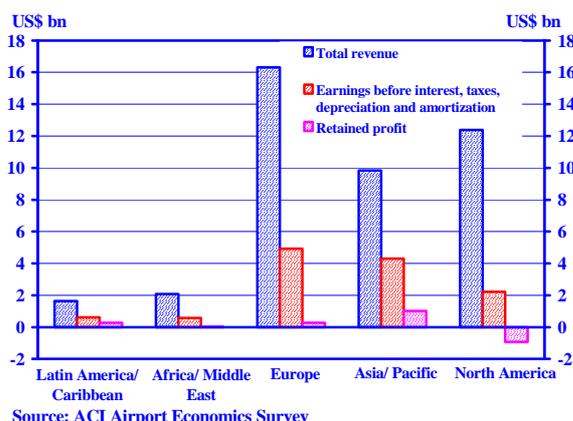
Some of the main reasons for the small number of international air arrivals in Africa when compared to other world regions (4% of the world total in 2000) are to be found in air infrastructure shortages and limited competition in the air market, making access both difficult and expensive. The vast territorial size of a number of African countries means that air transport has an advantage over other transport modes, especially for tourist flows and perishable agricultural products. However, the reality is that although the use of air services has gradually increased during the last decade, domestic air markets, with few exceptions, show a very low level of development, and international flights remain restricted by anti-competitive regulation across the continent.

The limited number of regional hubs and the lack of a well-developed network of domestic airports is a serious limitation to the opening of tourist resorts located in remote areas or in places far from the main regional hub or international airport. Deficiencies in air services are particularly acute in Central and Western Africa, and there is little evidence of improvement during the last ten years. South Africa and, to some extent, Nigeria are the only countries with a significant domestic air market, but elsewhere there is very little intermodal competition and road transport dominates both passenger and cargo transport (Goldstein, 1999).

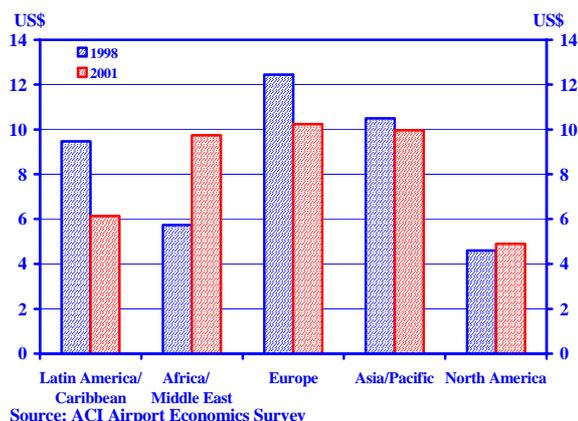
Air transport costs and flight fares in Africa are above the world norm, inhibiting the development of tourism in the continent and exports with high value added. According to Airports Council International (2002), expenses per passenger at African airports have increased in recent years (from US\$5.9 in 1997 to US\$9.7 in 2001) and are high by international standards (the world average was US\$7.6 in 2001). There is also evidence that fuel tends to be significantly more expensive in Africa than in other regions. For instance, according to the African Civil Aviation Commission (see AFCAC-WTO, 2001) fuel prices are often 40% to 50% higher in Africa than in Europe. High and rising costs of airport services have a direct impact on the cost of travelling to the region. Moreover, an over-regulated air market means that fares remain high and passengers' choices of destinations and flight frequency are reduced.

In the last five years there has been a move towards the liberalisation of air markets and the privatisation of airlines and airports in some African countries. For instance, in South Africa the opening up of international and domestic markets has resulted in increased competition and modernisation of air infrastructure, and Mauritius and Kenya have also made important steps in the privatisation process and the development of their domestic and international air sectors. However, in general, progress in the area of reform and competition has been slow and the state ownership of flag carriers, operating in a highly protected environment, remains the norm in the continent. A less protected air transport market is particularly important for improving prospects for the tourism sector across the continent.

Financial results by region in 2001



Expenses per passenger by region



According to preliminary results of a survey on training opportunities in Africa conducted by IATA this year, improved commercial performance and cost management, together with safety and security, are considered as high priority issues by the majority of African carriers.

There is also a definite perception that lack of skill at management and operational levels is a significant inhibitor of goal attainment. Although a number of factors affecting safety are outside the direct control of airlines, one finding of the survey is that training has a significant role to play in improving standards in Africa.

The development of charter flights to destinations in Africa is still in its infancy. Leaving aside the tourism-based countries in North Africa, in general few charter flights are available, with poor intra-regional flight connections and higher prices than to destinations in other developing countries. South Africa, Kenya and, to some extent, Tanzania are the Sub-Saharan countries best served by charter flights, especially from Europe and India, but even in these countries there is ample room for improvement and further expansion of services. As a positive development, as part of the combined efforts of the World Tourist Organization and the African Civil Aviation Commission, there are on-going negotiations with tour operators and their charter airlines to promote the creation of new tourist destinations to sites that are not easily accessible from the African international airports (AFCAC-WTO, 2001).

Safety of airlines, airports and air routes in Africa remains a major source of concern and an obstacle to the healthy development of tourism and, in general, to the integration of African countries into the world economy (see also section on the environment, p. 50). In particular, the modernisation of air traffic control systems is key to improving efficient operation and safety of airflows. The “Safe Skies for Africa” initiative, advanced by the US government in 1998, seeks to improve aviation safety and security in the continent (to meet ICAO safety standards) and to complement US efforts to conclude open skies agreements with a number of African countries - already in effect in ten countries including Kenya, Tanzania and Ghana. In addition, several African airlines are associated members of major world airline alliances and other carriers participate in regional code sharing and joint purchasing alliances such as those between several North African carriers.

There is a history of airline cooperation in Africa. The best known emblem of African unity was Air Afrique which was established in 1961 by the treaty of Yaounde, signed by eleven Francophone countries (Benin, Burkina, Faso, Cameroon, the Central African Republic, Chad, Congo, Gabon, Ivory Coast, Mauritania, Niger and Senegal). Air Afrique’s capital was divided among the signatory states (66%) and Sodetraf (34%), a branch of UTA, a private French airline. Each country gave Air Afrique an exclusive concession on international traffic while keeping their autonomy on domestic routes. Air Afrique, until its termination in 2002, suffered from problems typical for African carriers (high fuel costs, charges and taxes, and high insurance premiums). It was constantly under-capitalised and subject to unnecessary government interference. For example, the company suffered from the political requirement to operate uneconomic multi-stop routes rather than direct flights. If such public service obligations are required, governments should give adequate compensation to the airline.

In contrast, there are now auspicious signs of consolidation within Africa. For instance, Royal Air Maroc’s 51% share in Air Senegal International indicates that African states are ready to stay at arm’s length with respect to their national carrier while maintaining air transport services. Joint purchasing alliances, such as those between several North African carriers, are other examples where better economies of scale, route synergies and reduction in costs are being sought.

This report predicts that African carriers will move more aggressively into the African market provided that economies open up further and that infrastructure is put in place to

accommodate growth in air services. Intra-African routes are forecasted to outpace the growth of routes between Africa/Middle East, Africa/Europe and Africa/US within the next 15 years (see pages 20 and 21).

Ethiopian Airlines (EAL), the carrier with one of the largest intra-African networks, is perhaps a frontrunner in this respect. EAL is also one of the profitable African airlines together with Royal Air Maroc, Kenya Airways and South African Airways. EAL benefits from the nature of its home market with long distances between national cities and an underdeveloped road system but it is also operating in one of the poorest countries in Africa (GDP per-capita in Ethiopia in 2001 was only 22% of the average figure for the Sub-Saharan region). The government-owned airline was created in 1946. In 1991 it served 21 cities in 18 African countries. New destinations are added to its intra-African network at competitive terms (e.g. Brazzaville in the Republic of Congo and Kano in Nigeria three years ago). EAL has also an excellent reputation because of its outstanding safety record.

The emergence of a lucrative intra-African market will trigger a trend towards new alliances and acquisitions. For instance, South African Airways recently acquired a 49% share of Air Tanzania. In the case of Kenya Airways the Nairobi government chose to restructure the airline and sell it to private investors after 17 years of accumulated losses. Dutch carrier KLM now owns 26% of Kenya Airways, the Kenyan government 23 % and the rest of the shares are traded on the Nairobi and Uganda stock exchange. Air Mauritius is another example of successful partnership between the public and the private sector. The government in Mauritius controls 51% of the airline and the remaining shares are hold by Rogers, a local company, British Airways, Air France and Air India.

With respect to international routes outside the African continent, Africa carriers are not yet participating directly in any of the global alliances but a host of bilateral agreements with members of those alliances exists, some of them similar to an alliance proper (e.g. Royal Air Maroc or Tunisair with Air France). African carriers have also entered into regional code share links or other commercial agreements, suggesting that they are fully part of the global transport network. This development is not unusual and still reflects the current state of inter-carrier cooperation worldwide. A survey conducted by Airline Business on airline alliances (see Annex B) indicates that the bulk of inter-carrier agreements continue to be on the basis of bilateral agreements. From 370 code-share agreements surveyed, only 20% are between alliances. However, the concept is expanding and some African carriers may therefore contemplate the membership of an alliance, mainly to benefit from cost reductions and common facilities in distribution and operation.

While most airlines have an optimistic view regarding market developments, they are facing a number of geopolitical strategic issues: problems of scale that tend to make them uncompetitive; partial open skies environment; lack of commercial freedom resulting from government intervention and unions influence; infrastructure and equipment constraints; old leadership structures; shortages of finance; limited focus on human resources development; a high average fleet age - the highest in the world. These are the key strategic issues identified in a recent Training Needs Survey conducted by IATA and its International Airline Training Fund (IATF). The survey's findings show that 3,600 airline staff are in urgent need for training, with emphasis on leadership and management development as well as on professional and basic skills.

III. CONTRIBUTION OF AVIATION TO ECONOMIC GROWTH AND POVERTY ALLEVIATION

Key Points

Transport infrastructure is a necessary condition for economic growth and, although in itself it cannot reduce poverty, it has a key role to play as a facilitator of and complement to policies that aim to improve living standards.

The air service industry is particularly important for countries that adopt an outward-oriented development strategy, including the promotion of international tourism. It can also support efforts to alleviate poverty.

Foreign direct investment in the continent has been stagnant and highly concentrated in a handful of countries. African countries attract less FDI than might be expected on the basis of relative GDP.

One major difficulty for poor countries in attracting private investment is that they tend to have a relatively high cost of capital. Private capital is accordingly less likely to flow into those countries where infrastructure shortages are most acute - a vicious cycle that hinders development and perpetuates poverty.

In recent years the World Bank has stressed the poverty reduction potential of transport infrastructure in Africa and other developing regions (Leautier, 2001). A key message of current research focusing on LDCs is that transport infrastructure is a necessary condition for economic growth and that, although in itself it cannot reduce poverty, it has a key role to play as a facilitator of and complement to policies that improve living standards. The development of infrastructure in general, and air services in particular, is paramount for the future of African countries as they embark on closer integration with the world economy and increase their efforts to improve living standards.

Broadly speaking, the expansion of air services and other forms of transport infrastructure is expected to contribute to poverty alleviation directly by improving access to services, increasing personal mobility and lowering transport costs, and indirectly through its effects on economic growth, efficiency and employment creation. Improvements in transport facilities raise living standards, as access to basic infrastructure services (clean water, electricity, health and education) is an essential component of welfare. Moreover, most programmes that target directly the basic needs of the poor depend on transport as a complementary input for their effective delivery. For the poor, the lack of affordable transport deprives them of the opportunity to take advantage of job opportunities and essential social services. And an adequate transport network reduces the risk of famine by facilitating the movement of food from surplus to deficit areas (Gannon & Liu, 1997).

Investment in transport infrastructure leads to lower transport costs, both for freight and passenger services. That in turn should be reflected in lower market prices for final products. These savings, together with a widening of the market, benefit all income groups. In particular, more efficient rural transport could bring significant benefits to the urban poor in

terms of lower food prices. And the construction and maintenance of transport facilities tends to demand relatively unskilled labour, providing a source of employment for the poor.

Apart from the direct impact on welfare already mentioned, a major contribution of transport investment works in a more indirect and broad channel through economic growth and improved efficiency in resource allocation. In general, it is expected that economic growth will benefit the poor through higher income levels, employment generation and expansion of economic opportunities, although there can be lags before sustained growth results in a significant decline in levels of absolute poverty. In a study dealing with the responsiveness of poverty to economic growth in Sub-Saharan Africa, Guillaumont et al (1999) estimate that were the region to grow at an annual average of 4% during the next decade (which is close to our forecast for the continent as a whole), the number of poor people in rural areas would drop by more than 20 percentage points, to 35% of the population, whereas urban poverty would see a smaller reduction of about 10 percentage points, also to 35%. These estimates show the paramount importance of economic growth for poverty alleviation across the continent.

During the early stages of development, the expansion of transport infrastructure plays a leading role by stimulating economic growth through its market widening effect. For instance, the building of railways during the nineteenth century led to an unprecedented expansion of economic opportunities in the industrialised countries throughout the initial stages of the industrial revolution. As the economy matures, transport investment takes on a complementary role, supporting the growth in demand and the gradual expansion of the productive sector of the economy.

Better transport services facilitate interactions between productive activities and the promotion of trade at both a regional and international level. Investment in transport reduces the cost of assembling inputs during the production process and reduces the costs of delivering goods and services, improving a country's competitiveness. This is particularly important for LDCs, where poor transport infrastructure and excessive transport costs often generate more significant barriers to trade than import tariffs and quotas (de Castro, 1996).

Empirical cross-country studies confirm the presence of strong links between transport and economic growth and general welfare. For example, Owen (1987) found a positive correlation between GNP and the volume of passenger and freight transport, and, more recently, Easterly and Rebelo (1993) found that investment in public infrastructure in transport and communications has a significant, positive effect on economic growth. Meanwhile, Collier and Gunning (1999) see deficiencies in infrastructure and high transaction costs in Africa as the main deterrents to growth. This evidence is consistent with the new vintage of growth models that incorporate explicitly the role of infrastructure in facilitating and supporting advances in productivity and living standards in the longer term (e.g. Barro & Sala-i-Martin, 1990).

However, there are few comprehensive empirical studies that measure separately the contribution that transport investment has made to a particular country's economic growth – let alone of its air services. A major reason lies in the methodological difficulties involved in measuring the capital stock of the transport sector. Largely for this reason, most of the empirical analyses have been done at a highly aggregated level using national or industry-wide variables (for example, total public capital investment). Another major obstacle in quantifying the gains associated with the expansion of transport infrastructure in a particular

country is that its contribution is widespread, and that it is mostly indirect and extended over a long period of time.

1. Air transport links with trade, tourism and inward investment

Although improving rural transport is a priority in the area of transport infrastructure in Africa, the contribution and potential of air transport to the continent's economic and social development should not be underestimated. The air service industry is particularly important for countries that adopt an outward-oriented development strategy, including the promotion of international tourism, and also can support efforts to alleviate poverty. Moreover, in large countries with difficult geography and long distances, air infrastructure offers an effective way of linking communities and making possible economic activity around the production of agricultural exports or tourism.

The development of commercial aviation is instrumental in reducing the cost of trade and movement of goods and people, attracting new investment to locations with good air transport links to the rest of the world. The experience of South-East Asia during the last four decades is one example of the benefits that the expansion of international trade can have in fostering economic growth, improving economic efficiency and making a significant contribution to poverty alleviation. These countries have based their rapid development on the export of manufactured goods by participating in globally integrated production and assembly chains where air transport plays a vital role.

The experience of Latin America also serves to illustrate the potential opportunities for African countries opened up by developing further their air infrastructure and deregulating their commercial aviation market. The availability of more efficient, competitive and reliable air transport in Latin America has supported the creation of businesses in the production of goods for new export markets (e.g. garments, microchips, flowers and fresh tropical fruit juice) and the promotion of tourism. The region's freight traffic experienced robust growth close to 6% per year over the period 1994-2000 when the deregulation of the air sector was under way (Boeing, 2002). The importance of airborne transport is higher in those countries most committed to an export-oriented strategy such as Chile and Colombia. In Chile 16% of the non-copper export value in 2000 was transported by air but only 2.8% by volume; and in Colombia airborne exports accounted for 35.6% by value compared to 1.3% by volume (ECLAC, 2000).

Better air services are especially important to landlocked countries in Central Africa, where air transport has obvious advantages over land and maritime transport in linking the domestic economy with world markets. Well-developed air services also support the creation of businesses where a rapid movement of goods and people is crucial. This is a positive development to help diversify the export base and lessen the reliance on commodities. It is estimated that in 2000, 40% of total manufactured exports worldwide were transported by air and that more than 1,600 million passengers were carried by the world's airlines (ATAG, 2000). Moreover, air transport provides the foundation for international tourism, with over half of all international tourists, excluding intra-European travel, travelling by air.

Although Africa still represents a small part of the global air travel industry, there are already clear examples of the benefits of air services to the opening up of economic opportunities in the continent. For example, South Africa stands out as the country leading the process of

export expansion, deregulation and privatisation of the air services sector. The country is one of the world's 30 largest markets both for cargo freight and for passenger traffic, and has the most sophisticated and extended air transport infrastructure in Africa (Goldstein, 1999). And in Kenya airborne exports of agricultural products (e.g. fresh vegetables and cut flowers), largely to Europe, already constitute one of the largest industries in the country and the second biggest earner of foreign exchange. Also worth noting is the implementation in Ghana of the Trade and Investment Gateway Project sponsored by the World Bank to attract a critical mass of export-oriented investors and to place the country as a hub in West Africa for trade and passengers flows (see Case Study 1, p.36). The plan envisages, among other initiatives, the creation of free-trade zones with labour-intensive export industries, deregulation of the air traffic sector and investments in the Kotoka International Airport to improve efficiency, security and safety.

No less importantly, investment in air services is key for the promotion of the tourist industry in Africa and, through this channel, has the potential to make a major contribution to economic growth and social sustainability (see section on tourism and sustainable development, p.37). Easy access to tourist destinations in terms of international transport and facilities is considered to be a prerequisite for the development of tourism. This includes an extended domestic air network, frequent flight schedules and linkages through hubs. In addition, tourism requires an efficient land transport system to open up new areas with potential to attract tourists (e.g. nature reserves and game parks), and basic services for emerging tourist resorts. The latter stimulates expansion and improvement in essential infrastructure, such as electricity and water sanitation. To the extent that the development of tourism (in particular ecotourism) is complementary to improving basic service infrastructure and greater access to rural and remote areas, investment in air transport can go hand in hand with poverty reduction efforts.

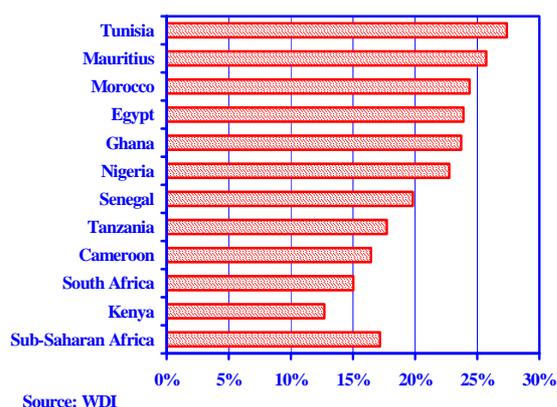
2. The increasing infrastructure gap in Africa

So far we have highlighted the potential that a well-developed transport infrastructure can have for improving welfare, attracting investment and fostering growth. But with some few exceptions, infrastructure provision in Africa is well below that in other developing regions. For example, in 1999 the consumption of electricity per capita in the Sub-Saharan region was 3 to 4 times lower than in Latin America and the Caribbean, and towards the end of the 1990s only 12% of roads were paved in Sub-Saharan Africa compared to 29% in Latin America/Caribbean (WDI, 2002). Moreover, in 2000 the number of aircraft departures in Sub-Saharan Africa was 5.3 times lower than in Latin America and the Caribbean. The exceptions are South Africa and countries that already have a well-established tourist industry, such as Tunisia, Morocco and Egypt. In general, the relative backwardness in infrastructure development is the result of a poor investment record across African countries in recent decades. In order for the continent to realise its growth potential there has to be a rapid and decisive reversal of this widening infrastructure gap compared to other regions in the world.

