

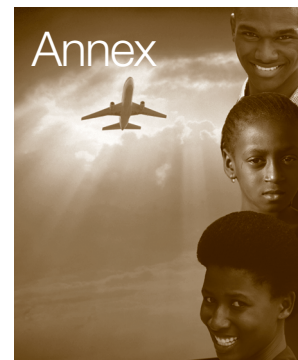
# Measuring Progress on Integration

The treaties creating Africa's regional economic communities set wide-ranging goals in many areas, with an emphasis on trade and macroeconomic integration. To assess regional integration, research for this report examined how close each regional community has come to achieving those goals and the pace of their progress—both individually and relative to each other. The research also gauged the direction and momentum of regional integration. The assessment points to measures needed to strengthen and deepen regional cooperation and integration in Africa.

The research went beyond conventional methods, which measure integration based primarily on trade creation and diversion. Instead, the research covered all sectors involved in regional integration. This complex task required a thorough understanding of how African economies work, the constraints they face, and the forces influencing integration. Because such analysis must be both quantitative and qualitative, a significant part of the exercise entailed developing technically and statistically sound methodological approaches.

The evaluations, based on indicators, measured progress for each sector, for each regional economic community, and for all of Africa. An important part of the analysis involved compiling indicators of integration for each sector. This exercise produced a comprehensive list of indicators—quantitative measures of the effects that various activities, policy measures, and programmes have on regional integration in Africa. The indicators measure the integration of each sector and should not be confused with the sectoral macroeconomic indicators used in aggregate economic analysis. These indicators were used to construct indices of integration for each sector, for each regional economic community, and for all of Africa. The present exercise focuses primarily on quantitative aspects because of data limitations on the qualitative dimensions of regional integration, such as institutions, policy, and process issues. However, the quantitative outcomes are partially the result of qualitative interventions.

The indices are intended to facilitate comparisons of outcomes and performance based on common denominators. The indices help identify and explain reasons for progress on the stated goals of the regional economic communities and assess the overall trends of regional integration in Africa. The indices also help compare efforts and results among member states and regional economic communities.



Constructing such indices is an arduous task, both technically and because of Africa's data constraints (box A1). To facilitate the assessment, the indicators are designed to be simple, measurable, consistent, and comparable over time. Because the main goal is evaluating progress in regional integration, the assessment focused on the eight sectors covered most often by the treaties of the regional economic communities: trade, money and finance, transport, communications, energy, agriculture, manufacturing, and human development and labour markets. (Not every treaty covers every sector explicitly or thoroughly.) Thus the performance of the regional communities is assessed based on both the efforts of their member states and the interventions of the communities. What is being assessed is the overall movement towards regional integration as either a direct result of community programmes or an indirect result of steps taken by other actors.

The exercise assesses the overall movement of the regional economic communities toward achieving the goals and objectives of the African Economic Community, hence its broad coverage. Therefore, it does not limit its focus to comparing the performance of communities towards their specific objectives. The base year for the exercise is 1994—the year the Abuja Treaty establishing the African Economic Community entered into force.

The methodology will benefit from further improvements and refinements. Think of the human development index, launched in 1990 as a complement to GNP per capita as a measure of development. The human development index started from modest beginnings. But continually refined, it was soon regarded as a useful basis for comparing the performance of countries and even parts of countries. The same is hoped for the integration indicators and indices. Even though they are new and have some limitations, they provide a useful basis for discussion, and with time they will be refined to make them even more useful (see annex attachment on methods for details on future refinements). Given this caveat, the next sections present the results obtained from the application of the methodology in its current version.

## How is integration proceeding?

Regional integration in Africa has proceeded weakly and unsteadily across sectors, countries, and regional economic communities. During 1994–99 the average weighted annual increase in the composite regional integration index was 4.5%. But this average conceals significant variations in annual performance. Moreover, the overall rate of integration for this period was heavily influenced by the choice of the base year: 1994 may have been a low-performance year, setting the stage for recoveries in 1995 and 1996. Taking those factors into account, the real increase in the regional integration index was just 1–2% a year between 1995 and 1999. Moreover, there was backsliding between 1997 and 1999.

