

**TRADE RELATED INTELLECTUAL PROPERTY RIGHTS (TRIPS)  
AND AFRICAN ECONOMIC DEVELOPMENT\***

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## ***Part I: Introduction***

Two developments that must influence African perception and concerns about TRIPs – that the creation and utilization of knowledge is becoming the basis of growth and development, and that the creation of knowledge and the ability to adopt and adapt to these changing world conditions will become the basis of competitiveness, growth and development.

Development policies and strategy in Africa have also changed since the 1990s. With few exceptions, from generally inward-looking development policies based on import-substitution industrialization, most countries are now pursuing outward-oriented export-led growth strategies.

Africa must therefore be concerned about the role of the TRIPs agreement in terms of its implications for:

- trade flows and the costs of imports;
- foreign direct investment and access to technology; and
- food security and the competitiveness of its traditional agricultural exports.

## ***Part II: Intellectual Property Rights and Economic Activity in Africa***

### **Research and Development Potential**

A useful indication of the magnitude of resources devoted to the creation of new knowledge and information is a country's expenditure on R&D. This indicates in part the potential for the creation of knowledge, inventions and innovations. It could also indicate the potential for the adaptation and utilization of technologies. Available evidence indicates that compared with an average of 2.0 percent and 0.4 percent of GNP spent on research and development in developed economies and developing economies respectively, Sub-Saharan Africa spent only 0.28 percent of her GNP on R&D in 1997 (see Table 1 below). The evidence also shows only 83 Scientists and Engineers per one million of the population in R&D in Sub-Saharan Africa, compared with an average of 514 for all developing economies (UNCTAD, 1999).

**Table 1: R&D Propensities and Skills in Major Country Groups**

Major Countries and Group of Countries	Scientists and Engineers			Patent Applications Filed		Trade Applications Filed
	Estimated Number	Number per million of Population	R&D % of GNP	Residents	Non-Residents	
				2000	2000	2000
Developed Countries 1/	2,704,205	1,182	1.9%	839,048	4,071,596	1,321,907
Developing Countries 2/	1,034,333	514	0.4%	69,069	4,459,699	472,728
Sub-Saharan Africa	3,193	83	0.3%	210	1,441,602	10,212
North Africa	29,675	423	0.4%	940	86,748	23,781
Latin America & Caribbean	107,508	339	0.5%	940	589,433	113,573
Asia (Excluding Japan)	893,957	783	0.7%	n/a	n/a	n/a
Newly Industrialized Economies 3/	18,492	121	0.2%	n/a	n/a	n/a
South Asia 4/	145,919	125	0.9%	90	119,781	8,448
West Asia	50,528	296	0.5%	n/a	n/a	n/a
China	422,700	350	0.5%	241	2,879	-
Central & Eastern Europe	946,162	1,857	0.8%	26,898	341,636	57,298

Sources: World Investment Report, 1999 (Foreign Direct Investment and the Challenge of Development), UNCTAD, United Nations World Development Indicators, 2003 (The World Bank), Table 5.12 (Science & Technology), pages 302-304

Notes: 1/. United States, Canada, Western Europe, Japan, Australia and New Zealand  
2/. Including Israel, South Africa and former socialist economies in Asia  
3/. Indonesia, Malaysia, Thailand and Philippines  
4/. India, Pakistan, Bangladesh, and Nepal

The importance of TRIPs to Africa cannot be judged by the current structure of production, but by the requirements of its development strategy. There is a huge technological gap between Africa and the rest of the world.

Royalties, licenses and fees are seen as the most direct measure of the payments and receipts on patents, trademarks, copyrights, and trade secrets, etc.. The data confirm Africa's position as a net importer of technology. Payments for royalties, licenses and fees, which also reflect the authorized use of intangible assets, have declined both in absolute and relative terms over the 1990s.

While globally payments for royalties and license fees have increased substantially, payments by Sub-Saharan Africa have declined.