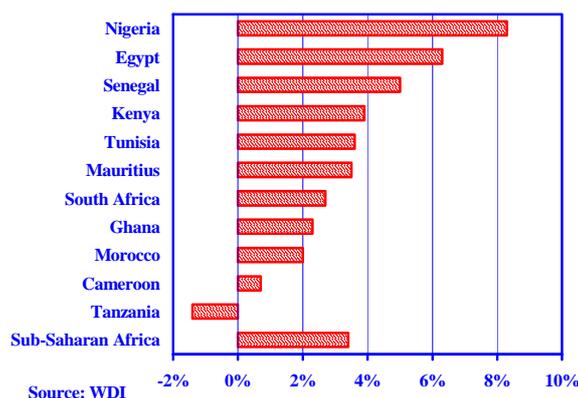
During the 1980s real investment in Sub-Saharan Africa fell at an annual rate of 3.9% compared to a 9.3% rise in the East Asia and Pacific region and 3.0% growth in the advanced economies. And during the 1990s, although investment in the Sub-Saharan region expanded at an average annual rate of 3.4%, it still lagged behind the pace of investment of other world regions. In the same period, East Asia and the Pacific region grew by an annual average of

5.9% and Latin America by 4.6%. The increase in the infrastructure gap is also manifested in relative terms. Total investment as a share of GDP in Sub-Saharan Africa has shown little change over the last two decades. It was, on average, 17% during the 1990s, similar to the share in the 1980s. And the proportion of output that was invested in Africa during the 1990s is much lower than the 28.7% in East Asia and the Pacific and the 19.9% in Latin America (WDI, 2002).

Gross capital formation (% of GDP), 2000



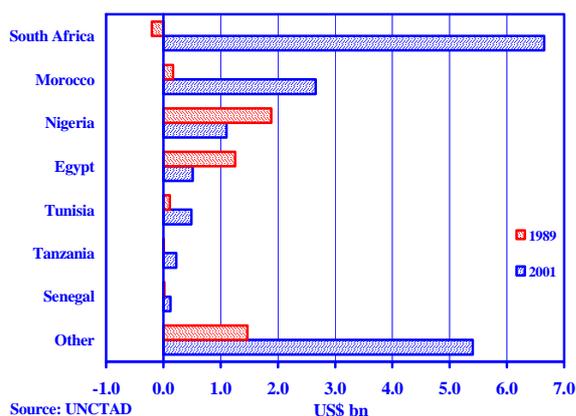
Investment growth, 1989-2000
(average annual growth, inflation-adjusted)



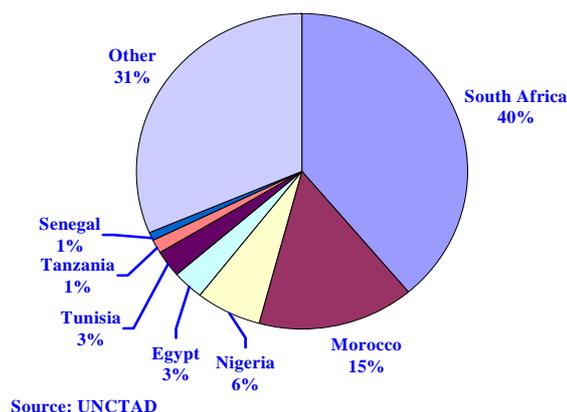
Few individual countries in Africa were able to record annual average growth rates of investment higher than 4% during the last decade. The economies showing the best investment record include Nigeria, with an annual average growth rate of 8.3% during the period – fuelled by the expansion of capacity in the oil sector; Egypt with 6.3%; and Senegal with 5%. But there is a high level of dispersion across countries in the continent, with severe contractions of investment in countries torn by civil war (e.g. Sierra Leone down an average 4.9% per year during the 1990s, Zimbabwe with a 3.4% annual fall and Congo Democratic Republic down 2.6%).

As for foreign direct investment (FDI), inflows to the continent have also been stagnant and highly concentrated in a handful of countries. This in part reflects the fact that the availability and quality of infrastructure, including power, communications and transport, is an important element in foreign investors’ decisions. As reported by the United Nations Conference on Trade and Development (UNCTAD, 2002b), between 1996 and 2000 the level of foreign direct investment remained fairly stable around US\$9.4 billion, although this was more than double the annual average during the first half of the 1990s (US\$4.3 billion). The year 2001 registered a 90% year-on-year rise, to US\$17 billion, but this was largely due to the transfer of shares involving the UK-based Anglo American Corporation and De Beers. Even in this extraordinary year, Africa accounted for only 2% of global FDI inflows. And preliminary figures for 2002 show a 65% drop in FDI inflows to the continent, to US\$6 billion, partly the result of the erratically high inflows in 2001 but also reflecting the political uncertainties in some African countries affecting investors’ perceptions of the continent as a whole.

Foreign Direct Investment by country



African FDI in 2001



The ten most successful countries in attracting foreign direct investment accounted for 73% of the total inflows in 2000. In recent years, the leading recipients of FDI in Africa have been South Africa, Angola, Nigeria, Algeria and Tunisia. North Africa accounted for more than 30% of total FDI to the continent during the second half of the 1990s, in line with its contribution to total GDP. As for the sectors benefiting from the influx of foreign capital, the primary sector - in particular, oil and natural gas - continues to attract the largest share, accounting for 55% in the accumulated FDI to Africa for the period 1996-2000. In contrast, manufacturing appears as the least important sector.

According to UNCTAD’s 2002 World Investment Report, most African countries attract less FDI that might be expected on the basis of relative GDP. To create the conditions to increase FDI into the continent beyond the incentives provided by the privileged access of African exports to US and EU markets (e.g. the African Growth and Opportunity Act, AGOA, and the “Everything-but-Arms” initiative) African countries in general need to improve human capital, strengthen linkages and expand infrastructure. Otherwise, future FDI inflows are likely to remain subdued and concentrated on a few countries such as South Africa, the Mediterranean countries in the Northern region and the oil exporters.

The improvement and expansion of infrastructure, and especially air services, can make a significant contribution to facilitating inward investment in tourism and develop non-traditional exports with relatively high value added content. The need for expanding and improving air services and markets has been acknowledged by the New Partnership for Africa’s Development (NEPAD), an initiative created by a number of African countries in 2002 to foster development in the continent.

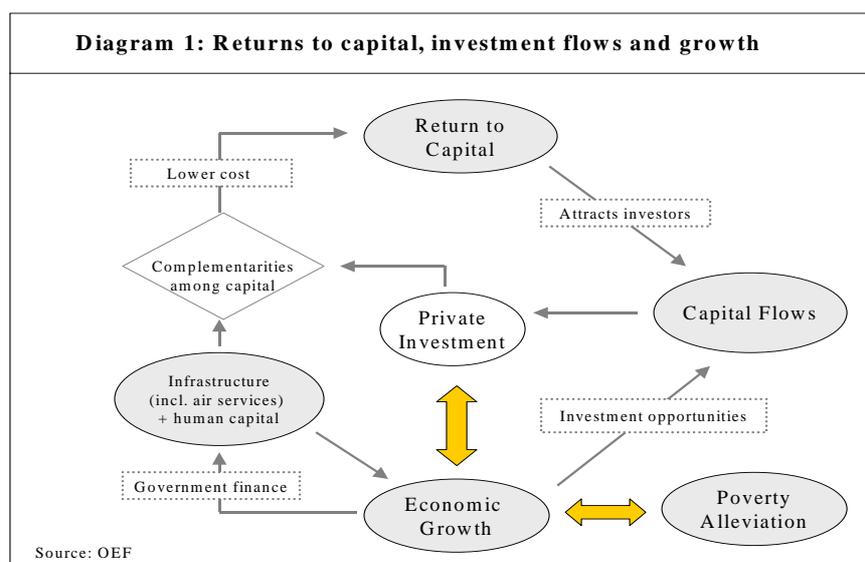
One of the priorities of NEPAD is to close the continent’s infrastructure gap by reducing waiting time in ports, improving land transport linkages among African countries and increasing air passenger and freight movement across sub-regions. However, better international co-ordination, as well as among countries in the region, is needed in order to make significant and prompt advances in terms of competition, efficiency and safety. In this respect an OECD report critically reviewed past air-transport-related co-operation and integration models among African nations (Goldstein, 1999). But it confirmed the necessity to cooperate internationally in a global economy. The report also suggests making aid conditional on respect for safety standards in recipient countries.

3. The need for transport infrastructure to support development

The poor investment performance in Africa is of great concern given the continent’s urgent need to expand its infrastructure in order to support growth and help alleviate widespread poverty. Some explanations for this dramatic mismatch between results and needs are to be found in the presence of extreme political instability, recurrent civil conflicts and the lack of a macroeconomic policy framework that supports investment.

Apart from these reasons related to the general environment for businesses, there are other factors complicating the evaluation of investment opportunities. One major difficulty faced by poor countries in attracting private investment is that they tend to have a relatively high cost of capital. For instance, Canning and Bennathan (2000) in a study of rates of return to electricity-generating capacity and paved roads across a wide sample of countries, including industrialised and developing countries, found evidence that middle-income countries get higher returns from infrastructure and other capital stock investments compared with low-income countries. In other words, the private benefits of capital in general depend on the country’s level of wealth.

This discrepancy is explained by the tendency of the cost of investment goods to be higher in low-income countries. Costs are high because of the need to import technology and know-how and the relative scarcity of human capital. And there are more modest network effects, since fewer people can afford to connect to the networks. Another explanatory factor is the presence of complementarities among types of capital. Different forms of infrastructure tend to be highly complementary, not only between themselves but also with physical and human capital. As a consequence, the economic contribution of infrastructure projects diminishes if increased in isolation. Thus, the efficient transport of goods and services calls for improvements across the country’s transport chain, including air and land services. In turn, new investment in the production of tradeable goods requires the support of an efficient and intermodal transport infrastructure if foreign competition is to be challenged.



One discouraging implication of these findings is that private capital is less likely to flow into those countries where infrastructure shortages are already relatively acute. This indicates the presence of a vicious cycle that hinders development and perpetuates poverty. In the presence of such market failure, economic theory provides strong arguments for the state to step in and finance the provision of risky, large-scale infrastructure projects with high social rate of returns. This, in turn, creates the conditions for private investment to flourish, leading to a virtuous cycle and offering an escape from the poverty trap (Murphy, Shleifer and Vishny, 1989).

However, while in richer countries the state can be in charge of financing large infrastructure projects, the reality in a number of African countries is characterised by a combination of finance shortages and numerous competing priorities, of which better infrastructure is only one. In a situation where governments face serious limitations to devote the necessary resources to finance infrastructure, there is a strong case for the help of international organisations and governments of developed countries.

CASE STUDY 1 *Trade and Investment Gateway Project in Ghana*

This project aims to attract a critical mass of export-oriented investors to Ghana to accelerate export-led growth as well as facilitate trade. The strategy envisages the use of free processing and trade areas, free ports and a liberalised skies policy to attract investors, especially foreign, to establish value-added facilities in Ghana with high job-creation potential (World Bank, 1998). With World Bank assistance, the Ghanaian government is spending a total of US\$56 million, to provide basic infrastructure facilities such as roads, water and electricity to the established enclaves.

The new processing areas are expected to include activities across a wide range of products and services including furniture and wood products, metal fabrication, garments and protective clothing, petroleum products, food processing, rubber and plastic products, pharmaceuticals, commerce, warehousing, packaging, telecommunications and fibre glass manufacturing. The estimated export potential of the free zones is set at over US\$500 million a year.

The project consists of two components. The first component is the development of the Export Processing Zone (EPZ) in the Tema region. It concerns the feasibility study of a railway corridor and detailed engineering, construction, and supervision of the off-site infrastructure, including constructing access roads and water supply systems, and supplying and installing electrical power and transformers. An important part of the first stage is the improvement to the container port and airport cargo facilities.

The second component concentrates efforts on capacity building in trade facilitation. Special attention has been directed to promote investment by increasing private participation in the ports and harbour authority, converting the civil aviation authority into a regulatory agency and removing administrative bottlenecks to facilitate trade. It also aims to make operational procedures more efficient and ensure compliance with international standards in customs and immigration services.

In order to attract private investors to participate in the free zones, the Ghanaian government has made available a comprehensive array of incentives to investors, including a 100% exemption from payment of direct and indirect duties on all imports for production and exports, and non-payment of income tax on profits under 8% for ten years. In exchange, foreign investors are required to bring a minimum equity capital investment of US\$50,000 for a project with full ownership and US\$10,000 for a joint venture with local capital. In response to the incentives provided, Ghana has already started to record capital inflows from the US, Malaysia, Korea, Taiwan, South Africa and Nigeria.

Air services play a key role in supporting Ghana's outward-oriented development strategy. The plan aims to develop Ghana into a hub in West Africa for import, export, storage, assembly, distribution, processing, manufacturing, and trans-shipment of passengers, goods and services. The Gateway project includes the construction of a dedicated freight apron to accommodate four wide-bodied aircraft, thus separating passenger aircraft from cargo aircraft to improve efficiency, security and safety. In addition, the cargo warehouse capacity will be expanded by 60% and import and export activities will be separated. The length of the runway will also be extended to enable aircraft to take off with maximum weight. With regard to the better functioning of the air market, Ghana has embarked on an open skies policy to deregulate the aviation sector and remove bureaucratic bottlenecks. The policy has resulted in a significant increase in the number of flight arrivals at the Kotoka International Airport.

Sources: Ghana Investment Promotion Centre website and World Bank (1998)

IV. THE CONTRIBUTION OF TOURISM TO SUSTAINABLE DEVELOPMENT IN AFRICA

Key Points

Perhaps the major potential contribution of the expansion in air transport to economic development in Africa is through developing and promoting international tourism. Tourism contributes to poverty reduction by generating economic growth, providing employment opportunities and increasing tax collection, and by fostering the development and conservation of protected areas and the environment in general. Tourism is also a major contributor to the trade balance in a number of African countries and a significant source of foreign exchange.

However, the tourist sector in Africa is small compared to other world regions, both in relative and absolute terms. In 2001, tourism represented on average 3.4% of GDP in Africa.

Africa is the continent with the fastest growth of tourist arrivals worldwide in recent years, although part of this is due to its low starting point. The recent expansion has been particularly strong in Tanzania, Ghana and Senegal - driven by an active promotion of nature-based tourism.

Two salient features of international tourism in Africa are its concentration in a small number of destinations and the importance of intra-regional tourism.

Economies with high growth during the last decade have tended to be those where the tourist sector is key to economic activity. And growth prospects in the longer term tend to be better in those economies that are more active in developing their international tourism potential. There is also an association between tourism, investment and standards of living.

To take full advantage of their potential as attractors of tourism, African countries need to embark on the modernisation and expansion of their air transport infrastructure and regulation. Also, they need to continue progress in promoting the creation of regional hubs.

Perhaps the major potential contribution of the expansion in air transport to economic development in Africa is through developing and promoting international tourism. In this section we examine the ways in which tourism can promote economic activity, improve standards of living and preserve the environment.

This section also includes a detailed presentation of three case studies:

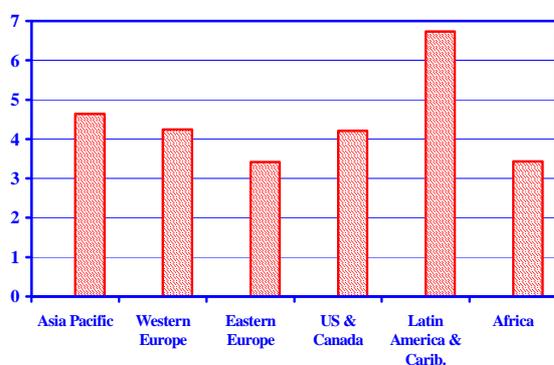
- i) The adoption of the Responsible Tourism Approach in South Africa
- ii) The Central Region Project in Ghana
- iii) The development of Ecotourism in Costa Rica

These cases illustrate the possibilities open to countries in the continent to benefit from the development of the air transport and tourist sectors, as well as the need to put in place an adequate policy framework ensuring that the country, the local communities and the environment gain the maximum benefit. We start by giving an overview of the African tourist sector in a global context, and a summary of its main features and current trends.

1. African tourism in perspective

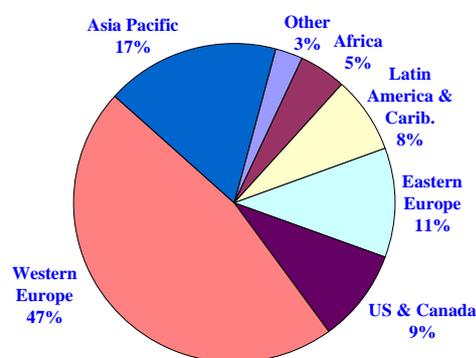
The tourism sector in Africa is small compared to other world regions, both in relative and absolute terms. In 2001, tourism represented on average 3.4% of GDP in Africa, nearly half that in Latin America and the Caribbean, the continent with the largest relative contribution of tourism to GDP. And in terms of international tourist arrivals, Africa has one of the lowest shares in the world total, with 4.7% in 2001, although the figure compares favourably with the 3.3% recorded in 1990. Other measures offer a similar picture. For instance, Africa had one of the lowest shares in the global total of expenditure linked to international tourism in 2001, at just 3.3% (US\$15.5 billion), compared to the 8.5% of Latin America and the Caribbean. And each international tourist visiting Africa in 2001 spent, on average, US\$469 – well below the world average of US\$669.

Tourism as % of GDP by regions, 2001



Source: WTO/WDI % of GDP

International tourist arrivals, market share



Source: WTO

However, the fact that aviation in Africa is still in its initial stages of development means that there is great scope for expansion. Africa is the continent with the fastest growth of tourist arrivals worldwide in recent years, although part of this is due to it starting from a low base. During the period 1995-2000, international tourist arrivals in the continent grew by an average annual rate of 6.3%, just above the rate for the Asia-Pacific region (6.2%). A positive trend is also found in Africa's tourism receipts, which rose to US\$15.5 billion in 2001 (despite a 12.5% fall of arrivals in Egypt), 2.4 times the amount recorded in 1990.

And the tourism industry in Africa did reasonably well in 2001, despite the severe impact of the September 11th terrorist attacks on the tourist sector worldwide. According to the World Tourism Organization (WTO), tourist arrivals in Africa rose by 1.8% in 2001, compared to a 0.6% fall worldwide. WTO preliminary figures for 2002 confirm the continuation of Africa's fast growth trend. International arrivals increased by 3.9% last year, to 29.5 million, above the 3.1% rise for tourism worldwide. South Africa is leading the way, with a strong 11% rise in arrivals in 2002, placing the country as one of the fastest-growing tourist markets in the world. However, the low numbers of international arrivals in most of the African countries, and the subdued level of spending per tourist relative to other world regions, indicate that there is a high potential for increasing the number of visitors and their economic contribution to the continent.

International tourist arrivals by region (annual average growth rate, in %)		
	1995-00	2000-01
Africa	6.3	1.8
Latin America & Caribbean	5.7	-3.7
Eastern Europe	2.7	-0.3
US & Canada	2.5	-6.8
Western Europe	5.0	-0.7
Asia Pacific	6.2	5.5
World	4.8	-0.6

Source: World Tourism Organization

International tourist arrivals in Africa (annual average growth rate, in %)			
	1995-00	2000-01	Market share in 2000
North Africa	6.6	-1.0	47.1
West Africa	6.8	12.7	8.4
Central Africa	6.3	15.6	1.2
East Africa	5.2	1.5	17.9
Southern Africa	6.6	2.4	25.7
Africa	6.3	1.8	100

Source: World Tourism Organization

2. Tourism in Africa

The tourism sector's relative importance and its state of development varies greatly across countries in the region. One of the salient features of international tourism in Africa is its concentration in a small number of destinations. In 2000, the sub-regions of North Africa and Southern Africa received two-thirds of the African total. The regional distribution of tourist inflows in 2000 is similar to that of 1990, although Southern Africa has seen a significant increase in its share of international arrivals (from 12% in 1990 to 25% in 2001). In contrast, the Central Africa sub-region received few benefits from tourism (attracting only 1.6% of total arrivals in Africa in 2001).