This lacklustre performance in integration resulted from divergent trends at the regional and sectoral levels. However, the Central African Economic and Monetary Community

## Box A1

### Calculating indices of integration

This assessment of Africa's integration measures progress after the Abuja Treaty establishing the African Economic Community went into effect in 1994. Progress by regional economic communities in the main areas of cooperation and integration is measured on both an annual basis and on average. Communities are ranked by performance on both criteria, though the emphasis is on overall progress.

The indices of integration are based on data collected from member states, secretariats of all 14 regional economic communities, and regional and international organizations. Detailed questionnaires covered integration in eight sectors: trade, money and finance, transport, communications, energy, agriculture, manufacturing, and human development and labour markets. Attention was also paid to water, mining, and cross-cutting issues (such as peace and security, HIV/AIDS, and gender). The questionnaires requested quantitative and qualitative information, including institutional, policy, and process dimensions of integration. In addition, missions on sectoral issues and subregional concerns were mounted to these countries and communities. Significant data gaps in responses had to be filled from other sources, such as the United Nations Conference on Trade and Development and other international organizations. Because the qualitative information was incomplete and not comparable across countries, the analysis focused only on the quantitative data. Future refinements of the indicators will address the qualitative dimension.

Sectoral integration indices were calculated as weighted composites of sectoral indicators—chosen to reflect the intensity or impact of regional integration in each sector. The indicators and subindicators for each sector are in the attachment to this annex. The eight sectoral indices were used to obtain composite integration indices for the regional economic communities and for all of Africa.

Progress by the regional communities during 1994–99 was estimated as a weighted measure of performance in the eight sectors using standard statistical techniques. The weights were the result of intuitive though fairly objective judgements about the relative importance of indicators to Africa's integration agenda. Where a sectoral indicator was constructed from several other indicators, the trend in that sector was calculated as a weighted average of the subindicators. For example, the money and finance indicator is a weighted average of inflation rate, external debt, investment, and budget deficit. In this way a single weighted composite index for the communities is developed as a single time series, with the base year value taken to be 100.

The composite index for Africa is an average, weighted by GDP, of the integration indices for the regional economic communities. It measures the continent's total integration effort, assessing progress towards the integration goals of the regional communities, the Abuja Treaty, and other regional, subregional, and national integration initiatives and policies.

In some cases the base year levels and scores appear low (in trade, for example), which tends to amplify progress in the following years. Thus the indices often show an initial spurt in performance—but this does not affect the rankings. Annual changes in the index measure progress or retrogression and permit comparison among the communities.

An insistence on robust indicators meant that the exercise had to rely on fewer indicators than was desirable. But the indices are a start—and they will be refined as better databases permit more sophisticated analysis. Limited as the data may be, every effort was made to validate the information.

**Source:** *Economic Commission for Africa, from official sources.*

(CEMAC), the Community of Sahel-Saharan States (CEN-SAD), the Inter-Governmental Authority on Development (IGAD), and the Economic Community of Central African States (ECCAS) made good progress on integration in 1995–97, though after that their momentum slowed along with the rest of the continent (table A1).

Such growth was also observed for groups such as the Common Market for Eastern and Southern Africa (COMESA) and the West African Economic and Monetary Union (UEMOA) until 1998. UEMOA, an advanced form of integration, appears to have been consolidating and building on earlier successes, particularly in macroeconomic convergence. Expectations were for it to demonstrate yet stronger commitment on the implementation of agreed decisions. Two other strong performers have been the Southern African Development Community (SADC) and the Economic Community of West African States (ECOWAS). Lagging behind were the Mano River Union (MRU) and the Economic Community of the Great Lakes Countries (CEPGL). Both had erratic and generally weak performance—understandable given the serious instability affecting these regions in recent years. The Indian Ocean Commission (IOC) and the East African Community (EAC) experienced periods of growth and decline, making their close to average returns somewhat unsteady. The Arab Maghreb Union (UMA) showed stagnant performance.