**Table2: Net Receipts on Royalties, License Fees and Foreign Direct Investment**

<b>(a): Royalties, Licenses and Fees</b>	<b>1980</b>	<b>1990</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>2001</b>
Payments (US\$ million)						
World	10,349	33,193	38,347	43,867	52,889	72,356
Sub-Saharan Africa	303	154	162	140	118	69
Gross Receipts (US\$ million)						
World	13,163	35,477	43,868	50,266	59,369	73,148
Sub-Saharan Africa	21	70	78	79	95	236
Net Receipts (US\$ million)						
World	2,814	2,284	5,521	6,399	6,480	792
Sub-Saharan Africa	(282)	(84)	(84)	(61)	(23)	167
Share of Sub-Saharan Africa (%)	-10.0%	-3.7%	-1.5%	-1.0%	-0.4%	21.1%
<b>(b) Foreign Direct Investment</b>	<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>
<b>FDI Inward Stock (US\$ million)</b>						
All Developing Countries	245,819	344,463	484,954	849,915	2,002,173	2,181,249
Sub-Saharan Africa	34,326	35,473	50,291	77,863	142,379	158,840
Share of Sub-Saharan Africa (%)	14.0%	10.3%	10.4%	9.2%	7.1%	7.3%
<b>FDI Outward Stock (US\$ million)</b>						
All Developing Countries	22,058	35,469	90,404	270,925	751,632	776,065
Sub-Saharan Africa	6,878	10,961	23,202	35,606	47,249	44,583
Share of Sub-Saharan Africa (%)	31.2%	30.9%	25.7%	13.1%	6.3%	5.7%
<b>FDI Net Stock (US\$ million)</b>						
All Developing Countries	223,761	308,994	394,550	578,990	1,250,541	1,405,184
Sub-Saharan Africa	27,448	24,512	27,089	42,257	95,130	114,257
Share of Sub-Saharan Africa (%)	12.3%	7.9%	6.9%	7.3%	7.6%	8.1%
Sources: World Bank - World Development Indicators 1999 on CD-ROM for 1980-95 data						
World Bank - World Development Indicators, 2003 (Table 5.12, page 304) for 2001 data						
World Investment Report 2002 (Transnational Corporations and Export Competitiveness), UNCTAD, United Nations						
Based on Annex Tables B.3 and B.4, pages 310-318						

Net foreign direct investment into Africa has increased substantially from an average of US\$1892 million per year average between 1987-92 to US\$7420 million in 1998.

As a percentage of gross fixed capital formation, Africa's performance is similar to other developing countries reflecting the lower levels of gross fixed capital formation in Africa.

### ***Part III: TRIPs, Foreign Direct Investment and Technology Transfer in Africa***

The discussion in the last section showed that Africa will to a large extent be an imitator and a net importer of technology.

In theory, the effects of stronger IPR on FDI and technology transfer are ambiguous. A foreign firm, for instance, with some advantage that it wishes to exploit profitably may proceed as follows: (a). it can exploit its advantage through arms length exports; (b). it can invest directly in a subsidiary or joint venture or (c). license an independent producer in a foreign country. A number of general predictions emerge from both theoretical and empirical analyses of the relations between IPRs, foreign direct investment and technology transfer.

In general it appears that:

1. foreign direct investment and technology transfer are relatively insensitive to international differences in IPRs in industries with old and standardized labour intensive technologies (see Lee and Mansfield, 1996 and Maskus, 1998);
2. foreign direct investment in sectors with complex but easily copied technologies is likely to increase as IPRs are strengthened (Maskus, 1998);
3. to the extent that stronger IPRs reduce licensing costs, by lowering the licenses and expenses of deterring defection from contracts, foreign direct investment could be displaced over time with efficient licensing; and
4. whatever the mode, the likelihood that the most advanced technologies will be transferred rises with the strength of IPRs (Maskus, 1997). This may occur through reduction in costs of licensing, increased security over the protection of proprietary information in licensed and licensor's greater ability to set and monitor terms under which the licensees operate.

Empirical work on the relations between IPRs and FDI and technology transfer in Africa is virtually absent.

The importance of TRIPS in the African context may therefore relate to its influence on perceptions of foreign investors about the African investment environment rather than any direct relations between strength of IPRs and FDI. It is the credibility that compliance and effective implementation of the TRIPs agreement will impart to other efforts to create a hospitable

investment environment that may matter the most.