South Africa, Egypt, Tunisia, Morocco and Zimbabwe accounted for nearly 70% of the total of international arrivals in Africa during 2000, and the top ten destinations (with Nigeria, Kenya, Mauritius, Botswana and Tanzania added to the list) received more than 80% of the tourist arrivals in the same year. Moreover, tourist spending is even more concentrated with the top five countries accounting for 75% of the African total during 2000 and the top ten for 85%. A comparison with Latin America and the Caribbean serves to highlight the unevenness of the distribution of tourist flows by country in Africa. There, the top five destinations account for 61% of the region's total of tourist arrivals and for 52% of spending.

The rate of expansion of the tourism industry in recent years has been particularly strong in Tanzania, Ghana and Senegal - driven by an active promotion of nature-based tourism. During the period 1995-2000, international arrivals in Tanzania grew at an average annual rate of 10%, and by 7% in Ghana and Senegal. Tourism to the African islands has also been buoyant. During the same period, the number of arrivals in Cape Verde rose by an annual rate of 24.5%, in Madagascar by 16.5%, in Mauritius by 9.2% and in Reunion by 7.2%. The four islands were the destination of 4.1% of total arrivals in Africa in 2000 and 6% of total spending. And Mauritius expects to welcome a record 709,000 tourists in 2003, a growth of 4% over last year. Other countries with strong annual growth rates in the second part of the 1990s were Malawi (24.6%), Mali (23.2%), and Ethiopia (21.2%), but with the high rates largely explained by their very low starting point.



This dynamism in the tourism industry in a number of countries contrasts with recent setbacks to traditional destinations such as Zimbabwe and Kenya. By the end of the 1990s Zimbabwe received 2.1 million international arrivals, placing the country as the main tourist destination in East Africa and fifth in the continent. Over the previous decade arrivals in the country had increased three-fold, one of the strongest expansions in Africa. However, the recent deterioration of political and social conditions in Zimbabwe is likely to take its toll on the tourist sector. Although preliminary World Tourism Organization estimates in 2001 still show arrivals rising by 12.7% over the previous year, in the absence of a turnaround in the delicate political situation a downward trend is likely to dominate the tourist sector in the coming years. Kenya is also facing difficulties in retaining its position as one of the traditional tourist destinations in Africa. Although the number of arrivals in the country has remained stable during the period 1990-2001 (at an average of 850,000 arrivals per year), tourist spending in 2002 was 38% lower than in 1990, and the recent terrorist attack targeting tourists is expected to hit the country's air transport and tourist industry severely in 2003.

A second salient feature of the tourist sector in Africa is the role played by intra-regional tourism (i.e. flows of visitors originating within the continent). For instance, 46.3% of international tourist arrivals in 2000 (by any means of transport) had other African countries as their origin. The positive side of the continent's high intra-regional flows is the reduced level of exposure to fluctuations in inter-regional demand (i.e. those flows which originate in countries outside the continent). However, the purchasing power of tourists originating in other African countries tends to be lower than that from industrialised countries, undermining the sector's contribution to foreign exchange and economic activity in general.

The other main source of tourism to Africa is Europe, accounting for 41% of the total of international arrivals in the continent in 2000 – largely transported by air. Southern Africa has the largest share of intra-regional tourism, whereas most of the tourists visiting North Africa come from Europe. Tourists from Asia and the Pacific and the Americas have a minor presence, with both regions combined amounting to only 7.3% of total international tourist arrivals in 2000.

Shares of international tourist arrivals, 2000					
(in %)					
	Africa	Europe	Americas	Asia/Pacific	Others
North Africa	10.8	74.6	2.9	1.0	10.7
West Africa	42.5	40.4	5.5	5.2	6.4
Central Africa	39.7	50.8	6.1	1.9	1.5
East Africa	49.0	37.8	5.7	5.4	2.1
Southern Africa	74.3	16.3	3.6	3.0	2.8
Africa	46.3	41.2	4.0	3.3	5.2
Source: World Tourism Organization					

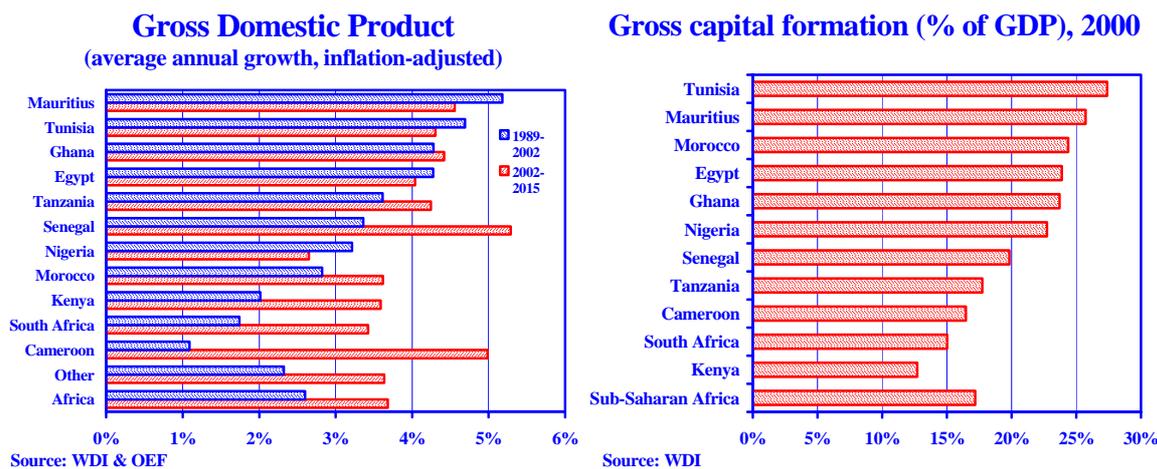
A comparison with Latin America and the Caribbean is illustrative of the trade-off between regional exposure and spending. In the Americas south of the US, tourists come primarily from the US and Europe, resulting in higher spending per arrival (US\$694 in 2000 compared to US\$469 in Africa), but there is a higher exposure to external shocks (arrivals fell by 4% in 2001 compared to a 1.5% increase in Africa).

3. Contribution to economic growth and employment

Tourism has been an engine for the expansion of the domestic economy and employment in a number of African countries. Economies with high growth during the period 1989-2002 (Mauritius, Tunisia, Egypt, Ghana) have tended to be those where the tourist sector is key to economic activity. The average annual growth of real GDP for Africa as a whole during this period (2.6%) is considerably lower than the growth record of most of the economies included in our sample of countries.

And in terms of prospects for the longer term, the forecast for the period 2003-2015 tends to be better in those economies that are more active in developing their potential as a destination for international tourism. Whereas Africa is expected to grow by an annual rate of 3.7% (and 1.7% in per capita terms), the growth forecast for our sample of traditional and emerging tourist destinations in the continent is an annual average of 4.1% (and 2.5% in per capita terms) over 2003-2015.

Moreover, there is also an association between tourism, investment and standards of living. The African non-oil economies with the fastest growth in investment and the highest GDP per capita tend to be those with the largest share of tourism in GDP. This is particularly the case for Tunisia, Mauritius, Morocco, and Egypt. This is evidence of the workings of a virtuous cycle where the tourist potential of a country attracts foreign and local investment, inducing and supporting economic growth and improving the living conditions of the population.



Although tourism is already an important source of employment in Africa, there is still ample room to take advantage of its potential for job creation. In 2001 tourism generated 3.3% of all jobs in Africa, a significant contribution but less than half of the sector’s employment contribution in Latin America and the Caribbean (7.6%). However, there is already a positive trend in the generation of employment that needs to be consolidated and reinforced. Between 1990 and 2001 the employment share of tourism in the Sub-Saharan region increased from 3.8% to 5%. Moreover, the majority of the traditional destinations for international tourism have also experienced a rise in the contribution of their tourist industries to total employment. For instance, in Mauritius 19.6% of those employed were working in the tourist sector in 2001 compared to 16.9% in 1990, whereas in Tanzania 5.8% of the labour force was employed in the tourist industry in 2001 compared to only 1.3% in 1990.

There are significant intra-regional differences in the contribution of tourism to employment. On the one hand, there are countries where more than 10% of the labour force is engaged in tourist-related activities (Cape Verde, Mauritius and Reunion). On the other hand, there is a large group of countries where tourism has little impact in terms of employment (e.g. Sudan with a share of total employment of 0.8% and the Democratic Republic of Congo with 1%).

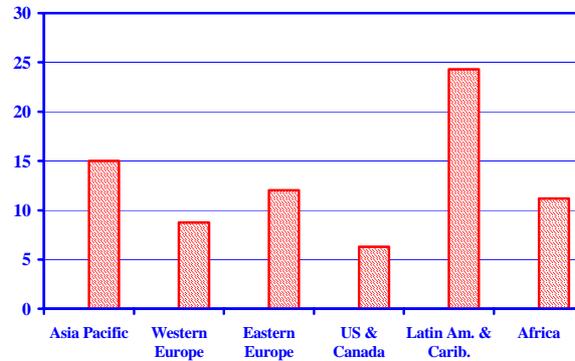
The extent of the contribution of tourism to economic growth and employment depends on its potential in generating linkages with other economic sectors, including agriculture, fishing, construction and handicraft production. In recent times renewed attention and efforts have been directed to create conditions whereby the host countries benefit as much as they can from tourism. However, still more needs to be done, particularly to ensure that a higher share of the gains generated by the tourism industry stays in the host countries, both at national and local levels, as well as to foster greater community participation. The experience of the Responsible Tourist Approach in South Africa (see Case Study 2, p.47) illustrates what can be done to promote stronger links with other sectors of the economy and to improve the living conditions of the population, particularly the poor.

4. Contribution to exports and foreign exchange

Tourism is a major contributor to the trade balance in a number of African countries and a significant source of foreign exchange. The average share of tourism in total exports for our sample of countries was 18% in 2001 compared to 7% for the Sub-Saharan region. However,

the share for Africa as a whole in 2001, 11%, is still below other developing regions such as Latin America and the Caribbean (24%).

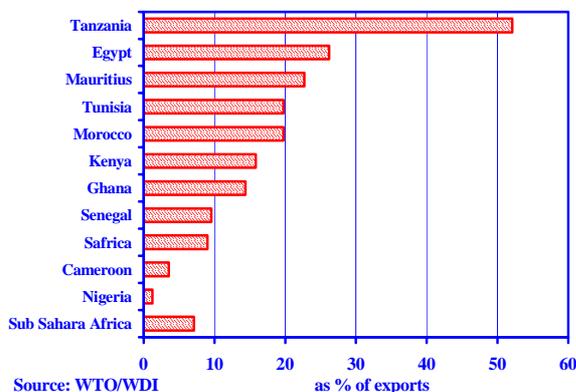
Tourism as % of exports by regions, 2001



Source: WTTC/OEF

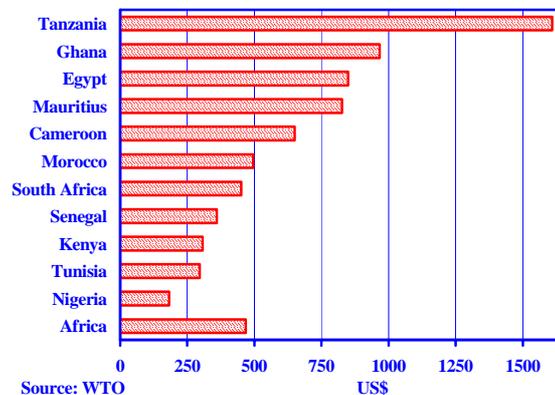
The share of tourist receipts in total exports can vary widely across the continent. While in countries such as Tanzania (50% in 2001), Egypt, Mauritius, Tunisia and Morocco (with 20% or more) tourism makes a major contribution to total exports, in others such as Congo and Gabon the sector makes little impact on the external accounts. There are also important inter-regional differences in terms of the generation of foreign exchange. According to data from the World Tourism Organization, out of total international tourism receipts worth US\$15.1 billion in 2001 for the continent as a whole, 53.1% accrued to North Africa, 22.5% to Southern Africa and 17.2% to East Africa. West Africa with 6.6% and Central Africa with 0.7% received few benefits from tourism. The presence of a wide dispersion also applies to countries within the sub-regions. Each tourist visiting Tanzania in 2000 spent on average US\$1,610, a figure significantly higher than the average spending per tourist in North America during the same year (US\$1,312). However, spending per international tourist was considerably lower in other popular destinations such as Kenya (US\$307) and Tunisia (US\$296).

Tourism receipts as % of total exports in African countries, 2001



Source: WTO/WDI

International expenditures per tourist in African countries, 2000



Source: WTO

The fact that African countries face minimal trade barriers in promoting tourism exports is a clear advantage over the export of goods. Recent examples of the potential of tourism as a generator of foreign currency for developing economies are Thailand, Vietnam and Costa Rica. In particular, the case of Costa Rica (see Case Study 4, p.49) shows the opportunities open to countries in Africa. However, despite the great advantages and potential offered by the tourism industry, countries with tourism-based economies are vulnerable to shocks of economic, political or natural origin that could have drastic implications. Fluctuations in the demand of international tourists due to the business cycle in the industrialised economies are a main source of risks, particularly in those countries that exhibit a high-income elasticity (Senegal, Tanzania and Mauritius). In addition, the tourism industry, particularly in the islands, is also exposed to natural disasters such as hurricanes and floods.

While traditional African exports (e.g. coffee, cocoa and copper) are also affected by volatility associated with economic conditions in industrialised economies and by natural disasters, shocks of a political nature typically have a much greater impact on the tourism industry than on other export-oriented businesses. For example, the Gulf war in 1991 caused a significant slowdown in the demand for a number of traditional tourist destinations in Africa (e.g. tourist receipts in North Africa fell by more than 20% between 1990 and 1991) and, more recently, the war in Iraq is likely to have affected tourist arrivals during the Easter holidays, particularly in North Africa. Moreover, further terrorist attacks pose a serious threat to the prospects of the tourism industry, particularly in sub-regions highly dependent on European tourism such as North and East Africa.

5. Tourism and social sustainability

Tourism contributes to poverty reduction by generating economic growth, providing employment opportunities and increasing tax collection, and by fostering the development and conservation of protected areas and the environment in general. Moreover, one of the assets of the poor in rural areas is their cultural and wildlife heritage; and tourism presents opportunities to capitalise on these assets.

Another important contribution arises from the link between the environment and poverty. Poor people in rural areas tend to be most directly dependent on natural resources and, in consequence, are the most severely affected when soils, vegetation and water resources are degraded. By supporting conservation efforts and enabling the development of protected areas, tourism has a beneficial effect on alleviating poverty, both by improving conservation efforts and generating economic benefits that can be channelled to the poor.

However, in order to ensure that the combined development of the air transport and tourism sectors makes the most of the impact on alleviating poverty, there is the need to introduce provisions for the involvement of local communities, emphasising the improvement of education and employment opportunities. In this respect, government policy can encourage the private sector to adopt poverty reduction practices, as illustrated by the experience of South Africa in promoting a Responsible Tourism Approach (see Case Study 2, p.47).

In addition, poorer members of the local communities need to be helped to access the tourist market - for instance, by measures designed to assist the informal sector and by developing their links with the formal sector. The experience in Gambia with the creation of Association of Small Scale Enterprises in Tourism (ASSET) shows how to improve the links between

community-based tourist attractions, small enterprises and the formal tourist sector (hotels and tour operators). The central idea is to promote agreements where hotels facilitate access to informal sector traders while the traders reciprocate by not hassling tourists (World Tourism Organization, 2002a, pp.58-64).

6. Policymaking priorities

Tourism is superior to other industries in Africa in terms of economic linkages, and the generation of employment and foreign exchange. Moreover, tourism can make a substantial contribution to improving rural livelihoods and conserving the environment. And Africa has a comparative advantage in forms of tourism that value a wide range of unspoiled natural environments. Although in recent years there has been a significant increase in activities related to tourism across African countries, the development of the tourism industry is still in its initial stages in a number of countries. The comparatively small number of international arrivals and the low level of spending per tourist relative to other world regions indicate that there is a high potential to increase the number of visitors and their economic contribution to Africa. This can be achieved by increasing the range of products and services on offer and improving air transport and tourist infrastructure.

While the combined promotion of the air transport and tourist sectors has a great potential to foster economic development in the continent, there is the need to ensure that local residents, protected resources and tourism all benefit from such expansion in an harmonious fashion. This does not happen automatically, but it requires planning and organisation, and close and active cooperation between the government, the private sector and local communities. This includes efforts to reduce leakages (i.e. the amounts subtracted from tourist expenditures for repatriated profits, wages outside the country and for imported goods and services) and to maximise linkages with the local economy so that countries capture more of the net economic benefits of tourism (e.g. by purchasing from domestic providers, the tourist industry can effectively provide additional revenues and jobs). Also, governments in the region can effectively contribute to the development of their tourism industries by providing appropriate training, disseminating information about local services and products, fostering small businesses and strengthening links between the formal and the informal sectors.

Tourism activities are intensive in the use of human resources, making it one of the economic sectors with the greatest potential to create employment opportunities, including a wide range of skills and opportunities for the poor in rural areas. However, there is the need to ensure that local people benefit the most, in particular the poor. The contribution of the tourism industry to employment in a country depends upon a number of factors: the scale and form of tourism development; the extent of the engagement of tourists in the local economy; the provision of adequate training in the host countries; and the promotion and support of small-scale business.

It is also important to minimise the impact of seasonality on employment by implementing strategies to attract tourism throughout the year. Some examples of these strategies are promoting festivals, attracting seminars and conventions, and adequate pricing policies targeting particular groups, such as senior citizens, who have more flexibility to travel during the low season. For example, the South African tourist agency has been very active in launching international marketing campaigns in the US, UK, India, Kenya and Tanzania featuring value-for-money packages during the country's traditional low season.

There have to be renewed efforts to put in place proper regulation and monitoring in order to mitigate adverse effects that might arise from tourism activities and development. One response to criticism of the misuse of the concept of “eco” or “sustainable” by some firms operating in countries is the introduction of “ecorating” or tourism certification. These are schemes designed to create incentives and at the same time to verify that companies within the tourist industry comply with the promotion of environmental and social sustainability.

In order to take full advantage of their potential as attractors of tourism, African countries need to embark on the modernisation and expansion of their air transport infrastructure and regulation. Also, they need to continue progress in promoting the creation of regional hubs in order to increase the supply of air transport to each of the sub-regions and to enable competitive and attractive fares.

However, although in recent years there has been a significant increase in activities related to tourism across Africa, there are a number of risks affecting prospects for the development of the tourism industry in the region. First, there is the growing concern about health conditions, in particular the spread of HIV/AIDS in Sub-Saharan Africa, and the poor range and quality of facilities in a number of African countries remain major constraints on the potential growth of visitors to the region. Second, the increased terrorist threat and lax security at airports and tourist facilities threaten to undermine the inter-regional flow of tourists to the continent. North and East Africa are particularly exposed to a sudden decline in tourist arrivals from Europe. Finally, political uncertainty and civil conflict continue to be a major obstacle to the creation of the necessary conditions for investment and the safety of travellers in a number of African countries (e.g. Zimbabwe, Liberia, Sudan, Democratic Republic of Congo and Sierra Leone). These factors impact negatively on perceptions of the region as a whole, with a direct consequence for the development of the tourism industry.

CASE STUDY 2 *Responsible Tourism Approach in South Africa*

The experience of South Africa in promoting a Responsible Tourism Approach (RTA) since 1996 demonstrates how government policy can encourage the private sector to adopt poverty reduction practices. This initiative moves beyond reliance on the trickle-down effect and looks for the active engagement of businesses in creating economic linkages that will benefit the poor. This is a clear move from focusing on growth in international arrivals and foreign exchange earnings to poverty relief and employment creation in local economies.

The aim is to involve local communities and previously disadvantaged groups in planning and decision-making to ensure that they benefit from tourism; for instance, by fostering the development of community-based tourism, by providing marketing and mentoring support, and by maximising the proportion of employment from the local community.

In 2002 the South African government introduced a set of guidelines with the aim of providing national guidance and indicators to enable the tourist sector to demonstrate progress towards the principles of responsible tourism. Within this framework, tourist associations and businesses are expected to commit to achieving specific targets, while preserving the profit-making nature of their activities. The following are some examples of how this initiative is being implemented.