**Table A1**

*Integration indices for Africa's regional economic communities, 1995–99*  
(Index 1994=100)

Regional economic community	1995	1996	1997	1998	1999
CEMAC	129.7	135.7	136.0	134.8	128.4
CEN-SAD <sup>a</sup>	122.9	130.8	133.7	121.2	121.0
CEPGL	90.6	89.5	93.7	91.2	86.6
COMESA	110.1	123.0	125.2	127.2	119.4
EAC	114.7	120.3	118.5	120.5	119.2
ECCAS	124.6	128.1	132.0	126.8	121.7
ECOWAS	117.2	130.8	130.3	136.6	133.9
IGAD	113.0	114.1	120.8	119.8	119.7
IOC	116.2	126.2	118.3	123.8	109.6
MRU	90.2	96.4	119.3	109.3	117.1
SADC	115.6	131.5	131.0	137.2	136.9
UEMOA	117.4	132.3	133.4	138.6	137.1
UMA	101.4	100.4	101.3	99.5	100.4
Simple average	112.6	119.9	122.6	122.0	119.3
Weighted average	114.9	124.7	126.1	125.5	123.6

**Note:** Given the significant component of the trade sector in the calculation of the indices, SACU was excluded from this table. SACU's published trade data are usually aggregated and cannot be used for the calculations.

a. CEN-SAD was formed recently and its results reflect primarily actions of members participating in overlapping regional economic communities.

**Source:** Economic Commission for Africa, from official sources.

At the sectoral level, integration in trade and communications showed encouraging performance. Reasonable progress was also made on transport and macroeconomic policy convergence. But sectors involving production (food, agriculture, and manufacturing) and trade in electricity lagged behind. This pattern points to an area of major concern in African integration—one that should be addressed as a critical priority.

The best-performing regional economic communities had well-developed integration programmes, implemented steadily and effectively by member states. In addition, some of these programmes mitigated financing problems by introducing self-financing mechanisms. By contrast, performance was poor in regional economic communities where activities were disrupted or programmes failed to take off for various reasons—including weak implementation by member states. Moreover, some regional communities exhibited very erratic performance, possibly indicating their high sensitivity to political, economic, and social factors.

On the basis of the integration indices, Africa's regional economic communities can be placed into five groups based on their performance measured in terms of average growth in integration indices in 1994–99:

- Above-average (6% and higher)—UEMOA, ECOWAS, and SADC.
- Average (between 4% and 6%)—CEMAC, CEN-SAD, and ECCAS.
- Close to average (between 2% and 4%)—EAC, IGAD, and COMESA.
- Stagnant (2% and lower)—UMA.
- Volatile (erratic returns)—CEPGL, IOC, and MRU.

Strong trade expansion and above-average performance in the money and finance, transport, and telecommunication sectors explain the faster integration of the top three performers. Besides, their sectoral performances have been steady and broad based. The runner-up groups, showing average or close to average performance, have a differentiated record in sectoral behaviour. Still, they too generally display reasonable growth of intraregional trade, with some (such as CEMAC) showing progressive macroeconomic convergence. Within these groups, COMESA posted particular progress in transport and communications. Extreme volatility characterized the sectoral performances of CEPGL and MRU. As noted earlier, this is closely related to the political instability that engulfed these regions in recent years.

The composite regional integration indices are strongly correlated with the economic policies of individual member countries (table A2). Regional integration is also strongly correlated with robust economic growth, as reflected in the correlation between integration and per capita income. Moreover, integration moves faster when regional economic communities harmonize their efforts—as with ECOWAS and UEMOA, and with COMESA, EAC, and SADC. In such cases broader consensus on regional integration emerges, strengthening results. Political stability is a deciding factor in regional integration, as shown by the lagging performance of CEPGL and

MRU. These differences in performance suggest a need to strengthen efforts to align the protocols of regional communities with those of the Abuja Treaty.

Furthermore, African countries have generally made slow and uneven progress integrating with the world economy, with several countries reversing policies of openness or making weak attempts at liberalization. Table A3 reinforces this point by categorizing a sample of African countries as strong, intermediate, or weak liberalizers. The weak liberalizers have maintained high tariffs and substantial import restrictions. The intermediate liberalizers have histories of limited liberalization, policy reversals, or both.

## Progress on integration by sector

The assessment of integration performance in this section is based on overall trends in sectoral indices. The sectoral objectives in the treaties of Africa's regional economic communities are integral to achieving regional integration and establishing the African Union, especially those related to trade, money and finance, infrastructure, labour mobility, and peace and security.