The one area in which TRIPs will have a direct impact is technology transfer. Both theoretical and empirical works conclude that irrespective of the method of transfers, firms are likely to transfer frontier technology with stronger IPRs.

#### ***Part IV: TRIPs, Trade Flows and Price Effects in Africa***

One of the main areas of concern for Africa with the implementation of the TRIPs agreement is its impact on the price of imports of patented products and the level of trade flows and their balance of payments implications. In theory, the effect of IPR regimes on prices and trade flows is ambiguous. The result depends on the relative importance of the market power and market expansion effects. Stronger IPR could lead to a larger effective market for patented products as the ability of local firms to imitate the product is reduced. There could also be a cost reducing effect if firms have to devote fewer resources to discouraging imitation in the particular market. This market expansion effect could lead to an increase in exports to the market with stronger IPR.

On the other hand, stronger IPR could strengthen the market power of firms for their products in particular markets as competition is reduced (Maskus, 1998 and C.A.P. Bragga et al, 1999). This market power effect could lead to lower exports to and higher price of the patented product in the particular market, with considerable negative welfare implications. Moreover, for net technology importers, the rent transfers from consumers to suppliers may be repatriated abroad.

Available empirical evidence suggests that strengthening IPR may have a significantly positive, though small effect on the volume of trade in manufactures (Maskus and Penubarti (1995). Twenty-one out of the fifty-six developing economies involved in their study were African countries.

Smith (1999) using more refined data finds stronger effects. The results, however, also vary according to the size and threat-of-imitation of the country. The stronger patent rights required under the WTO agreement increase US exports to high threat markets. On the other hand, strengthening patent rights in countries that pose a weak threat-of-imitation reinforces monopoly

power and reduces US exports to these markets.

All of Sub-Saharan Africa, except for Nigeria and South Africa, can be classified as small economies with weak threat-of-imitation. In such a situation, strengthening IPRs tends to lead to higher prices for imports of patented products. The market power effect of strengthening IPRs will tend to prevail.

There is no work done to indicate the extent of price increases and the balance of payments implications of such increases for Africa.

Addressing the downside risks associated with the abuse of monopolistic elements may involve the development of more open and competitive markets, and possibly the use of pro-competitive regulation (Low, 1998). The small size of most African economies may imply difficulties in developing the infrastructure necessary for competitive markets. A regional approach involving several African countries through their regional integration efforts may reduce the handicaps associated with small economies in providing competitive structures. Secondly, and of critical importance, Africa will need policies to accelerate the pace of human capital development and to support technology and knowledge diffusion to overcome its limited technological capabilities.

#### *Part V: TRIPs and Non-Traditional Exports – Ghana*

One of the possible advantages of the TRIPs agreement is that it could be used to promote the development of culture based Non-Traditional Exports (NTE).

Prior to the TRIPs agreement, designs and patterns of kente for instance, were classified under folklore and traditional knowledge. None of the existing IPR conventions provided protection for those designs. There were therefore serious imitations of these products. The consumer could not be assured of the quality of these products since no patent or indication of country of origin existed for these products. With the TRIPs agreement, protection can be provided for these products either under the geographical indications or industrial designs (textile designs). Under proper promotion, national characteristics begin to emerge that will associate certain geographical locations with certain designs and quality.

There are two difficulties with respect to success in this direction. The first relates to the question of ownership. Traditional products are inherited through traditional knowledge that does not belong to the individual and may as well belong to more than one individual in a community within a country.

A second difficulty that has to be overcome is the question of standardization.

### ***Part VI: Plant Breeders Rights (PBRs) and Agriculture***

One possible outcome of this low level of development is that like in technology, African countries could become dependent on imported seed with dire consequences in terms of availability and the costs of seed.

Secondly, small-scale producers dominate African agriculture. This applies to both food production as well as export crop production. Between 65 percent to 99 percent of seed used for sorghum, beans, or cowpeas in Zimbabwe, Ethiopia and Nigeria is what has been saved by the farmer (Jaffee and Srivastava, 1994). Such varieties must meet farmers' ability to maintain these varieties and to produce adequate quality seed through their own efforts.

Seed technologies that will not allow for local reproduction or reproduction by farmers' own efforts may be unsuitable. The dominance of African seed supply by foreign companies will compound the problem of agricultural development.