- One action encouraged by the RTA is buying locally made goods and using locally provided services from locally owned businesses. To that end, a target is set for improvements over three years (e.g. 20% during the first year to be raised to 25% and 30% in the following years) and, in order to verify progress in achieving this goal, there is periodical monitoring of the proportion of goods and services provided by businesses within 50km. This is accompanied by government efforts to assist local craft workers to develop new products to meet market demand.
- The approach also implies working closely with local communities and small businesses to develop new products that provide complementary products for the formal tourist sector. This includes marketing and mentoring support.
- Lack of market access is one of the major constraints to the creation of new businesses in the local economy. In order to address this problem, the RTA seeks the co-operation of the tourism industry to provide information about local services and attractions available in local communities.
- The RTA also includes a number of measures to encourage firms in the tourism industry to adopt employment practices and targets that will benefit the poor. For example, by setting targets for increasing the proportion of staff and/or the firm's wage bill going to communities within 20km of the location of the tourist business.

As a result of the implementation of the Responsible Tourist Approach, firms in the tourism industry in South Africa are now expected to select from a wide range of economic, social and environmental guidelines and targets, which are appropriate to their circumstances, and to demonstrate their progress in all three categories.

Source: World Tourism Organization (2002a, pp.50-55)

CASE STUDY 3 *Ghana Central Region Project*

In 1990, the government of Ghana with the sponsorship of the United States Agency for International Development (USAID) and several NGOs, including the University of Minnesota Tourist Center and the Smithsonian Institution, put forward a project for the development of the country's central region with tourism as the leading sector. To that end, the Central Region Development Commission (CEDECOM) was created to implement the programme. The emphasis was placed on the participation of the private sector in the sustainable economic development of the region.

As part of the project, the Kakum National Park (357 sq. km) was formed to protect one of the last vestiges of Ghana's rapidly vanishing rainforest and its rich wildlife. Another priority of the project was the restoration of historic buildings and castles along the Cape coast. A few years after the beginning of the programme visitors to the Kakum National Park soared, reaching 40,000 in 1997, resulting in US\$75,000 in revenue for the park that year. In addition, the creation of the park has helped to generate more than 2,000 jobs in the local community.

A special effort has been made to involve the local community in all activities and to create venues for sharing knowledge, communicating progress with the project and developing awareness. In addition, a scheme of small grants directed to historic homeowners was created to help with maintenance and restoration work. Also, a community programme to provide trading opportunities as tourist guides was developed with the support of the Ghana Tourist Board.

The Central Region Project is part of a major effort undertaken since the early 1990s by the Ghanaian Government, NGOs, the United Nations Development Programme and other key stakeholders aimed at achieving an accelerated and sustainable agricultural, industrial and tourist development of the region. These efforts have resulted in a considerable infusion of capital, both human and physical into the region, fostering agro-industrial, tourism and related activities. The increase in these activities has also included public investments in infrastructure, especially electricity, telecommunications, health and sanitation facilities, as well as good drinking water.

Together with credit and other forms of support to entrepreneurs and small business in the tourism industry, these public sector investments have stimulated considerable private sector investment in the tourism sector. For instance, the number of one and two-star hotels in the region doubled between 1995 and 1997 (from 7 in 1995 to 14 in 1997, with a capacity of more than 500 rooms). And during the same period the number of budget-type hotels was expanded to 40, with a total room capacity of 515. These investments have generated considerable employment for the construction industry as well as the hospitality sector. The hotels have provided 446 jobs, 120 restaurants and a wide market for operators of drinking bars, gift shops and other small businesses.

Source: CEDECOM website

CASE STUDY 4 *Ecotourism in Costa Rica*

Costa Rica is a good example of the potential of ecotourism as a generator of foreign exchange, employment and the improvement of conservation. At the same time, the Costa Rican experience illustrates the challenges ahead for those countries in the initial stages of the promotion of ecotourism. The country started the promotion of ecotourism at the beginning of the 1980s as a way of reversing a growing process of deforestation. Currently, the tourist industry has become the second largest source of foreign exchange - after microchip exports - and provides the resources needed to maintain the country's national parks. The rapid development of the tourism industry is reflected in a number of indicators. Between 1990 and 2001 international tourism spending increased five fold, to US\$1.3 billion in 2001 (26% of total exports), while the spending per arrival has nearly doubled. In 2001 the number of international arrivals in the country reached 1.1 million (of which 72% arrived by air), more than a quarter of the country's population. In terms of accommodation capacity, the number of rooms has nearly doubled in less than a decade, from 8,548 in 1992 to 14,990 in 2001.

In recent years the Costa Rican government's efforts have been concentrated on education and training, particularly of local residents, and on improving regulation and evaluation of tourist activities. With this in mind, in 1998 the government put in place an evaluation system under the name of Certificate for Sustainable Tourism (CST). The introduction of the scheme was partly a response to criticism surrounding the misuse of the concept of "eco" or "sustainable" by some firms in the country's tourist industry, where excessive building combined with high visitation to the protected areas was threatening the wildlife (Honey, 2002). The programme aimed to assess the degree to which businesses in the tourist sector complied with the promotion of environmental and social sustainability. Similar ecorating or tourism certificate schemes have been introduced in New Zealand, Australia, the Dominican Republic, Haiti, Jamaica and, more recently, in Kenya (ESOK, 2002) to help improve the environmental and social contribution of their tourism industry (Honey, 2002).

The CST seeks to classify and certify each tourist firm according to the degree to which its activities comply with a model of sustainability. To this end, four basic aspects are assessed: the interaction between the firm and its surrounding natural habitat, the firm's management policies and infrastructure, and the interaction with the clients and the local communities. The CST provides a system of sustainability levels on a scale of 0 to 5, with 5 meaning that the company is considered as outstanding in terms of sustainability. The scheme includes a series of incentives that translate into benefits for the firms in proportion to their rating (e.g. international and national publicity and promotion, training support, participation in world tourism fairs and events).

Although the CST originally focused on the hotels sector, it is now expanding to cover other main components of the tourism industry, such as tour operators, transportation and restaurants. After overcoming initial resistance from some important players in the tourism industry, the programme has earned wide support and is now a model for similar schemes in the rest of Central and South America.

Sources: Costa Rica Tourism Board website and Younhee Kim (2000)

V. AVIATION AND THE ENVIRONMENT

Key Points

Aviation has great advantages as a mode of transport in terms of access, time saving and safety. But, despite significant technological improvements, the expansion of air transport continues to be a source of concern due to its impact on the environment.

Africa has the potential to generate the largest net benefits from the expansion of air services of any of the world's regions. On the side of the gains, because of their lower initial income level per capita, African countries are set to benefit the most from new investment, particularly in infrastructure. And on the cost side, the continent's low population density, high land availability and relatively low initial airflows help to limit the environmental impact of increased volumes of air traffic compared with other regions. Moreover, aviation has the potential to benefit the local environment by promoting nature-based tourism and by contributing to poverty alleviation.

However, despite the great potential of aviation to contribute to improving social sustainability in Africa, low safety standards and lax security remain major obstacles - limiting the expansion of air services and the increase in tourism, trade and investment.

Aviation has great advantages as a mode of transport in terms of access, time saving and safety. But despite significant technological improvements, the expansion of air transport continues to be a source of concern due to its impact on the environment. In particular, aviation causes air pollution and noise at ground level, together with ozone layer depletion and global warming effects due to emissions in the troposphere.

However, even though environmental considerations should be addressed and efforts renewed in developing cleaner technologies and improving environmental standards, the implications of air services for the environment need to be seen in the broader context of countries' development needs. This is especially relevant when assessing the impact on the environment associated with the expansion of air services in Africa.

1. Global warming

There is still intensive research and debate on the effect that aviation has on the atmosphere. Most scientists are still uncertain about the relative effects of emissions from aviation and other sources. They agree that certain types of emission from aircraft have an effect on global warming. But currently they have a better understanding of the effect of carbon dioxide (CO₂) than of other aircraft emissions. The countries of the Organisation for Economic Co-operation and Development (OECD) account for more than two-thirds of total CO₂ emissions, although these countries represent only 15% of the world's population. It is estimated that by the mid-1990s jet aircraft accounted for between 8% and 12% of transport-related fossil fuel emissions of CO₂ and about 3.5% of the effects of all emissions from human sources worldwide (IPCC, 1999). Aviation's contribution to global warming from fossil fuel use is likely to rise to 5 % by 2050 according to the IPCC medium scenario.

Other emissions generated by air transport which are linked to global warming are nitrogen oxides (NO_x), carbon monoxide (CO) and sulphur dioxide (SO₂). The main impact of NO_x is on increasing ozone concentrations in the upper troposphere and lower stratosphere. Although technological innovation in the industry has reduced in general gaseous emissions substantially, the evolution towards larger engines has led to increased emissions of NO_x per unit of jet fuel. This implies a trade-off between improving energy efficiency and NO_x emissions. CO emissions are mostly released near the ground, and their environmental impact is being significantly reduced with the introduction of engines with cleaner technology. SO₂ emissions are directly related to the sulphur content in fuel and not to engine technology. Thus, in the absence of changes to the sulphur content of jet fuel, sulphur dioxide emissions are expected to grow in proportion to air traffic volume.

In recent decades there has been a sustained move towards a more efficient use of energy - operational improvements and tougher regulations - with a direct bearing on emissions of most of the pollutants associated with aviation. For instance, the latest generation of aircraft uses three times less fuel per seat kilometre than the average-age aircraft in operation in early 1960 (IPCC, 1999). The efficiency gain recorded in aircraft is unique when compared to other modes of transport (e.g. road and rail transport has only improved by 15% to 30% during the same period). The drastic reduction in the use of energy is a direct consequence of the high contribution of fuel consumption to total operation costs for airlines – currently about 13% of the total. The International Civil Aviation Organisation (ICAO) has developed emission certification standards for emissions of carbon monoxide, nitrogen oxides, unburned hydrocarbon (HC) and smoke, which are included in Annex 16 to the Chicago Convention. Although the certification standards are based only on the LTO cycle (landing and take-offs of aircraft) they also help to limit emissions at altitude. However, ICAO's Annex 16 limits do not address aircraft greenhouse gas emissions of carbon dioxide, water vapour and sulphur dioxide (IATA, 2001).

Moreover, there is evidence indicating that aviation compares favourably with other modes of transport in terms of their net social contribution. A recent study looking at external cost coverage commissioned by ATAG analyses the relative costs of pollution, global warming, noise, accident costs, and the infrastructure net balance (surpluses or deficits) by air, rail and road transport on five selected European corridors (Maibach & Schneider, 2002). External costs or benefits are economic costs which are normally not taken into account in markets and in decisions made by companies but are paid for by society at large. Conversely “internalisation” means the incorporation of external costs into the market decision by charging the companies the full cost of their activity according to the “polluter-pays” principle. This also includes subsidies given to companies for the use of infrastructure.

According to the study, air transport scores better than other transport modes. It outperforms the other modes in the net balance of external costs, which is derived from all environmental/accident costs and infrastructure surpluses or deficits. The results indicate that air transport, despite higher climate change costs, can compensate for its environmental external costs through its infrastructure surpluses. In the study, the net social costs are generally higher for rail and car transport.

The study also analyses time spent when travelling by road, rail or air. Fast transport modes are a benefit to the airline passenger. The study illustrates that time savings in air transport are substantial on each route. This also explains why passengers prefer air transportation to

other transport modes except for very short trips better performed by road and rail, and high-speed rail services up to 500km.

The study is particularly relevant for Africa, since the geography of the African continent requires a traveller to cover large distances, usually by air. In Africa, investments in air transport are fully justified in terms of social net costs and with respect to alternative transport investments. The cost of establishing and maintaining railway lines over distances which can be covered by air are so prohibitive that, de facto, air transport will always be the most cost-effective solution for the African continent.

Looking forward, further improvements in energy efficiency are expected in the coming years, though at a more modest pace as major technological breakthroughs in aircraft technology are unlikely. For example, the Intergovernmental Panel on Climate Change foresees energy savings per passenger of the order of 15% by 2015 (IPCC, 1999). However, despite the significant success achieved in reducing emission factors, the amount of pollutants generated by aviation is expected to rise due to the continued growth in traffic volume.

Africa makes the lowest contribution to aircraft emissions of any of the world's regions. This is a direct consequence of the fact that the continent's fleet is the smallest among the world regions. According to Airbus (2002), at the end of 2000 the number of aircraft operated by African airlines represented just 3% of the world total, and this share is expected to rise only modestly to 4% by 2020. Moreover, the analysis of the OAG data shows that air traffic flows in 2002 – measured by airline seating capacity – associated with Africa, including both intra-Africa flows and inter-continental flights, represented less than 3.5% of the world's total.

Not only does Africa's air traffic have a minor impact on climate change due to the small size of its fleet and number of routes, but also its relatively old aircraft fleet means that the expansion of air services in the continent is likely to result in the introduction of new aircraft with more environmentally-friendly engine technology, partly compensating for the potential increase in emissions. Airbus (2002) data show that at the end of 2000 the airlines of Africa operated the second oldest passenger fleet among the world regions, with an average age of 13.5 years, after Latin America with 15.2 years. (Europe had the youngest fleet with an average age of 8.3 years.) However, the continuation of a trend in fleet upgrading is expected to reduce significantly the age differences among the world regions in the next two decades. In particular, Airbus predicts that by 2020 the age of the African air fleet will average 12.1 years compared to 10.3 years in Europe and a world average of 11.1 years.

It should be noted, however, that climate change is a global problem and all parts of society need to contribute to reducing greenhouse gas emissions. Moreover, the IPCC working group II (Geneva, 13-16 February, 2001) has assessed that climate change effects will be the greatest in developing countries in terms of loss of life and relative effects on investments and the economy. The adaptive capacity of human systems in Africa is low due to a lack of economic resources and technology. The IPCC report also predicts "significant extinction of plant and animal species", which would impact rural livelihoods, tourism and genetic resources. For instance, the tea-growing areas of Kenya are expected to decline as a result of climate change, leading to a major decrease in the export earnings of the country. The IPCC proposes that more extensive access to insurance, and more widespread introduction of micro-financing schemes and development banking, would increase the ability of developing nations to adapt to climate change.

Chapter VII in this report on protected areas illustrates how eco-systems supported by nature-based tourism can also become a significant source of revenues and employment in Africa. To attract nature-based tourism, which is a global industry, an efficient air transport system is indispensable. The example on protected areas also shows that investments in air transport infrastructure can support over-arching UN millennium goals, namely the reduction of poverty and the protection of the environment.

2. Noise and congestion

Besides global atmospheric effects, air transport also leads to local air pollution and noise. Aircraft noise is highly concentrated around airports and its magnitude depends on factors such as the frequency of landing and take-off cycles and population density within the vicinity of the airport. Technology improvements in the last 30 years and improved regulation (e.g. ICAO noise certification standards for new aircraft and engines) mean that the potential for noise annoyance has been reduced by as much as 75%, despite the significant expansion of air traffic during the period. And compared to other transport modes, aviation has a lower impact per passenger kilometre, reflecting the fact that its noise impact is limited to small areas at the beginning and the end of a journey. However, despite these positive trends, aircraft noise remains a major source of concern and it is often the focus for the action of community groups and NGOs opposing the construction and expansion of airport facilities.

The increase in the demand for aviation services has led to capacity problems at airports and ATC systems, particularly at the main hubs in industrialised countries. The result has been an increase in the level of congestion in the air and on the ground that is starting to affect the quality of air transport services and their cost to the environment. Congestion increases fuel consumption, as airplanes must use longer routes to bypass congested areas or wait their turn to land or depart. The most affected regions in terms of congestion are Western Europe and the US. It is estimated that in 2000 25% of flights in Europe were delayed on average by more than twenty minutes each, compared to an average delay of eight minutes in 1998 (ATAG, 2000). And similar figures are reported in the US. The delay situation has improved recently, partially due to system improvements in air traffic management and partially due to the economic downturn and a series of other external events (e.g. war in Iraq, SARS) which affected air transport growth. But without the timely introduction of the “Single Sky” - an initiative launched by the European Commission - and airport expansion, the air transport system will again experience severe bottlenecks once demand for air services recovers. This will have knock-on effects on destinations worldwide.

Currently, as a result of the rapid growth in traffic volume and limits on night-time operations at many airports prompted by noise concerns, many of the busiest airports worldwide are operating close to capacity. In 1999 10 of the largest airports in the US accounted for 64% of the flights delayed, and 13 of the 50 busiest airports in the country were already operating at full capacity - and all but five expected to face serious congestion problems within 10 years (WBCSD, 2001). The problem of congestion is exacerbated by the hub and spoke structure that dominates the organisation of traffic flows, concentrating most flows on a few large airports. In addition, growing airport congestion has put increasing pressure on the reliability and efficiency of the air traffic control systems.

In the developing and least developed countries, air traffic demand is generally lighter relative to population and land mass, making congestion and noise less of a problem. This is especially the case in many African countries with low population density and relative abundance of idle land available to airport facilities. Population density in Sub-Saharan Africa in 2000 was 28 people per sq. km (WDI, 2002), one of the lowest ratios among the world regions and 4.3 times lower than the population density in Western Europe. The support of the local community can be gained by direct involvement in the expanding economic opportunities (e.g. by supporting local employment and training).

3. Safety and security

According to IATA (2002), the number of people losing their lives in air accidents in Western-built aircraft in 2001 halved compared with 2000. The year 2001 was the best year for accident prevention in the last 10 years. Fatalities linked to the 9/11 attacks are not included because they are due to terrorist breaches of security and not to safety problems. Moreover, when distance and travel are taken into account, aviation is safer than other means of transport. The accident risk is considerably lower, although the level of potential damage is generally higher. For instance, according to IATA, average loss rates (as measured by the ratio of lost aircraft to flight time) have declined gradually in the last three decades. And the number of fatalities per million passenger-kilometre in airplanes was 25 times lower than in passenger cars and 20 times lower than in intercity trains. However, despite its good safety record, aviation as a whole is particularly sensitive to sudden and drastic changes in public confidence due to the level of publicity surrounding single accidents and terrorist actions.

The air traffic control system (ATC) is a critical component of the air transport infrastructure. This is made up of a network of navigational aids, communication systems and manned control centres that direct and coordinate the aircraft flows in an efficient and safe way. Growing airport congestion results in rising ATC congestion and delays, with the potential of turning small problems into large ones. While congestion and disruption of air traffic is increasingly an issue in North America and Europe, LDCs face different problems. In Africa, despite efforts and improvements in recent years, the lack of infrastructure facilities and poorly managed ATCs (e.g. the system is less able to warn aircraft of hazards and impending danger) undermine safety, posing a real obstacle to the expansion of aviation and to the integration of African countries into the world economy (WBCSD, 2001). The share of Sub-Saharan Africa in disasters involving commercial airlines during the period 1990-1998 was more than twice its traffic share (Goldstein, 1999). And compared to other world regions the African rate of aircraft accidents (i.e. hull losses per million departures) is indeed alarming. According to the Flight Safety Foundation, the accident rate in Africa during the 1990s was 8.1% versus 3.4% in Latin America and 0.4% in the US and Western Europe.

Security is currently another major source of concern regarding aviation in Africa. The recent bombings in Casablanca (Morocco) were a reminder of the threat facing tourist-based economies and the urgent need to step up security. This is another incident in a series of terrorist attacks on the continent during the last decade, with the tourist industry as the primary target. However, there are some lessons that can be learned. The experience of Egypt in this respect is illustrative of the sort of measures necessary to reduce the terrorist threat and improve tourists' confidence.

Terrorist groups sought to destabilise the Egyptian economy by destroying the tourist sector. Tourism and air services contribute about 6% to economic activity in Egypt and are the most important source of foreign exchange. Before the massacre in Luxor of 58 tourists – mostly from Europe and Asia - at the hands of fundamentalist Islamic terrorist groups in November 1997, the flow of international tourists was on its way to reaching a record 4.2 million that year and was set to generate nearly US\$4 billion in revenues for the country. The impact of the Luxor attack on tourist confidence was clearly reflected in the fall of tourist arrivals in the country during 1998 - down by 14% on the previous year and a fall of about 20% from the expected figure for 1997 prior to the Luxor massacre. Meanwhile, tourist spending was also severely affected, with a decline of 45% relative to 1997.