**Table A2**

*Correlations between composite regional integration indices, economic policy stance indices, and per capita incomes, 1994 and 1999*

Indicator	Medium-term change in composite integration index	Composite integration index, 1994	Composite integration index, 1999	Economic policy stance index, 1999 <sup>a</sup>	Per capita income, 1994	Per capita income, 1999
Composite integration index, 1994	-0.52		0.67			
Composite integration index, 1999	0.17 <sup>b</sup>					
Economic policy stance index, 1999 <sup>a</sup>	0.04 <sup>b</sup>	0.28	0.94			
Per capita income, 1994	-0.03 <sup>b</sup>	0.54	0.46	0.64		
Per capita income, 1999	-0.32 <sup>b</sup>	0.86	0.32	0.55 <sup>b</sup>	0.88	
Five-year per capita income growth <sup>c</sup>	0.76	0.26 <sup>b</sup>	0.77 <sup>b</sup>	0.31 <sup>b</sup>	0.27	0.56

**Note:** Correlation coefficients are significant at the 5% level or less.

a. Indicator of general soundness of macroeconomic policy, including inflation and fiscal policy. Computed by ECA (see ECA 2002).

b. The correlation coefficient is not significant at the 5% level.

c. Average annual growth in real GDP per capita over 1994–99.

**Source:** Economic Commission for Africa, from official sources.

The fastest average growth in integration in 1994–99 occurred in communications (9.7%) and trade (7.6%) (table A4). Growth was moderate in transport (5.2%) and money and finance (4.5%). Lagging were agriculture (2.0%), manufacturing (0.2%), human resources and labour markets (–0.1%), and energy (–0.6%).

**Table A3**

*Progress on trade liberalization in selected African countries, 1980s and 1990s*

Liberalization category and country	Main liberalization episode	Policy reversals?	Trade restrictiveness index <sup>a</sup>		Current mean unweighted tariff (%)	Tariff bands	Overall pace of liberalization
			1993–95	1998			
Strong							
Ghana	1985–91, 1994	No	—	4	12.5	4	Rapid
Uganda	1987–95	No	6	2	9.2	2	Gradual
Zambia	1991–present	No	7	2	13.6	3	Rapid
Intermediate							
Côte d'Ivoire	1994–present	Yes	—	9	14.0	3	Stop and go
Kenya	1988–89, 1993–94	Yes	10	6	18.4	8	Stop and go
Mauritius	1983–85, 1991–present	No	10	8	29.1	4	Gradual
South Africa	1994–present	Yes	—	6	15.0	Multiple rates	Gradual
Tanzania	1995–present	Yes	—	7	22.1	4	Gradual
Weak							
Nigeria	1986–90, 1995–present	Yes	—	—	23.5	Multiple rates	Stop and go
Zimbabwe	1991–96	Yes	10	10	24.0	17	Stop and go

— not available.

a. A composite index of tariff rates and nontariff barriers that ranges from 1 to 10, with 10 the most restrictive. For details on the methodology used to calculate the index, see Sharer and others (1998).

Source: Tsikata 2001.

**Table A4**

*Integration indices by sector, 1995–99*  
(Index 1994 = 100)

Sector	1995	1996	1997	1998	1999
Communications	110.9	129.9	152.9	157.2	157.2
Trade	127.9	149.0	147.1	138.2	139.6
Transport	118.7	120.1	126.6	129.9	127.3
Money and finance	104.9	115.3	118.6	116.7	124.4
Agriculture	102.3	110.4	108.2	111.3	109.9
Manufacturing	108.7	110.3	110.5	111.0	100.2
Human resources and labour markets	115.4	121.2	122.1	119.8	105.6
Energy	90.6	93.7	94.9	97.9	96.4

Note: Data are weighted by GDP.

Source: Economic Commission for Africa, from official sources.

## Sectors with fast growth

**Communications.** Though Africa's communications sector started with poor technology and weak services in 1994, over the following five years its infrastructure capacity and policy environment improved significantly, attracting greater investment from local and foreign investors. As a result, its performance on integration was the strongest of all sectors.

The ultimate aim is to create a network that connects all African countries and strengthens the continent's information and communications technology—to help bridge the vast digital divide between Africa and the rest of the world. This effort requires the commitment of countries, regional economic communities, and their development partners. Many regional communities are promoting growth in communications capacity and services. Many such initiatives are also being promoted or implemented at the continent level, as part of efforts to alleviate poverty and enhance Africa's global connectivity:

- The Regional African Satellite Communication Project, launched in 1992, provides telecommunications services to all parts of Africa, establishing direct links between all African countries and supporting international connectivity in areas where others cannot go.
- The African Information Society Initiative, launched in 1996 by the Economic Commission for Africa, aims to create a continentwide information and telecommunications network and to link Africa with the rest of the world by increasing its use of new technologies.
- The African Telecommunications Union launched the African Connection Initiative to help member states be part of the information society through accelerated development of regional information infrastructure.
- COMESA has COMTEL Communications Company to build a regional telecommunications network, and ECOWAS is setting up telecommunications regulators to share experiences and harmonize regulations.
- IGAD has been upgrading PANAFTTEL links in the IGAD region to digital standard and is installing a modern telecommunications system.

The international community is also supporting the development of communications in Africa. The Digital Opportunity Task Force, created by the Group of Eight Countries (G-8), brings together governments, the private sector, nonprofit organizations, and international organizations to address the challenges of information and communications technology in Africa.

Despite these efforts, the communications situation varies sharply by region and country. Some regional economic communities (SADC, ECOWAS, COMESA, UMA) show increasing connectivity, while others (CEMAC, ECCAS, CEPGL) lag far behind. South Africa has considerably increased capacity and inter-African traffic, while many Central African countries have yet to exploit the potential of information and communications technology.

More encouraging are trends in communications policies. About 20 countries have established independent regulatory agencies—up from just 2 in 1990—reflecting more liberal policy environments. By early 1998 some 17 national telecommunications operators had allowed some private participation or foreign ownership (or both), compared with 8 in 1995. Today most of the African continent is covered by cellular service.

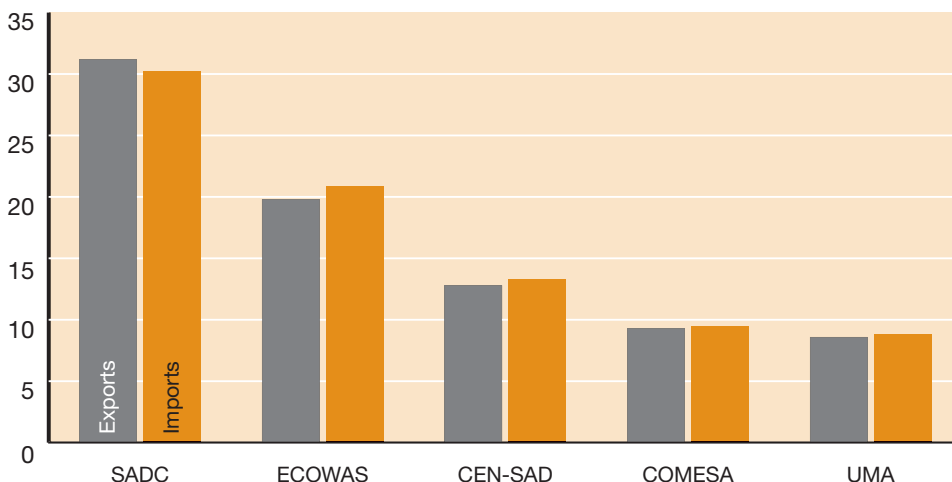
**Trade.** Regional integration has been significantly aided by a stronger effort among regional economic communities to implement their agendas on trade and market integration. They have focused on increasing trade among member states by removing barriers and promoting trade facilitation measures. Efforts to create free trade areas and customs unions have occupied a large part of the communities' integration endeavours and investments.

During 1994–2000 several regional economic communities showed impressive performance on trade and market integration, while others lagged behind. SADC accounted for the largest share of intracommunity trade (in value terms), with its members accounting for 31.1% of exports and 30.2% of imports, reflecting in part the influence of the South African economy (figure A1). UMA rounded out the top five performers with 8.6% of exports and 8.8% of imports. Overall, however, intracommunity trade accounted for only 10.5% of Africa's total trade—reason for concern.