However, by 1999 the tourist industry in Egypt was back on its feet, with international arrivals at 4.5 million, 25% up on the number of visitors recorded in 1996. And in 2000, arrival flows reached a record of 5.1 million. In addition, investor confidence in the country recovered relatively soon. Foreign direct investment peaked at US\$2.9 billion in 1999, nearly three times the amount invested in 1998, and the main international hotel companies started developing new projects across the country as early as 1998. Moreover, the prospects for the country as a tourist destination received a boost in early 2000 after the government introduced an open skies policy allowing international airlines to operate scheduled flights directly to resorts. The upward trend in the flow of visitors was interrupted in 2001 after the tragic events of 9/11, but figures for 2002 saw an 11% rise in international arrivals.

In order to restore visitors' confidence - particularly in developed countries - and improve security, the Egyptian government implemented a comprehensive set of anti-terrorist measures immediately after the Luxor incident. These included a crackdown on groups sponsoring terrorism, increased security at all tourist sites and hotels, and improved international co-operation on security. The measures have been very effective in reducing the risk that terrorist groups pose to the Egyptian tourist industry. However, besides measures focusing on the immediate threats and symptoms, the most effective anti-terrorism strategy in the longer term, not only in Egypt but also in the rest of Africa, is the alleviation of poverty, the reduction of unemployment – particularly among the young – and the improvement of the living conditions of the population. And in these areas, air services, via their role as facilitator of trade, tourism and investment, can play a key role.

4. Aviation and sustainable development in Africa

Cost-benefit analysis would be likely to show that Africa has the potential to generate the largest net benefits from the expansion of air services of any of the world's regions. On the side of the gains, because of their lower initial income level per capita, African countries are set to benefit the most from new investment, particularly in infrastructure. And on the cost side, the continent's low population density, high land availability and relatively low initial airflows help to limit the environmental impact of increased volumes of air traffic compared with other regions. For this to be the case, governments in the region need to ensure that air transport infrastructure is expanded to accommodate the projected increases in demand and that air traffic control systems are improved.

The sustainability trade-off in African is clearly on the positive side. The associated benefits in terms of welfare, economic growth, mobility and access are most likely to outweigh costs in terms of climate change, noise and congestion. Given the low initial level of economic

development that characterises African countries, the expansion of air services - and those activities closely dependent on them – has a great potential to raise significantly levels of GDP per capita, alleviate poverty and attract inward investment, setting in motion a virtuous cycle to help countries escape from the poverty trap. It is therefore to be expected that the local population will be more willing to accept the environmental impact of the expansion of air services in order to improve mobility and access, and to widen economic opportunities.

Not only can air services bring considerable gains in terms of economic development in Africa, but they also have the potential to benefit the local environment. This is achieved through two main channels: directly by promoting forms of tourism centred on the environment (i.e. adventure, game and ecotourism); and indirectly via their contribution to poverty alleviation. The benefits to the local environment are likely to offset any negative impact on pollution and noise. As discussed elsewhere in this report (see section on aviation and protected areas), there is a great potential in Africa to benefit from its comparative advantages in natural sites and wildlife. In particular, the expansion of air services and the nature-based tourist industry could become an effective mechanism to improve conservation of protected areas and promote economic growth. The development of more efficient and cleaner technologies, and the modernisation of the African air fleet, will also help to limit the impact of air transport on the environment.

Moreover, in some cases, geography and distance mean that aviation is effectively the only option available in Africa to facilitate international trade and services – most obviously in landlocked countries – and to improve access to remote areas where road and rail transport is limited. In addition, aviation has unique advantages over other modes for transporting perishable cargo and for travelling in reasonable time. This is particularly important in countries adopting a development strategy that relies on the promotion of exports and tourism (e.g. South Africa, Morocco, Tunisia, Tanzania).

Despite the great potential of aviation to contribute to improving social sustainability in Africa, low safety standards and lax security remain major obstacles limiting the expansion of air services and the increase in tourism, trade and investment. And although there are significant differences across countries, the image exposure problem means that disturbing conditions and developments in a particular country tend to have a damaging impact on external confidence in the continent as a whole. Restoring and preserving public confidence requires a concerted effort among African countries to make safety and security the overriding priorities in their national policies. In addition, improving safety and security in Africa requires the full commitment and cooperation of airlines, airports, air navigation service providers, governments and international institutions.

The way forward

Safety and security problems are not irreversible. Though current controls and practices may be insufficient and lack skill and modern management, the problem has now been generally acknowledged, analysed and key players are taking action. The challenge is to integrate these approaches. The overall magnitude of the impact on safety and security will ultimately depend on the willingness of African governments to cooperate in a timely fashion. To this end, this report draws a number of conclusions (Section VIII) in the guise of recommendations, which have been discussed with air transport experts in ICAO, IATA, WTTC, the World Bank and other institutions, as well as local representatives of airlines and airports.

VI. AVIATION AND PROTECTED AREAS

Key Points

Africa is home to nearly 15% of the total area of protected areas worldwide, giving the continent a valuable comparative advantage in attracting international visitors. The expansion of the nature-based tourist industry could become a significant source of revenues and employment, at the same time as being an effective mechanism to improve the conservation of protected areas.

There is potential to set in motion a virtuous cycle: protecting the environment attracts tourism and the development of the tourist industry, which in turn makes it possible to finance the protection of nature and cultural heritage, increasing the benefits of protected areas to the country.

Moreover, the promotion of nature-based tourism is an effective lobbying tool for favouring nature conservation against extractive and non-sustainable agricultural activities. It can also increase the sense of ownership and responsibility for natural resources among local communities.

However, nature-based tourism is a global industry, where an efficient and well-developed air transport infrastructure and service are crucial to competing successfully. Moreover, a major obstacle to attracting visitors to protected areas is political instability and civil unrest.

In this section we concentrate on the contribution of aviation to protected areas and social sustainability through facilitating the development of nature-based tourism in Africa. In the last two decades there has been a significant increase in tourist flows whose main motivation is visiting world heritage sites, national parks and other protected areas. This trend is expected to continue in the years to come. Africa is home to nearly 15% of the total area of protected areas worldwide, giving the continent a valuable comparative advantage in attracting international visitors. The expansion of the nature-based tourist industry could become a significant source of revenues and employment and, at the same time, is an effective mechanism to improve the conservation of protected areas. However, nature-based tourism is a global industry, where an efficient and well-developed air infrastructure and service is crucial to competing successfully.

1. Nature-based tourism and protected areas

A properly regulated tourist industry centred on the natural and cultural assets of a country offers a unique opportunity to improve the conservation of the environment in general and protected areas in particular. There is potential to set in motion a virtuous cycle by which protecting the environment attracts tourism and the development of the tourist industry, which in turn makes it possible to finance the protection of nature and cultural heritage (directly by fees paid by visitors to protected areas and indirectly via general taxation), increasing the benefits of protected areas to the country. Moreover, tourist income from popular protected areas can be used to help finance other areas that cannot attract so many tourists or where large visitor numbers would be inappropriate.

Nature-based tourism (including ecotourism, rural and agro-tourism, adventure tourism, and cultural tourism) has become increasingly popular over the last two decades, both with conservation and development organisations looking for means of generating an income from protected areas, and with tourists from industrialised countries looking for new experiences. The expansion of travelling in general has been supported by the proliferation of long-haul air flights resulting in a significant increase in the frequency of flights and destinations and a fall in the cost of air transport. This form of tourism is already a large and growing part of the economies in many developed and developing countries, including Canada, the US, Australia, New Zealand, Kenya, Tanzania, Costa Rica and Botswana. For instance, protected areas are the backbone of the successful ecotourism industry in Costa Rica – which currently generates over US\$1 billion per year (about 5% of GDP).

Financial contributions originating in the private sector are key to the future of protected areas since many of the public agencies in charge of their management lack appropriate funding to cater for increasing conservation demands. As reported in Lindberg (2001), the International Union for the Conservation of Nature and Natural Resources (IUCN) calculated that in the early 1990s protected areas' budgets worldwide covered only 24% of the estimated resources needed to provide adequate maintenance for the areas. The shortfall of public funding for conservation affects developed and developing countries equally. However, the need for resources to fund protected areas effectively is most acute in African countries, where widespread rural poverty coupled with declining national economies severely undermine the government's capacity to support conservation. Thus, while the cost of effective conservation of protected areas in Africa is, on average, in the range of US\$200-230 per km², the conservation budgets for many African countries in the early 1990s – with the exception of South Africa, Zimbabwe and Kenya - were generally totally inadequate. For example, annual expenditure on protected areas by km² in Zambia was estimated at US\$23 and in Uganda at US\$47 (Lindberg, 2001).

One response to the shortage of public funds is to develop market solutions to generate resources to contribute to local (particularly rural) and national economic development, while at the same time introducing incentives for the conservation of protected areas and the preservation of biodiversity by creating economic value for endemic and endangered species in natural habitats. In particular, nature-based tourism offers a unique opportunity to mobilise the resources required to fund protected areas and to modernise and strengthen the institutional and legal framework supporting the conservation of the environment.

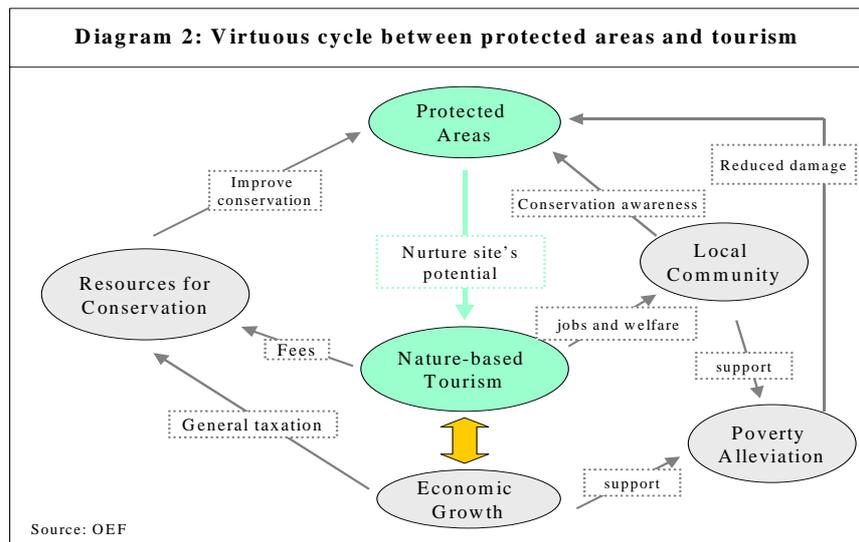
2. Protected areas as engines for development

African nations have created over 2 million km² of protected areas (national parks, forest reserves and game reserves) covering more than 8.6% of the continent's land area. The extension of protected areas in the continent reflects both the vast size of Africa and the high level of commitment by African nations to biodiversity, conservation and sustainable development. This provides a significant opportunity for economic development, particularly in rural areas.

The potential for tourism and protected areas to foster sustainable development in African countries has been emphasised by IUCN. In addition to making a direct contribution in terms of revenues and employment, the facilities and services required for the development of tourism can also benefit the living conditions of local residents in terms of improved

communications, training, education and health care (IUCN, 1999). It can also lead to the creation and modernisation of legislative and regulatory instruments aimed at protecting the environment – by reforestation and soil-conservation practices and rehabilitation of affected natural areas -and to improving community participation and awareness of the importance of conservation.

Tourism based on protected areas can be a key factor in supporting the conservation of the natural and cultural heritage of African countries. It has the potential to generate funds through entrance and service fees, lodging, food provision, handicraft sales and local taxes. This can provide an important complement to donations received from international and regional funds and conservation organisations. For example, South Africa has seen a dramatic expansion of its tourist industry in recent years based on the country’s nature and cultural richness. According to Eagles (2001), 60% of the 5.5 million tourists who arrived in South Africa in 1997 visited a national park or game reserve. This has become an important source of income, generating funds to cover a large part of the cost of administering the country’s protected areas.



One of the main IUCN recommendations to improve conservation of protected areas in Africa is to make their management more market-oriented and less dependent on government sources. The benefit in promoting private initiatives is vividly illustrated by the experience of the Kasanka National Park in Zambia (see Case Study 5, p.62). By the mid-1980s Kasanka was in danger of becoming another defunct national park due to rampant poaching. In order to stop the rapid process of deterioration and to rehabilitate the area, the Kasanka Trust was created to raise funds to finance a community-based project. Currently, Kasanka is Zambia’s only national park under full private management and it is entirely reliant on tourism revenue and charitable funding. Since its establishment, the Trust has invested significant resources in improving transport and communications. The Kasanka Trust has succeeded in bringing effective management to the park and in protecting its flora and fauna. Another priority of the Trust is the promotion of education and research in wildlife conservation and to support rural development schemes in the adjacent community.

Moreover, the promotion of nature-based tourism is an effective lobbying tool for favouring nature conservation against extractive and non-sustainable agricultural activities and to increase the sense of ownership and responsibility for natural resources among local communities. The case of the St Lucia wetland park in South Africa shows how conservation-friendly projects can be superior to alternative uses that have the potential to bring economic benefits to the country but at a significant cost to the environment. During the assessment of alternatives for the use of the St Lucia area, there was a mining proposal that, if approved, would have jeopardised the site's application for World Heritage status, reducing its attractiveness to visitors. That would have translated into 20,000 fewer international tourists visiting South Africa each year and the loss of about US\$75 million annual revenue to the national tourist industry (Wells, 1997).

The development of an ecotourism and conservation project in the Budongo forest reserve in Uganda (see Case 6, p.63) is another example of how to preserve protected areas without sacrificing their economic contribution. By the end of the 1980s, the reserve was under serious threat from increased pit sawing, both legal and illegal. The government response was to dedicate half of the forest estates to protective management for conservation, including the development of ecotourism, and the other half to timber production. The conservation value of Uganda's forests was recognised, as was the potential of other income generating uses of forests, especially non-extractive ones associated with the promotion of nature-tourism.

There are also a number of cases that offer evidence of how conservation and tourism can go hand in hand. For instance, the creation in Ghana of the Kakum national park as part of the Central Region Project (see Case Study 3, p.48) has become a magnet for visitors, revenues for the park and employment for the local community, while helping to preserve the country's tropical rain forest. Tanzania presents another story of flourishing tourist activities based on a network of protected natural areas such as national parks and game reserves (protected areas account for 28% of the country's territory) as well as a variety of cultural, historical and archaeological sites. It is estimated that Tanzania earns US\$70 million a year from wildlife tourism and sport hunting, but there is still the need to improve efficiency and transparency in the administration of the tourist sector, foster the creation of small businesses and increase the benefits accruing to rural communities (DFID, 1999).

3. Main obstacles and risks to nature-based tourism

Despite its great economic potential, African countries in general have yet to realise the economic value of their protected areas. Clearly, not all countries are in the same position to take advantage of nature-based tourism. While its contribution to development is increasing in Eastern and Southern Africa, other sub-regions such as West and Central Africa are less likely to be successful in realising their potential.

One of the main obstacles to attracting visitors to protected areas is political instability and civil unrest. Security and safety are paramount to tourist demand, and when wars, revolutions and terrorism occur in a country they have a deep and lasting impact on the tourism industry and on visitors' confidence - also often with repercussions for the reputation of the region as a whole.

Other factors inhibiting the expansion of nature-based tourism in the continent are weak institutions, limited budgets and poorly trained staff. In addition, although there is

considerable legislation relating to protected areas (e.g. Africa Convention for Nature and Natural Resources), a large percentage of this legislation is out of date, and, in many cases, lacks sufficient resources and mechanisms to ensure effective implementation.

In order to be on an equal footing to compete in the global market for nature-based tourism, countries also need to have in place a reliable and efficient air transport infrastructure. The availability of frequent and competitive air services, together with an efficient tourist sector, is a necessary condition for attracting international tourists to protected areas. However, in many African countries the limited number of regional hubs and a poorly developed network of domestic airports is a serious obstacle to the opening up of protected areas to visitors (see discussion on obstacles to the expansion of air services, p.24). One of the factors that explains the success of South Africa in benefiting from the economic potential of its protected areas – and out-performing many other similar destinations in Africa - is the fact that the country has one of the most developed systems of air services in the continent and a relatively well-organised tourist industry.

Despite the advantages associated with nature-based tourism, there are some risks that need to be avoided. One is the destruction of protected areas in the name of ecotourism. An example is the case of the Maasai from Loita Hills in Kenya. The Maasai have been opposing plans to transform an indigenous forest into an ecotourism destination. Part of the problem was that tourism was previously allowed to develop with few controls, resulting in the over-construction of lodges and excessive use of vehicles, leading to social and environmental decay in the host community (Pleumarom, 2001).

Another risk is that the search for large investments could result in establishing mega-resorts in nature reserves, which have the potential to inflict significant damage on the ecosystem. This possibility is illustrated by the Papagallo Gulf project in Costa Rica. The project, worth US\$2 billion – the largest tourist project in the country's history, aimed to build 40,000 hotel rooms covering 2,000 hectares of unspoiled beaches surrounded by tropical forest. The project was frozen due to corruption allegations, violation of legislation and its potential to cause damage to the local environment and to the country's reputation as a leading promoter of ecotourism (Castilho, 1994). These cases stress the importance of strengthening regulations and evaluation of the tourist sector to ensure that the environment, the economy and the local population all benefit from such investments in the sector (see also the Costa Rican experience in promoting ecotourism, p.49).

In summary, the growth potential - particularly for countries in the Sub-Saharan region - and some promising individual cases indicate that nature-based tourism, properly managed, is a win-win solution, where environmental conservation can effectively be combined with economic development in rural areas of Africa. However, a balance needs to be found between, on the one hand, the revenue and employment-generating potential of protected areas - implying a large capacity and infrastructure – and, on the other hand, pressures on the environment. This requires that governments in the region invest sufficient attention and resources in managing their natural assets to ensure that nature-based tourism, and tourism in general, achieve their potential in contributing to sustainable development.

CASE STUDY 5 *Kasanka National Park in Zambia*

Kasanka National Park is situated on the south-western edge of the Lake Bangweulu basin. With an area of 450 km² it is one of Zambia's smallest national parks. It is, however, a valuable conservation area, with diverse flora and fauna including many endangered species and exceptional bird life - with more than 400 bird species recorded.

By the mid-1980s Kasanka was in danger of becoming another defunct national park due to rampant poaching. In order to stop the rapid process of deterioration and rehabilitate the area, David Lloyd, a British expatriate, and local farmers set up the Kasanka Trust to raise funds to finance a community-based project. In 1990 the Zambia's National Parks and Wildlife Services Department (now Zambia Wildlife Authority, ZAWA) signed an agreement based on performance, allowing the Trust to manage the park and develop tourism in partnership with the local community. The agreement was renewed in May 2003 for a further five years, with the possibility of extending it up to 2013.

Currently, Kasanka is Zambia's only national park under full private management and it is entirely reliant on tourism revenue and charitable funding. Since its establishment, the Trust has invested significant resources in the construction of roads, bridges, tourist accommodation and facilities. In addition, the development of the project has translated into employment and training opportunities for the local population and improvements in communications and transport. At present more than 100 local people are employed in the park. In order to minimize the impact of the needed infrastructure on the local environment, traditional-style structures with the emphasis on local materials are used, and walking paths and canoeing encouraged. There are also strict controls on the use of resources, pollution, vehicles and staff residences in the park.

Since its foundation, Kasanka Trust has succeeded in bringing effective management to the park and in protecting its flora and fauna. As a result, several species have been recovering from depletion – including hippo, sable antelope and the puku - and the number of elephants and blue monkeys has increased significantly.

Tourism offers an economic rationale for continued protection in the area. By developing infrastructure and tourism, the aim is to make the park self-sustaining and bring benefits to the local community. The ultimate goals of Kasanka Trust are to secure the future of biodiversity in the area and to sustain as well as stimulate the local economy through improved natural resource management.