But these variations in performance should be viewed against the range of efforts and levels of progress by the communities in trade and market integration—bearing in mind that the scheme for realizing the African Economic Community anticipated

**Figure A1**

*Intracommunity trade as a share of total trade for selected regional economic communities, 1994–2000 (%)*



**Source:** Economic Commission for Africa, based on data from IMF 2001.

that all the regional communities would satisfy the requirements of a free trade area by 2017. COMESA has already achieved the legal requirements of a free trade area, and some communities have made substantial progress ahead of the implementation timetable. Similarly, UEMOA, SACU, and CEMAC are already fully functioning customs unions—while COMESA, ECOWAS, ECCAS, and UMA need to intensify their efforts in this area. SADC has no immediate plans to establish a customs union.

Agriculture, food, and manufacturing trade, which together account for 41.2% of intra-African trade, failed to grow in line with total intra-African trade. Most of the growth in such trade during 1994–2000 came from agriculture, which grew an average of 9.7% a year, and oil and minerals, which grew an average of 5.6% a year. While indepth research is required to understand the precise reasons in each sector, country, and regional economic community, the following factors often played a role:

- Industry had limited productive capacity and inflexible production lines.
- Agriculture had rigid crop patterns and farming cycles.
- Member states failed to remove trade barriers, even after signing community protocols.
- Member states failed to exploit opportunities for intracommunity trade, even when barriers were removed.
- Markets were not sufficiently integrated, resulting in high costs of doing business.
- High-quality goods were not widely available.
- Information about markets was poor.
- Member states may have preferred to use international markets.

To enhance intracommunity trade, exporters and importers should actively explore liberalizing regional markets. Sustained efforts on liberalization of trade and integration of regional markets could have dynamic long-term effects—stimulating long-term investments in productive sectors by both domestic and foreign investors, motivated by larger markets and economies of scale.

## **Sectors with moderate growth**

**Transport.** Growth in integration in transport—measured by the amount of air freight and traffic and by the length of paved and new roads—has slightly exceeded growth in the overall regional integration index. Transport integration has been fastest in SADC and COMESA. Transport connectivity remains relatively weak in ECCAS and IGAD, partly because of difficult topography and debilitating conflicts.

An evaluation of the second United Nations Transport and Communication Decade programme carried out by the Economic Commission for Africa in 2002 found the transport sector to be plagued by missing links and inadequate networks, policies, and operations. Complicating matters are roadblocks and other impediments, including cumbersome procedures at border crossings on the main transit corridors. These constraints contribute to the high cost of doing business in Africa.

On the positive side, however, regional economic communities and their members have made substantial efforts to promote infrastructure links and harmonize policies to facilitate smooth cross-border transport. For example:

- Several missing links of trans-African highways—designed to connect countries within and between regional economic communities—have been completed. Still, a number of gaps remain—especially in ECCAS, where missing links (sections of the road that fail to conform to the designed standards for that road) affect 46% of the total network.
- Railway interconnection projects have been conceived in West and East Africa, and resources are being mobilized for feasibility studies.
- The continent’s road network has been improved through efforts to strengthen road management and establish appropriate institutions. SADC’s development corridors and spatial development initiatives view transport in a holistic manner. Such efforts should be replicated in other regions to open up landlocked countries.
- In air transport, thanks to the 2000 Yamoussoukro decision by African heads of state to liberalize African air space, new routes have been opened, competition has been encouraged, private participation has been promoted, and consumers have more and better choices.

**Money and finance.** Most regional economic communities see macroeconomic stability and convergence—to be achieved through the harmonization of fiscal, monetary, debt, and investment policies—as key instruments of regional integration. Indeed, monetary, fiscal, and financial integration are among the most important areas of the communities’ integration efforts.

Macroeconomic convergence criteria differ among regional economic communities, partly because of different development levels and partly because of historical reasons. For example, UEMOA and CEMAC have been monetary unions for more than four decades, while COMESA only recently adopted convergence criteria. UMA and SADC have not yet established convergence parameters. Such parameters—ranging from reducing inflation and budget and fiscal deficits to lowering external debt—are usually meant to help member states achieve and maintain macroeconomic stability.