Roughly half of the costs of managing the Park are raised from tourism revenue – with a turnover around US\$80,000 per year - with the balance coming from charitable support (eg the Holly Hill Trust in the UK). Kasanka Trust distributes 5% of its tourism revenue to support community projects, helping the community to see a direct benefit from every visitor to the park. Most importantly, the local community has been encouraged to develop income-generating projects through sustainable use of their natural resources, including wildlife, fish, timber and other forest products in the 'Game Management Area' outside the national park.

Other priorities of the Trust are the promotion of education and research in wildlife conservation and the support of rural development schemes in the adjacent community. In particular, the education service in areas surrounding Kasanka is in a critical state. The Trust believes that education is the key to development of the areas and that without it little progress can be made in conservation or natural resource management. The funding for these activities comes from a number of sources, including foreign governments, charities, individual supporters and tourists.

Sources: Kasanka Trust website and World Tourism Organization (2001)

CASE STUDY 6 *Budongo Forest Ecotourism Project in Uganda*

The development of an ecotourism and conservation project in the Budongo forest reserve in north-western Uganda is an example of how to preserve protected areas without sacrificing their economic contribution to the country. In addition, it shows the advantages in involving local people in the management of forest reserves and the opportunities open for local communities to benefit from the protected areas.

Budongo forest reserve is a mixture of tropical high forest with a large population of mahoganies and savannah grasslands and woodland. The reserve covers 825 km², making it Uganda's biggest forest reserve. It is of exceptional biodiversity importance with 465 tree species, 366 bird species and 289 butterfly species recorded so far. The forest also contains what is likely to be the largest population of wild chimpanzees in the country, estimated to be close to 800 individuals.

Timber management and extraction, mainly of mahogany species, started in 1920 and has continued up to today. Saw-milling firms were given exclusive felling rights to exploit timber resources. Local people were allowed to extract their traditional non-timber forest products, but were not given felling licenses, and some areas within the reserve were declared off-limits, being set aside as nature reserves. Until recently, the timber business provided a large income for the extracting companies and some tax revenues for the country, but it left few benefits for the people living closest to the forest.

In 1988, the Forest Department started to reassess its management of Uganda's forest estate, with the initiation of the Forest Rehabilitation Programme. By then, it was evident that there were serious threats facing the reserve in the form of illegal pit sawing. In addition, the official logging proposals - in line with previous policies that tended to emphasize timber extraction - were also a source of concern. Under the new programme, half of the forest estates were dedicated to protective management for conservation, and the other half to timber production. The conservation value of Uganda's forests was recognised, as was the potential of other income-generating uses of forests, especially non-consumption ones such as ecotourism.

As part of the government's rehabilitation and conservation plan, the Budongo Forest Ecotourism Project was created in 1993. The main objectives of the project are: to encourage conservation of the forest reserve at a local level by deterring illegal use of the forest and by increasing the local communities' involvement in the management of the forest reserve; and to improve the living standards of local people by maximising their financial return from ecotourism. At a national level, the project forms part of a wider strategy of promoting sustainable tourism to encourage forest conservation and increase the returns to the government from the country's forest reserve.

The ecotourism project comprises the development of two sites with great potential for attracting tourists: the Kaniyo Pabidi, an unlogged and isolated block of the Budongo reserve with an all year round resident chimpanzee population, and Busingiro, a forest block that has been logged and is very suitable for sighting monkeys and birds. The two sites have the added advantage of being easily accessible from the two main roads going through the forest. Both areas were officially opened to the public in 1995, and visitors have steadily increased since that time – reaching an average of 1,000 visitors per year during 1998-2000. As a result of the ecotourism development in Budongo, illegal pit sawing activities have been reduced significantly, while the community's standard of living has improved. However, the economic potential of the project has been undermined by the general insecurity in the country and an unfavourable international image.

Sources: World Tourism Organization (2001) and Langoya & Long, (1997)

VII. COMPANY CASE STUDIES

Key Points

We have canvassed views on Africa's air services from a number of companies operating in the region. While not a wide-ranging survey, this highlights a number of practical concerns, most notably:

- The lack of direct flights at reasonable frequency between African countries and the very poor service available within individual countries
- The cost of air travel
- The quality of airlines and aircraft safety

However, Africa's international air services are generally considered to be good.

The problems with Africa's air services are perceived to be having some limiting effect on companies' ability to expand and willingness to invest in Africa. In particular, poor air services make it difficult for companies to oversee and supervise their African operations, while travel is constrained by high costs and the infrequency of services, which can mean extended stopovers.

1. International Fast-Moving Consumer Goods Producer

We interviewed three senior managers from this multi-national consumer goods producer. While the company is headquartered in London, it has subsidiaries and operations in 15 different African countries. Air services are used extensively for visits to/from headquarters. London-based staff typically visit more than one country on an African trip, and therefore make considerable use of inter-regional air services. The most popular routes used include London-Lagos, London-Cape Town, London-Nairobi, London-Accra and London-Duala.

The company's use of air services has apparently increased somewhat over the last five years and is expected to continue to do so over the next five years too, although it is making greater use of video-conferencing and the internet/email to reduce the need for air travel to a limited extent. The general perception is that international air services to/from Africa are good but that services between African countries are poor and those within an individual country are very poor. Particular concerns include:

- The lack of direct flights at reasonable frequency between African countries. One example highlighted was travelling between Kenya and Cameroon, which can take three days, wasting valuable business time.
- Delays and cancellations to flights, especially given the poor quality of terminal facilities, ATC technical problems and airline inefficiencies. Interviewees stressed that it is difficult to work in African airports because of the poor facilities and concerns about safety (e.g. laptops being stolen).
- The cost of flights to/from Africa is also seen as a very serious problem.

However, neither aircraft safety nor air traffic control were seen as significantly problematic.

The quality of air services in Africa is perceived to be limiting the company's ability to expand in the region. This is mainly because it makes it more difficult for HQ staff to supervise investments and operations in the continent.

The interviewees would particularly value an increase in the number and frequency of direct air links to London, particularly from West Africa (where currently it is often necessary to travel via Paris). They would also value an improvement in the frequency and coverage of routes within Africa (eg Nigeria-Kenya, Ghana-Nigeria, Cape Verde-Senegal).

The interviewees believe that the increased development of air services in Africa would help to improve the region's economic situation considerably. In particular, they highlighted the importance of air services to expanding foreign investment and tourism. However, the high cost of hotels in Africa was highlighted as a constraint, together with concerns about personal safety travelling between airports and hotels.

2. African Power Transmission Company

This power transmission company is based in Zambia and air services are used extensively for travel within Africa and occasionally to North America, Western Europe and Asia/Pacific. The most popular international routes used include Ndola-Johannesburg, Lusaka-London, Johannesburg-London and Ndola-Lubumbashi. The most popular national route is Ndola-Lusaka. Air services are used primarily for meetings with customers, both within Africa and internationally, meeting with suppliers in Africa and to develop new markets.

The company's use of air services has apparently increased somewhat over the last five years and this is expected to continue over the next five. However, roads could be used in the future to replace the need for some air travel, and the use of video-conferencing and the internet/email could replace air services to a limited extent.

The general perception is that international air services to/from Africa are good, with services to other African countries being satisfactory. But services within individual African countries are poor. Particular concerns include:

- Absence of direct flights and infrequency of services on routes between African countries.
- Aircraft safety and the quality of African airlines and air traffic control.

The quality of air services in Africa is perceived to be both limiting the company's ability to expand and discouraging it from increasing its investment in Africa because of difficulties in meeting with African development parties. The improvements in air services that would best meet this company's requirements include:

- An increase in the number and frequency of direct flights within Africa, particularly between Ndola-Lubumbashi, Ndola-Harare and Ndola-Kinshasa.

- Improvements in both the quality of airlines and aircraft safety.

The interviewee believes that the increased development of air services in Africa would help to improve the region's economic situation considerably, although it would have no impact on the living standards of the region's poor. He also expects that it would have a small detrimental affect on the African environment.

3. African Import/Export Company

This import/export company is based in Egypt and air services are used extensively for travel to Western Europe, primarily for meetings with suppliers outside of Africa. The most popular international routes used include Cairo-Dusseldorf, Cairo-Hanover, Cairo-Hamburg and Cairo-Frankfurt.

The company's use of air services has apparently increased somewhat over the last five years and is expected to increase substantially over the next five. Video-conferencing and the internet/email could not be used to replace air services, nor could alternative transport services.

The general perception is that international air services to/from Africa are satisfactory, as are domestic services within individual African countries. Particular concerns include:

- The cost of flights, which is considered to be very serious.
- The absence of direct flights on routes between African countries, and infrequency of services where routes exist.

The quality of air services in Africa is perceived to be limiting the company's ability to expand because transport costs are too high. They are also discouraging the company from increasing its investment in Africa – the interviewee asked “How can I build subsidiaries in COMESA states when transport is too expensive?”

The most important improvement this company would like to see in air services is a reduction in cost of flights to both international and African destinations. In addition, it would value:

- An increased number and frequency of direct flights within Africa.
- An improvement in the quality of airlines, aircraft safety, air traffic control and terminal facilities.

The interviewee is trying to open up new markets in Africa. The creation of COMESA has spurred the company to expand and it has found many interested customers. But transporting goods by sea is too slow and expensive, and airfreight could be a valuable alternative. Cheaper and more frequent air services would also reduce the need for long and expensive marketing trips.

4. African Travel Agency

This travel agency is based in Egypt, with operations in both Kenya and South Africa. Air services are used extensively for travel to North America and Western Europe, and occasionally to the rest of the world. Air services are used primarily for meetings with customers outside Africa, meetings with suppliers both in Africa and internationally, and to develop new markets. The use of the internet/email could replace air services to a limited extent, but not video-conferencing or other means of transport.

The general perception is that international air services to/from Africa are good, with services to other African countries being satisfactory. But services within individual African countries are reported as poor.

The company's main concern is the limited range of air services available between Egypt and other African countries, and this is perceived to be having some limiting effect on its ability to expand.

The most important improvements in air services this company requires is therefore an increased number and frequency of direct flights within Africa, particularly Cairo-Johannesburg and Cairo-Nairobi. In addition, it would value an increased frequency of flights to international destinations via Egypt, particularly Johannesburg to Europe via Cairo, and Nairobi to Europe via Cairo.

The interviewee believes that the increased development of air services in Africa would help to improve the region's economic situation considerably, both by increasing the number of tourists and facilitating increased business travel. These in turn will encourage job creation.

5. African Competitive Intelligence Services Company

This service company is based in South Africa, with operations in a number of other African countries, including Angola, Botswana, Kenya, Malawi and Namibia. Air services are used extensively for travel to Western Europe and within Africa, and occasionally to North America. The most popular routes used include Johannesburg-London, Johannesburg-Brussels and Johannesburg-Frankfurt. Air services are used primarily for meetings with customers, both within Africa and internationally, and to develop new markets. However, it is thought that video-conferencing could be used in the future to replace the need for air travel to a large extent.

The general perception is that international air services to/from Africa are good, with services to other African countries being satisfactory. But services within individual African countries are reported as poor. Particular concerns include:

- The absence of direct flights and infrequency of flights to routes between African countries and international destinations.
- The cost and delays to flights.
- The quality of the airlines, aircraft safety and air traffic control.

The quality of air services in Africa is perceived to be discouraging the company from increasing its investment in Africa. The interviewee believes that smaller aircraft offering more frequent flights to a wider range of destinations at more affordable rates would be economically beneficial to Africa. However, he is sceptical that the increased development of air services would help to improve the region's economic situation.

6. African Management Consultancy Company

This consultancy company, based in South Africa, uses air services extensively for travel within Africa and occasionally to North America, Western Europe, Asia/Pacific and the Middle East. The most popular international route used is Johannesburg-London, while the most popular routes within Africa are Johannesburg to Durban, Cape Town, Swaziland and Lesotho. Air services are used primarily for meetings with customers, both within Africa and internationally, and visits to/from head office and other company sites.

The company's use of air services has apparently increased somewhat over the last five years and this is expected to continue over the next five. However, video-conferencing could replace the need for much air travel in future, while roads and the internet/email could be a replacement for air services to a limited extent.

The general perception is that international air services to/from Africa are good, while services within individual African countries are satisfactory. But again services to other African countries are seen as poor.

The interviewee believes that air services in South Africa are first world, but that air services in countries such as Nigeria, Zimbabwe and Zambia are very inferior. In particular, he would like to see:

- Reductions in the cost of flights within Africa and to international destinations.
- A reduction in the extent of flight delays on African airlines.

7. African Property Development Company

This property developer, based in South Africa, uses air services on an occasional basis to travel to North America, Western Europe, Asia/Pacific, the Middle East and elsewhere within Africa. The most popular routes used include Cape Town to Portugal, Spain, London, Malaysia and Australia. Air services are used primarily for meetings with customers outside of Africa, to develop new markets and for visits to/from subsidiaries.

The company's use of air services has apparently increased substantially over the last five years and this is expected to continue over the next five. However, the internet/email could be used in the future to replace the need for air travel to a large extent, with roads and video-conferencing being used to a limited extent.

The quality of air services in Africa is perceived to be limiting considerably this company's ability to expand, and is also discouraging it from increasing its investment in Africa. This is apparently because poor air services make it difficult for both tourists and investors to visit

the region. The improvements in air services that would best meet this company's requirements therefore include:

- An increase in the number of direct routes within Africa, together with more flights to international destinations - particularly Cape Town to London, Lisbon, Singapore, Australia, New York, Mozambique, Angola and Malawi.
- A reduction in costs of flights within Africa, together with reduced delays.
- Improvements in the quality of airlines and aircraft safety.

The interviewee believes that the increased development of air services in Africa would improve the economic situation considerably, whilst having no effect on the African environment. He also believes that most countries are neglecting their airports and facilities, which makes it difficult for companies to pursue business interests in new areas.

VIII. POLICY RECOMMENDATIONS FOR AIR SERVICES IN AFRICA

Key Points

The first objective must be to ensure significant improvements in aviation safety and security across Africa. Service regulation should be separated from service provision. Oversight functions on the implementation of rules and regulations should be exercised independently from companies and other government bodies, which they target. A common platform for cooperation at regional and sub-regional level is essential for the functioning of the air transport system. Its aim is also to create a level playing field in which airlines and infrastructure providers operate according to the same safety and security standards across national borders.

The 1999 Yamoussoukro decision to liberalise air services across the continent should be fully implemented. Besides establishing the appropriate bodies and mechanisms to translate this decision into action, governments should refrain from using airlines and airports as easy targets for new revenues. They should only charge them those costs which are strictly justified in the provision of essential supplies and services.

Trade talks at the WTO should focus on the needs of poorer countries and phase out import restrictions and trade distorting measures in developed countries, especially in agriculture.

African States should foster policies that promote nature-based tourism. Ecological tourism attracts a new type of clientele more protective of nature, benefits the environment, generates employment and strongly contributes to the national product. Sustainable development also needs a good balance between governmental and private initiatives, central and local decision-making and between economic, social and environmental considerations. This will also contribute to policies helping the poor to adjust to global warming either by making a living from tourist receipts or by benefiting from improved working conditions.

1. Safety and Security

- The first priority should be to ensure significant improvements in aviation safety and security in the continent as a whole. Without such improvements, liberalization of air transport, as decided by the States parties to the Yamoussoukro Decision of 1999, will be held back with further negative impact on economic growth. Tourism demand, especially foreign, will be constrained.
- In parallel, long-standing deficiencies on the implementation of safety standards and safety oversight would be better rectified through regional and sub-regional cooperation. The establishment and, where they already exist, the further empowerment of common platforms will ensure that airlines and infrastructure providers can operate according to the same standards, rules and regulations across national borders.
- ICAO's safety and security audits of civil aviation authorities should be further expanded so to stimulate better compliance in the implementation of international standards across all African states.

ICAO has by now audited all but two of the 23 States of the Communauté Economique et Monétaire Afrique Centrale (CEMAC) and the Economic Community of West African States (ECOWAS) and reached the conclusion that further progress and sustainability of safety oversight and to a lesser extent security programmes can only be assured if sufficient funds are made available by governments and the international financial sector.

- Most Civil Aviation Authorities (CAAs) in the region are now autonomous though the level of autonomy varies in substantive degree. Efforts should concentrate on the separation of service regulation from service provision. The independence from providers of services will put the civil aviation authorities in a better position to guarantee a true safety and economic oversight.

ICAO's proposal for implementing Cooperative Development of Operational Safety and Airworthiness Projects (COSAP) sets out the roadmap on how individual States can restructure their CAAs so that they become financially and technically independent and create an environment and expertise which is essential in the delivery of high quality safety oversight. The proposal has been approved during the Coordination and Monitoring Committee and Council of Ministers meeting held in February 2003 in Togo, Lomé. Implementation will now depend on the availability of funds and contributions made by international institutions, such as the World Bank and the IDA.

- In parallel, IATA should put emphasis on African airlines adopting its new operational safety audit programme (IOSA) and support external funding of dedicated training projects.

Airline operational safety audits play an important role in further improving industry safety performance. With the increasing number of industry audits associated, for example, with code-share, there is much scope to improve the effectiveness of airline audits and at the same time to reduce costs.

2. Infrastructure Improvements

- The use of satellite and data-based technologies (new ATM-CNS) offers the most cost-effective way to upgrade and modernise the provision of Communications, Navigation

and Surveillance infrastructure and the management of the African airspace. Political leadership should continue to accelerate current efforts.

Africa is on the right track in these areas:

- In what concerns provision of ATM, significant integration exists for many years in the ASECNA area and in some other States. As said earlier, efforts are now indispensable with a view to separating service provision for regulatory and oversight functions;
- At the level of communications, good cooperation and integration exist at the level of VST networks. Further efforts are necessary to encompass the whole continent;
- In the provision of navigation, a well-developed regional strategy for transition to a fully satellite based (GNSS) navigation has been adopted by governments. Efforts and political will are necessary to achieve full implementation of this strategy.

- Governments should refrain from using airlines and airports as easy targets for new revenues. They should only charge them those costs which are strictly justified in the provision of essential supplies and services.
- Developed countries and development-financing institutions (World Bank, regional development banks etc.) are normally available to support the upgrading of airports and air navigation services where these are based on proved cost-benefit and have the support of the users.

The *Safe Skies for Africa* initiative is seen as a key part of the US's foreign policy towards the continent. To this end, the US offers technical assistance and funds safety and security reviews. To date, US experts have visited eight countries under the initiative (Kenya, Ivory Coast, Tanzania, Cape Verde, Namibia, Cameroon, Mali and Angola).

The *New Partnership for Africa's Development* (NEPAD) is another initiative launched in 2002 to foster development on the continent. One of the NEPAD priorities is precisely to close the continent's infrastructure gap. Governments should find synergies in the area of licensing, ATC, security and safety through the gradual creation of common institutions in order to improve services and develop common standards.

- Technical and financial support should also be provided for strengthening existing national and regional aviation training facilities. Training is indeed a fundamental prerequisite for ensuring that the African air transport and tourism industries have the required resources to flourish.

3. Liberalisation of Air Services

- The latest Yamoussoukro decision (November 1999) should be fully implemented. This means a radical reduction of State control over the industry – including fewer restrictions on fifth freedom traffic rights, frequency of flights, capacity, tariffs and on the number of designated carriers – and putting greater emphasis on the laws of demand and supply.
- To further the implementation of the Yamoussoukro decision on liberalising African air services, countries should aim for a common (or at least coordinated) legal and regulatory framework. This would ensure that the drive for liberalisation is felt across the whole continent.
- Airline ownership rules should be progressively relaxed and state-owned airlines should be freed from political interference over the company management.
- Efficient air transport will stimulate demand both in terms of destinations and number of flights, improve customer service, offer more competitive fares and encourage tourist traffic. This will contribute to the emergence of profitable regional airlines and contribute to the integration of the continent.

A survey conducted with airline customers and travel agents (see p.64-69) indicates that there is a pent-up demand for intra-regional flights and better connections to international destinations. The report also predicts the intra-African routes will outpace the growth of routes between the traditional destinations outside the continent (p. 20/21).

Ethiopian Airlines (EAL) created in 1946, is a good example of an airline anticipating the growth of the regional market. In 1991 its intra-African network already span to more than 20 cities in 18 African countries and the company continues to add new destination to its portfolio such as Brazzaville in the Republic of Congo and Kano in Nigeria three years ago. EAL has also an outstanding safety record.

- Airline code-sharing agreements within Africa and with other partners should be further expanded to boost traffic and tourism and facilitate the participation of African carriers in the larger international alliances.
- Many African airlines need to be restructured before they can become genuine competitors in the global aviation market. The major development-financing institutions and the private sector should support the privatisation of airlines and consolidation efforts within the industry for instance through new alliances and mergers. As in the rest of the world the old type model of the national flag carrier is no longer in line with the concept of a market economy where airlines act as normal businesses independent from states.

Zambia's example indicates that a country can attract adequate air services without a national carrier. Indeed, the money saved from propping up a failing airline might be more wisely spent on improving aviation infrastructure, thus attracting both international carriers and private airlines to the country.

4. *Transport of Goods*

- Africa could benefit from early and complete liberalisation of air cargo. This policy was implemented by India some years ago and has greatly helped that country's export sector.
- Air services within Africa and between Africa and the rest of the world would become more economically viable if trade between Africa and its leading trading partners, Europe and North America would increase.
- Free trade would greatly enhance exporting opportunities from Africa dependant on air or other transport means (mainly shipping). Foreign trade distorting measures and high tariffs on exports to developed states particularly in agriculture substantially restrict African commerce and are one of the main causes of poverty. The International Food Policy Research Institute (IFPRI) estimates that in addition to the US\$24bn lost by poor countries because of trade barriers, US\$40bn could be generated in the developing world if all protectionist measures, including farm subsidies, by the developed world were abandoned. Trade talks therefore should concentrate more on the need of developing nations and they should be resumed quickly after the 4th World Trade Organization summit in Cancun ended in a deadlock and a deep division between the North and the South.
- The increase in trade would mean that more air services are required to transport time-sensitive goods, resulting in better load factors in aircraft use and improvement in revenues by airlines and infrastructure providers.

Examples such as the Trade and Investment Gateway Project in Ghana (Case Study I, p.36) show that the use of free processing and trade areas, free ports and a liberalised skies policy attract investors, especially foreign, to establish value-added facilities in Ghana with high job-creation potential.

5. *Sustainable tourism and development*

- Africa is the home to nearly 15% of the total of protected areas worldwide, giving the continent a valuable comparative advantage in attracting international visitors. Most African states have in place policies that promote tourism and the natural and cultural habitat, to preserve this advantage. These should be further strengthened. For instance, it

is crucial for governments to issue regulations and guidelines towards responsible tourism and to plan well in advance the provision and consumption of water, waste and resource utilisation, local transportation and other similar issues.

The experience of South Africa/Mozambique and Zimbabwe in across border cooperation in the establishment and management of natural reserves is a good example of what needs to be done.

- Environmental policies, encompassing protected areas and nature-based tourism, will also help the poor to make a living from tourist receipts and an improved working environment thus also reducing the effects of global warming on their livelihood which is more directly at risk with expected changed weather conditions.
- Sustainable development needs a good balance between governmental and private initiatives, central and local decision-making and economic, social and environmental considerations. Sustainability goals should be properly communicated to all stakeholders. African governments should
 - i) Be more involved in the branding of their tourist attractions,
 - ii) Encourage private initiatives in an effort to diversify their tourism offer and to allow for widespread job opportunities,
 - iii) Spread the socio-economic benefits of the tourism industry across the whole population, and
 - iv) Empower local communities to help preserve natural sites.

By the mid 1980s Kasanka National Park, one of the smaller national parks in Zambia was in danger of becoming another defunct area due to rampant poaching. In 1990 the Zambia's National Parks and Wildlife Services Department signed an agreement based on performance, allowing a private Trust to manage the park and develop tourism partnerships with the local communities. Since its foundation the Kasanka Trust has succeeded in bringing effective management to the park and protect its flora and fauna (Case Study 5, p.62).

Another example, and this in the public sector, comes from Kenya where good management and restructuring of the national parks service resulted in the control of poaching and in the sustainable development of wildlife.

GLOSSARY

ACI: Airports Council International

ACSA: Airports Company South Africa

AFCAC: African Civil Aviation Commission

AGOA: African Growth and Opportunity Act

ASECNA: L'Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar

ASSET: Association of Small Scale Enterprises in Tourism

ATAG: Air Transport Action Group

ATC: Air Traffic Control System

CAFSAT: Satellite Programme for the South Atlantic Region

CEDECOM: Central Region Development Commission

CEMAC: Communauté Economique et Monétaire Afrique Centrale

COMESA: Common Market for Eastern and Southern Africa

CST: Certification of Sustainable Tourism

DFID: Department for International Development

ECLAC: UN Economic Commission for Latin America and the Caribbean

EIA: Energy Information Administration

ECOWAS: Economic Community of African States

ESOK: Ecotourism Society of Kenya

EU: European Union

FAA: Federal Aviation Administration

FDI: Foreign Direct Investment

FIR: Flight Information Region

GDP: Gross Domestic Product

GIPC: Ghana Investment Promotion Centre

GNSS: Global Navigation Satellite System

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IDA: International Development Association

IFAPA: International Federation of Air Line Pilots Associations

IFPRI: International Food Policy Research Institute

IOSA: IATA's Operational Safety Audit Programme

IPCC: Intergovernmental Panel on Climate Change

IUCN: International Unit for Conservation of Nature and Natural Resources

JIA: Johannesburg International Airport

LDCs: Least Developed Countries

NEPAD: New Partnership for Africa's Development

NGOs: Non-Governmental Organisations

OAG: Official Airline Guide

OECD: Organisation for Economic Co-operation and Development

OEF: Oxford Economic Forecasting

RTA: Responsible Tourism Approach

SADC: Southern Africa Development Community

SARS: Severe Acute Respiratory Syndrome

UN: United Nations

UNAIDS: United Nations Programme on HIV/AIDS

UNCTAD: United Nations Conference on Trade and Development

UNDP: United Nations Development Programme

USAID: US Agency for International Development

UTA: Union des Transports Aériens

WBCSD: World Business Council for Sustainable Development

WDI: World Development Indicators

WTO: World Tourism Organization, Madrid

WTO: World Trade Organization, Geneva

WTTC: World Travel and Tourism Council

ZAWA: Zambia Wildlife Authority

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ANNEX A: MAP OF AFRICA DIVIDED BY SUB-REGIONS AND COUNTRIES



ANNEX B: AIRLINE BUSINESS' SURVEY ON AIRLINE ALLIANCES IN AFRICA

AIR ALGERIE		
Royal Air Maroc		Joint purchasing, plans for codeshare, possibility of developing joint long-haul routes.
Tunisair		Joint insurance purchasing.
AIR MALAWI		
Air Tanzania	1992	Codeshare.
Air Zimbabwe	1997	Codeshare.
Kenya Airways	2000	Codeshare.
AIR MAURITIUS		
Air Austral	1996	Pool agreement.
Air France	1998	Alliance and joint venture.
Air Seychelles	1997	Joint venture.
Air India	1986	Joint venture, Air Mauritius operating.
Austrian Airlines	1995	Codeshare.
Emirates	2003	Codeshare.
Malaysia Airlines	2002	Codeshare.
AIR NAMIBIA		
British Airways	2001	Codeshare.
Comair	2000	Codeshare.
TAAG Angola Airlines	1998	Codeshare, joint catering.
AIR TANZANIA		
Air Malawi	1992	Codeshare.

AIR SERVICES AND SUSTAINABLE DEVELOPMENT IN AFRICA

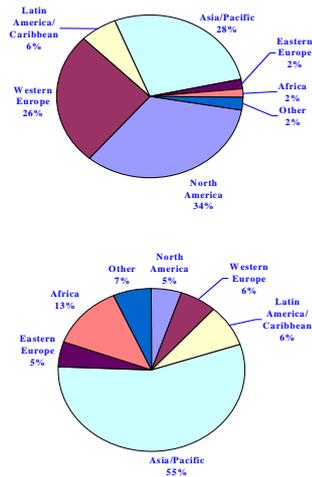
Kenya Airways	2001	Codeshare.
AIR ZIMBABWE		
Air Malawi	1997	Codeshare.
EGYPTAIR		
Austrian Airlines	2000	Codeshare.
Gulf Air	1993	Pool agreement.
Kuwait Airways		The carriers are shareholders in Cairo-based Shorouk Air.
Malaysia Airlines	1997	Codeshare.
Olympic Airways	1983	Pool agreement.
Philippine Airlines	1990	Joint service/block space, Egyptair operating.
GHANA AIRWAYS		
Lufthansa	2002	Codeshare.
Nigeria Airways		Plans to co-operate and for joint operations.
KENYA AIRWAYS		
Air Malawi	2000	Codeshare.
Air Tanzania	2001	Codeshare.
KLM Royal Dutch Airlines	1999	Codeshare.
LINHAS AEREAS DE MOCAMBIQUE LAM		
South African Airways	Start date pending.	Commercial/codeshare agreement.
TAP Air Portugal	2000	Codeshare (free flow).
NIGERIA AIRWAYS		
Ghana Airways		Plans to co-operate and for joint operations.
Middle East Airlines	1971	Commercial agreement.
ROYAL AIR MAROC		
Air Algérie		Joint purchasing, plans for codeshare, possibility of developing joint long-haul routes.
Air France	1997	Alliance agreement, scheduled co-operation and codeshare.
Delta Air Lines	2000	Codeshare.
Gulf Air		Codeshare.
Iberia Airlines	1998	Codeshare.
Tunisair	2001	Codeshare, joint insurance purchasing, and prorate agreement, Royal Air Maroc operating.

SOUTH AFRICAN AIRWAYS		
Air New Zealand	1995	Marketing commercial agreement.
Bmi	1999	Codeshare, FFP.
Cathay Pacific	1999	Codeshare.
Delta Air Lines	2000	Codeshare, South African Airways operating.
El Al	1999	Codeshare.
Emirates	1997	Codeshare, Emirates operating.
Linhas Aereas de Moçambique	Start date pending.	Commercial/codeshare agreement.
Lufthansa	1995	Codeshare.
Qantas Airways	2001	Blocked space codeshare.
Thai Airways	1997	Codeshare, FFP.
Varig		Codeshare.
TAAG ANGOLA AIRLINES		
Air France	1997	Co-operation agreement, unilateral codeshare, Air France operating, FFP.
Air Namibia	1998	Codeshare, joint catering.
TUNISAIR		
Air Algérie		Joint insurance purchasing.
Air Europa	2003	Codeshare.
Air France	1998	Alliance agreement, scheduled co-ordination and codeshare.
Royal Air Maroc	2001	Codeshare, joint insurance purchasing and prorate agreement, Royal Air Maroc operating.
Swiss	2001	Codeshare.

Source: Airline Business, July 2003, pp. 52-72.

ANNEX C: GRAPHICAL ANALYSIS OF ECONOMIC AND SOCIAL BACKGROUND

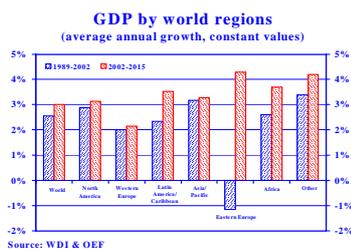
Shares of world GDP and population



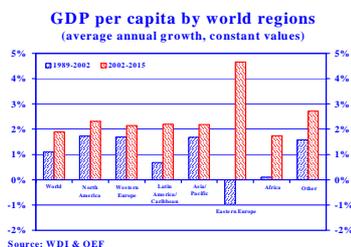
- Africa accounts for just 2% of world GDP...

- ...but it has 13% of the world's population

Growth in GDP and living standards

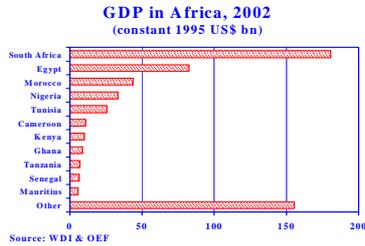


- Africa's GDP has risen close to the world average since 1989, and it is expected to be one of the fastest growing regions to 2015...

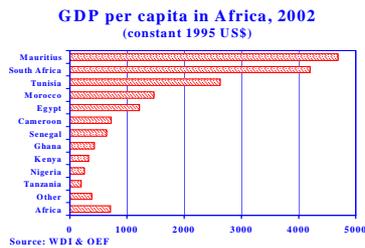


- ...but with population growth relatively rapid, GDP per head has barely increased since 1989. And income per head in Africa is set to grow more slowly than in any other region to 2015.

GDP and living standards by country

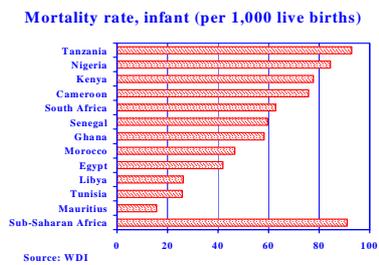


- South Africa is by far the biggest economy in the region.

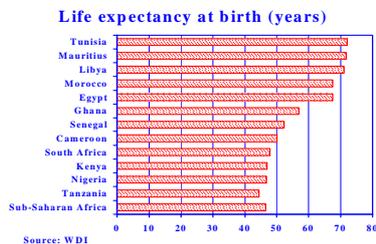


- GDP per head is highest in Mauritius and South Africa, at over \$4,000 a year. But in many countries it is well below \$500 a year.

Life expectancy



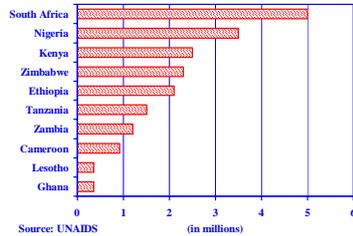
- Africa's poverty is reflected in high infant mortality rates...



- ... and low life expectancy

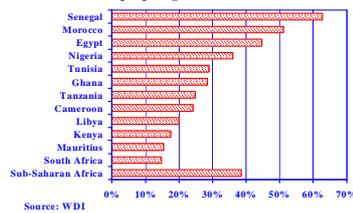
Other social indicators

Estimated number of people living with HIV/AIDS by end-2001



- HIV/AIDS will seriously undermine Africa's development...

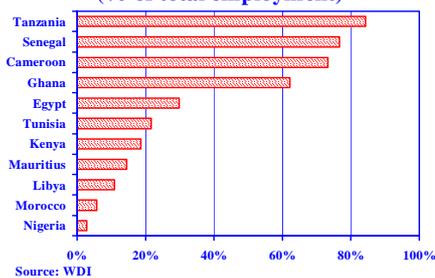
Illiteracy rate (% of people aged 15 and above)



- ...as will high rates of illiteracy.

Agricultural employment in Africa

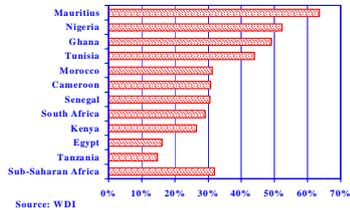
Employment in agriculture (% of total employment)



- Agriculture still accounts for a very high proportion of employment in many African countries, reflecting the poor state of economic development.

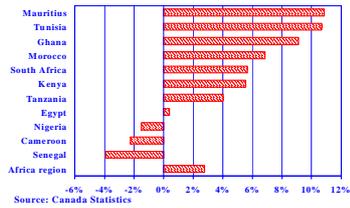
Exports

Exports as % of GDP, 2000



- Many African countries are very open, with exports over 30% of GDP...

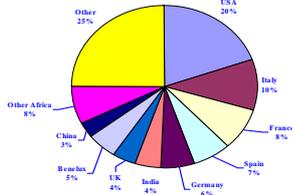
Average annual growth in exports to world from key African countries, 1989-2000



- ...but trade performance has been very poor in many countries.

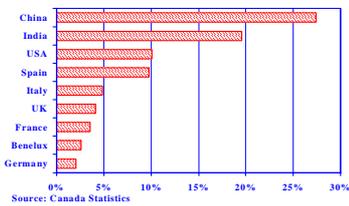
Export trade partners

Main trading partners for African exports, 2000



- The USA is the main market for African exporters...

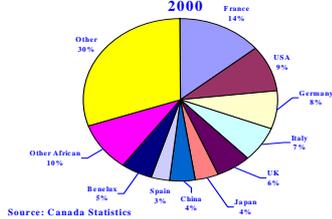
Annual average growth in African exports to top 9 trading partners, 1989-2000



- ...but exports have been rising fastest to China and India.

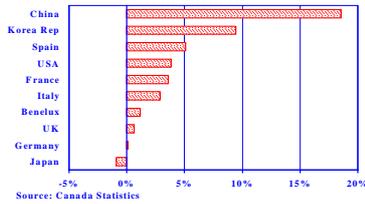
Sources of imports

Main trading partners for African imports, 2000



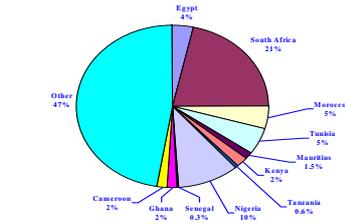
- France is the largest source of imports to Africa...

Annual average growth in African imports from top 10 trading partners, 1989-2000

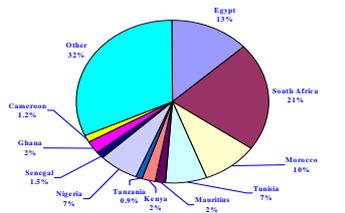


- ...but imports have grown fastest from China and Korea

Export/import shares by country



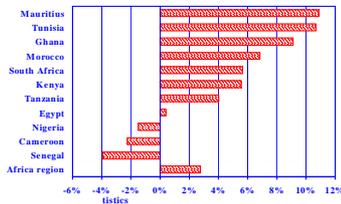
- South Africa is the largest exporter in Africa, accounting for a fifth of total exports...



- ...and the biggest importer

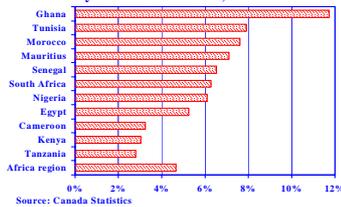
Export/import growth by country

Average annual growth in exports from key African countries, 1989-2000



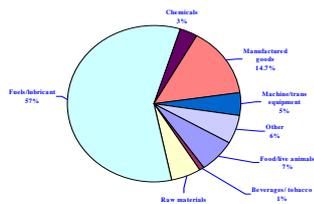
- Exports have been falling in some countries...

Average annual growth in imports to key African countries, 1989-2000



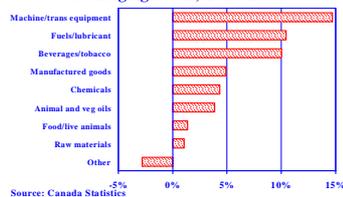
- ...but imports have generally been rising

Exports by commodity



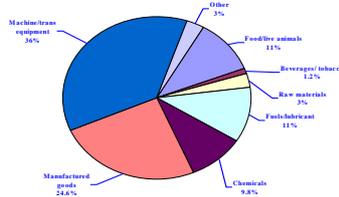
- Africa's main export is oil, but there are also significant exports of manufactured goods...

Growth of exports by commodity, average growth, 1989-2000



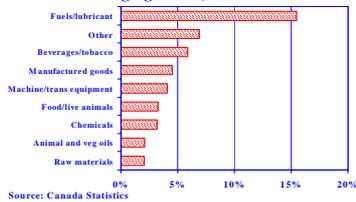
- ...with exports of machinery/transport equipment rising particularly rapidly

Imports by commodity



- Manufactured goods make up the bulk of imports...

Growth of imports by commodity, average growth, 1989-2000

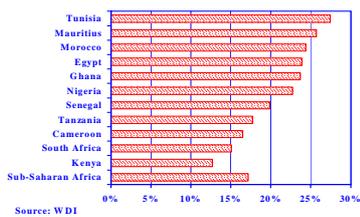


Source: Canada Statistics

- ...but oil imports have increased very rapidly

Investment by country

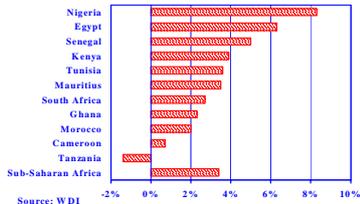
Gross capital formation (% of GDP), 2000



Source: WDI

- Investment as a share of GDP is much lower than in the fast growing developing countries, such as those in Asia..