Many countries are having trouble complying with the stringent requirements of macroeconomic convergence. Still, the composite integration index for the money and finance sector has grown at the same pace as the composite regional integration index, and generally at a steadier pace. Performance on convergence criteria varies among the regional economic communities, with generally encouraging trends for inflation but more worrisome ones for government deficits and external debt. When all countries with or without convergence criteria are considered, the following picture emerges:

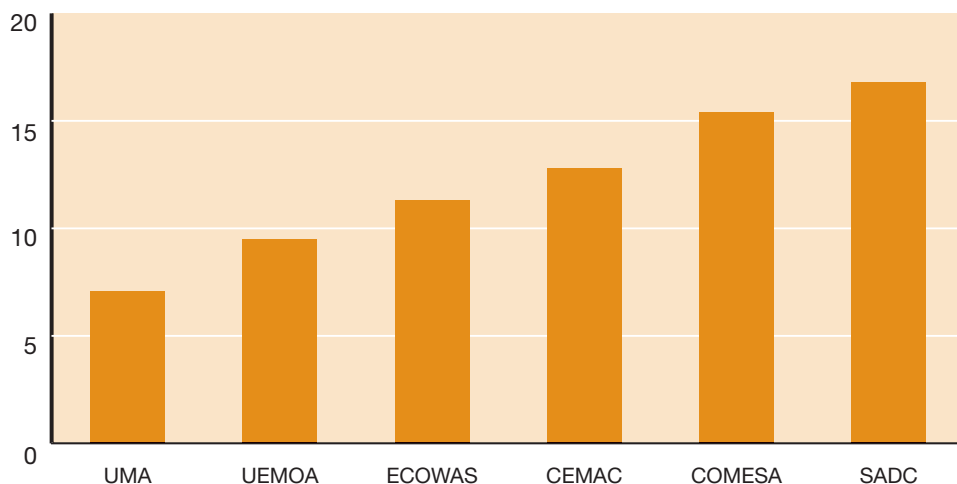
- For inflation, available data for 1994–2000 show that UMA posted the lowest average level, 7.1%, while SADC experienced the highest average, 16.8% (figure A2). UEMOA has reduced its average inflation rate from double digits in 1994–95 to 4% for the period 1998–2000.
- UMA was the only community to post an average budget surplus (0.2%). All other communities experienced budget deficits (figure A3).
- For external debt, IOC was followed by CEN-SAD, EAC, IGAD, UMA, and COMESA.
- Foreign direct investment (FDI) in Africa grew by an average of 1.2% a year between 1994 and 1999. It represented 2.8% of GDP in ECOWAS, 2.0% in COMESA, 1.9% in UEMOA, 1.8% in CEN-SAD and SADC, 1.4% in IGAD, 1.0% in ECCAS, and 0.9% in UMA. For Africa as a whole, FDI accounted for 1.5% of GDP. SADC and CEN-SAD led the communities, each drawing about 21% of Africa’s FDI (figure A4). ECCAS trailed, receiving only 2%. Stock exchanges exist in every regional economic community, and capital market development across the continent is expected to increase cross-border investment and catalyze FDI.

## Lagging sectors

**Agriculture.** Integration in agriculture has been very disappointing. The composite regional integration index for the sector—estimated based on trade in food—grew just 2% a year in 1994–99, even though the treaties of most regional economic communities include food security and joint agriculture programmes. Still, there is visible cooperation in food trade, early warning systems, agricultural research, and capacity building.

**Figure A2**

*Average inflation rates for selected regional economic communities, 1994–2000 (%)*