Investment growth, 1989-2000 (average annual growth, inflation-adjusted)

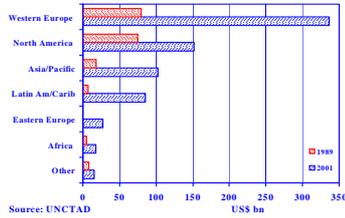


Source: WDI

- ... and investment growth has been subdued since 1989 in most countries

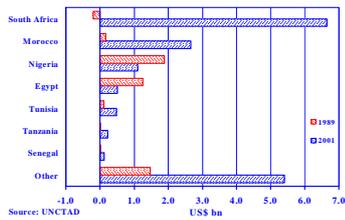
Foreign direct investment

Foreign Direct Investment by region



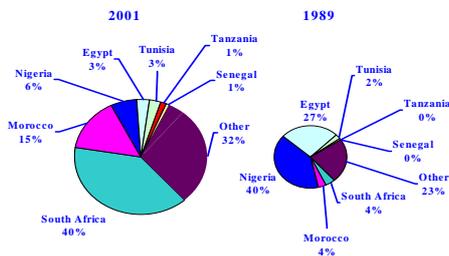
- Africa receives very little inward investment compared with other regions

Foreign Direct Investment by country



Foreign direct investment

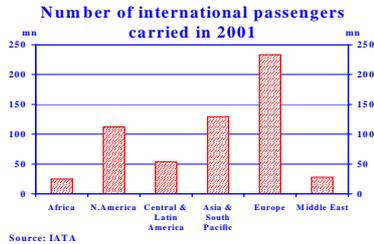
African FDI shares in 1989 and 2001



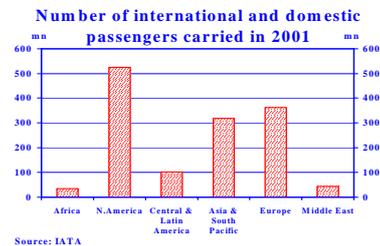
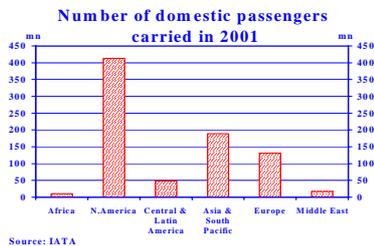
- Most FDI now goes into South Africa
- Nigeria's share of FDI has fallen sharply since 1989

ANNEX D: OVERVIEW OF RECENT TRENDS IN AIR SERVICES AND TOURISM

African air service demand compared



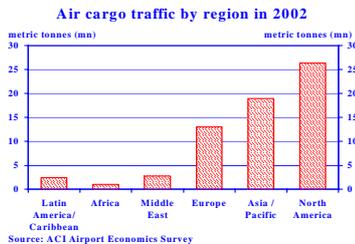
- Africa is the smallest region for air services in the world, reflecting its low income.



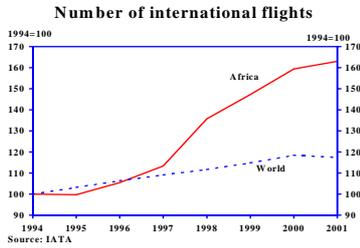
Air cargo use compared



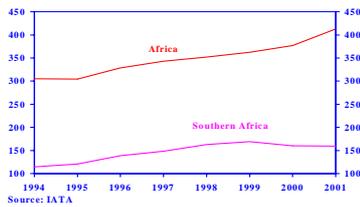
- Air freight carried to/from Africa was only a little less than for central/Latin America and the Middle East in 2001.



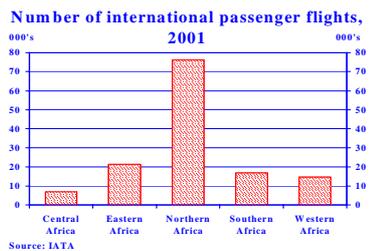
Trends in aviation use in Africa



- Aviation demand in Africa has risen much more rapidly than across the world as a whole since 1994.



International passenger flights by region

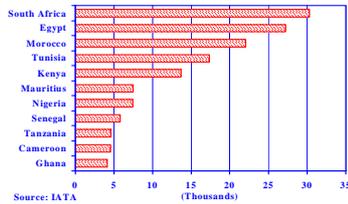


- Northern Africa is the most important region for international passenger flights, even though South Africa is the most important individual country.



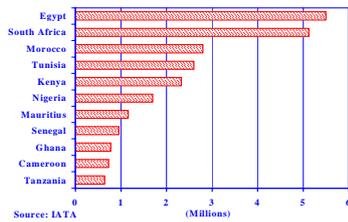
International flights by country

Number of international passenger flights, 2001

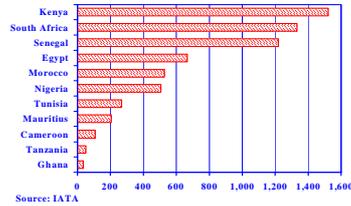


- South Africa and Egypt are the biggest markets in Africa for passenger travel by air
- Kenya is the most important market for international cargo flights

Number of international seats, 2001

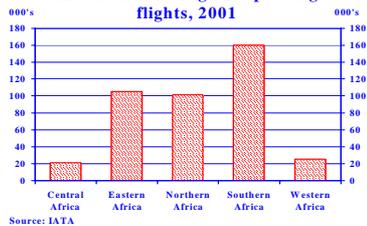


Number of international cargo flights, 2001



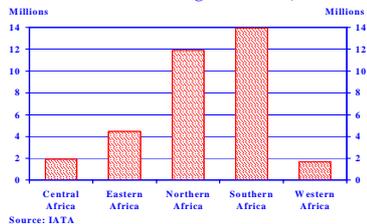
Domestic passenger flights by region

Number of intra-regional passenger flights, 2001



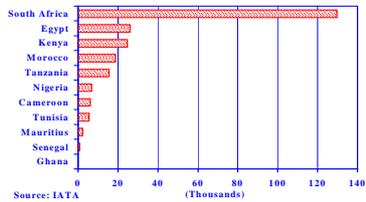
- Southern Africa is the most important region for domestic passenger flights, reflecting the dominance of South Africa in this market.

Number of intra-regional seats, 2001



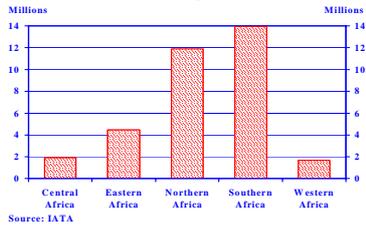
Domestic passenger flights by country

Number of domestic passenger flights, 2001



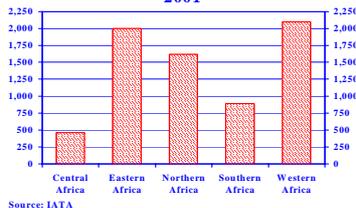
- There are relatively few domestic flights in Africa.
- South Africa has by far the most developed internal network of services

Number of intra-regional seats, 2001



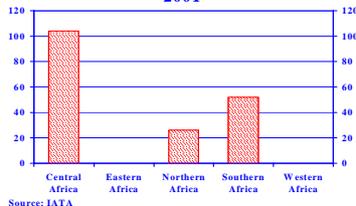
Cargo flights by region

Number of international cargo flights, 2001



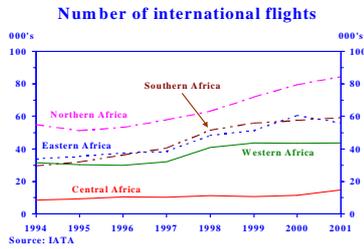
- Western and Eastern Africa are the most important regions for international cargo flights.

Number of intra-regional cargo flights, 2001

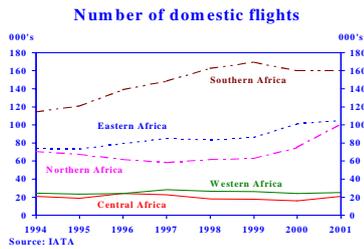


- Central Africa is the most important region for domestic cargo flights.

Trends in flights by region

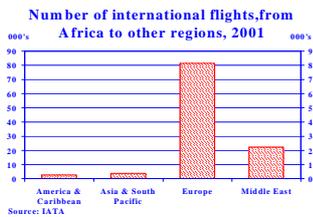


- North Africa has seen the fastest growth in international flights in recent years...

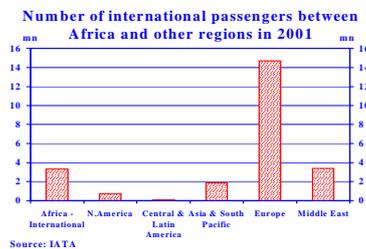
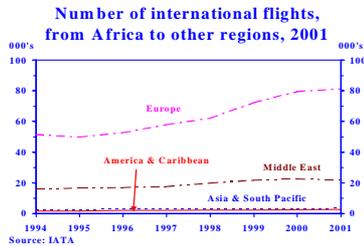


- ...and also in domestic flights.

Destination of African flights

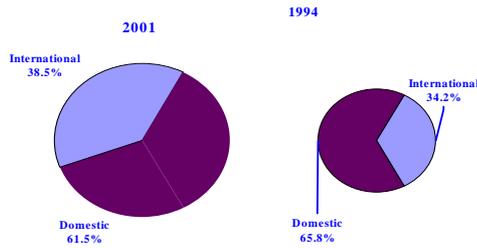


- African international flights are overwhelmingly to Europe.
- There are very few direct flights to America or Asia.



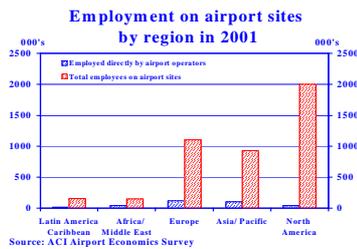
Mix of African flights

Number of passenger flights for Africa in 1994 & 2001

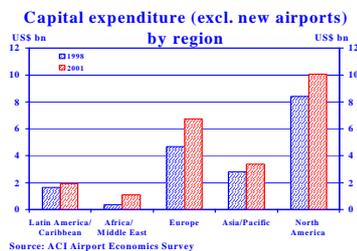


- African flights have become increasingly international over the last decade.

Employment and investment in airports

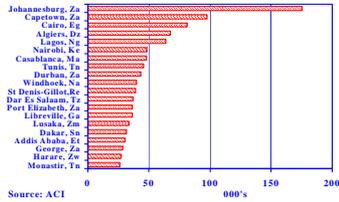


- The low level of demand for air services in Africa is reflected in the level of employment and investment at airports.
- Nevertheless, aviation represents a very valuable source of income for African economies.



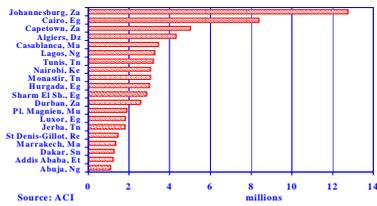
Key African airports

Top 20 African airports by number of aircraft movements in 2002

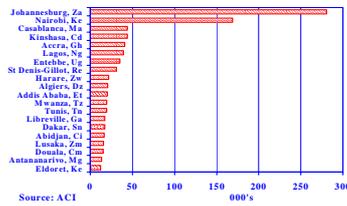


- Johannesburg is the busiest airport in Africa for both passenger and freight traffic.

Top 20 African airports by number of passenger movements in 2002

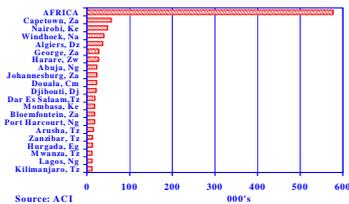


Top 20 African airports by freight handled (metric tonnes) in 2002



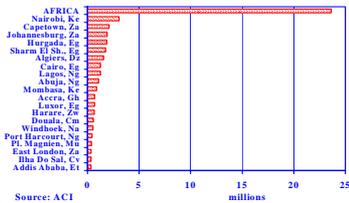
Growth at key African airports

Top 20 increase in number of aircraft movements 1998 - 2002

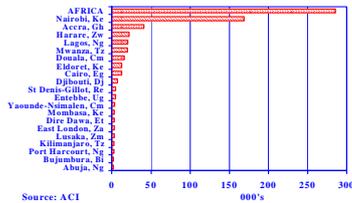


- Capetown and Nairobi have made the biggest contribution to the growth in African air services in recent years.

Top 20 increase in number of passenger movements 1998 - 2002

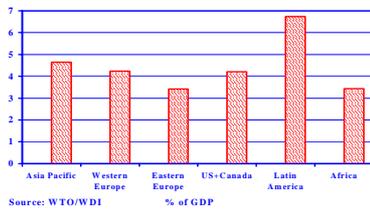


Top 20 increase in freight handled, 1998 - 2002 (metric tonnes)



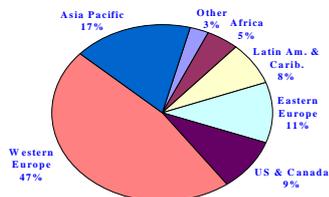
African tourism in perspective

Tourism as % of GDP by regions, 2001



Source: WTO/WDI

International tourist arrivals, market share



- The volume of tourism in Africa is small compared to other regions, both in relative and absolute terms.
- But Africa is the region with the fastest growth of tourist arrivals in recent years. And the continent was one of the least affected by 9/11.

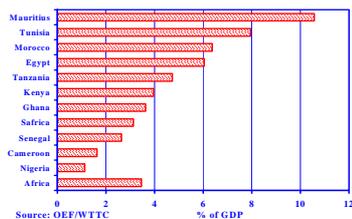
International tourist arrivals by region (annual average growth rate, in %)

	1995-00	2000-01
Africa	6.3	1.8
Latin America & Caribbean	5.7	-3.7
Eastern Europe	2.7	-0.3
US & Canada	2.5	-6.8
Western Europe	5.0	-0.7
Asia Pacific	6.2	5.5
World	4.8	-0.6

Source: World Tourism Organization

Tourism in Africa

Tourism as % of GDP in African countries



Source: OEF/WTTC

International tourist arrivals in Africa (annual average growth rate, in %)

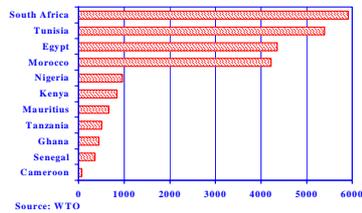
	1995-00	2000-01	Market share in 2000
North Africa	6.6	-1.0	47.1
West Africa	6.8	12.7	8.4
Central Africa	6.3	15.6	1.2
East Africa	5.2	1.5	17.9
Southern Africa	6.6	2.4	25.7
Africa	6.3	1.8	100

Source: World Tourism Organization

- The importance and development of the tourist sector varies across the region. However, all sub-regions have experienced strong growth in tourist arrivals in recent years.
- North Africa and Southern Africa are the regions with the largest tourist industries, whereas Central Africa receives few benefits from tourism.
- Part of the intra-regional disparities is explained in terms of geography and resource availability. Political instability and lack of adequate infrastructure are also important factors.

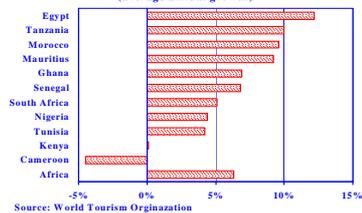
International tourist arrivals

International tourist arrivals in Africa (000's), 2001



- Most tourist visitors to Africa go to South Africa, Tunisia, Egypt and Morocco...

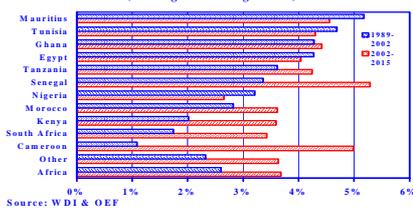
International tourist arrivals in Africa, 1995-2000 (average annual growth)



- ... but tourist arrivals have been rising rapidly in Tanzania, Mauritius, Ghana and Senegal in recent years.

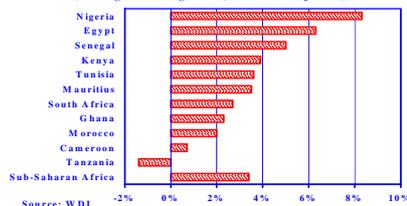
Tourism and economic growth

Real GDP (average annual growth)



- Tourism has been an engine for growth for the domestic economy and employment in a number of African countries.

Investment growth, 1989-2000 (average annual growth, inflation-adjusted)



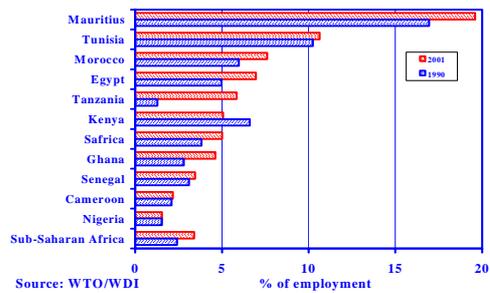
- The African economies with the fastest growth in investment and the highest GDP per capita tend to be those with the largest share of tourism in GDP.

- Tourism has the potential to generate strong linkages with other economic sectors, including agriculture, fishing, construction and craft production.

Tourism and employment

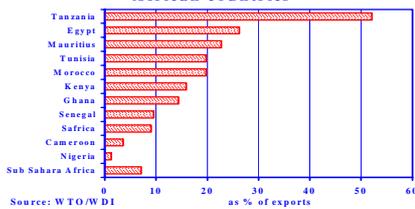
- Tourism activities are human resource intensive, generating jobs with a wide range of skills and often located in rural areas.
- Tourism provides business opportunities for small-size firms as well as for multinational companies.
- In the last decade tourism has increased its contribution to the generation of employment in the region.

Tourism: % on employment in 2001 & 1990

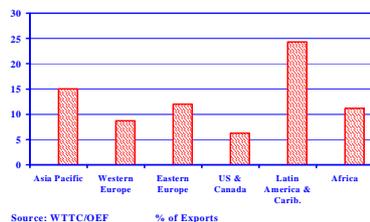


Tourism and exports

Tourism receipts as % of total exports in African countries



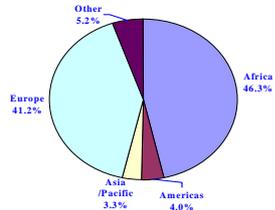
Tourism as % of Exports by regions, 2001



- Tourism is a significant source of foreign exchange and a major contributor to the trade balance in a number of African countries.
- African countries face minimal trade barriers in promoting tourist exports (an advantage over exports of goods).
- While tourism suffers from leakages and demand volatility, there is no evidence that this impact is greater than for other exports.

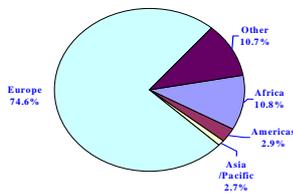
Tourism by origin

International tourist arrivals in Africa, 2000

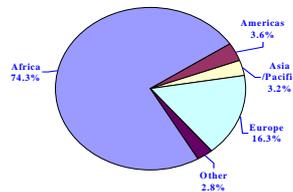


- Most international tourist arrivals originate in other African countries or in Europe.
- Southern Africa has the largest share of intra-regional tourism, whereas most tourists visiting North Africa come from Europe.
- There is a great potential for attracting tourists from North America and Asia.

International tourist arrivals in North Africa, 2000

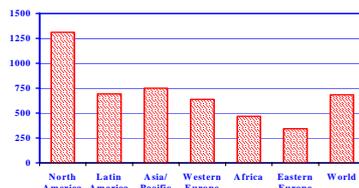


International tourist arrivals in Southern Africa, 2000



Tourist expenditure

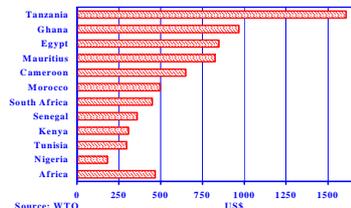
Expenditures per international tourist worldwide, 2000



Source: WTO

- Africa has one of the lowest levels of spending per international tourist by world region.
- However, there are significant differences in spending per tourist within African countries and sub-regions.

International expenditures per tourist in Africa, 2000



Source: WTO

- There is a potential for an increase in tourist expenditure by attracting more visitors, extending the length of stay and increasing the range of products and services offered.

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