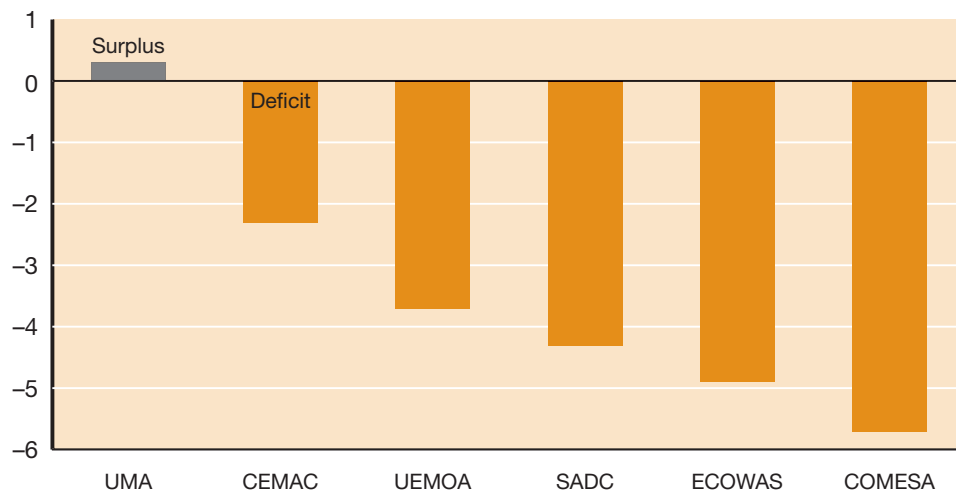
**Note:** SADC and COMESA data do not include Angola and Democratic Republic of Congo.

**Source:** Economic Commission for Africa, from official sources.

Formal food trade is most extensive in SADC. Informal food trade is most evident in regional economic communities where areas that traditionally suffer food deficits are close to areas of surplus. This type of informal food trade is strongest in East and West Africa.

**Figure A3**

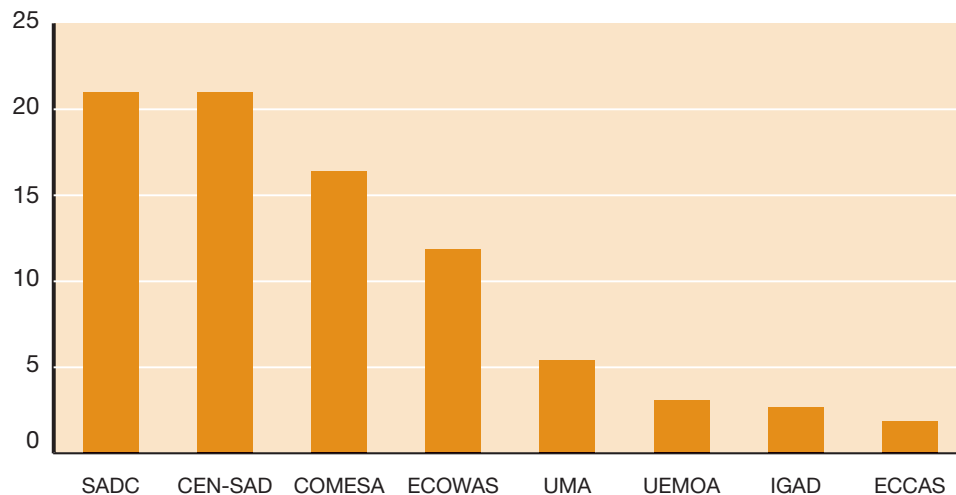
*Average government deficits for selected regional economic communities, 1994–2000 (% of GDP)*



Source: Economic Commission for Africa, from official sources.

**Figure A4**

*Share of total foreign direct investment inflows to Africa for selected regional economic communities, 1994–99 (%)*



Source: Economic Commission for Africa, from official sources.

Cooperation on early warning systems has been strongest in East and Southern Africa, where famine early warning systems (initiated by the U.S. Agency for International Development) and food insecurity and vulnerability information mapping systems (initiated by the Food and Agriculture Organization) are at advanced stages of implementation. In West Africa the monitoring system of the Inter-State Committee for Combating Drought in Sahel has helped countries prepare for adverse weather and drought. To function well, such systems require strong regional cooperation in collecting, analyzing, and forecasting data on food. Thus the effectiveness of such early warning systems serves as a qualitative indicator of regional integration.

Agricultural research and capacity building are linked in most regional economic communities, though not necessarily directly to community secretariats. The most visible research institutions are the Southern African Center for Cooperation in Agricultural Research and Training in Southern Africa, which directly serves SADC, and the Association for Strengthening Agricultural Research in Eastern and Central Africa, which works with the EAC and other regional communities but is not part of any of them. Also promoting regional integration in research are programmes supported by the Consultative Group on International Agricultural Research—the International Institute for Tropical Agriculture, the International Maize and Wheat Improvement Center, the International Crops Research Institute for Semi-Arid Tropics, and the International Water Management Institute.

Although these are global institutions, they contribute to African integration by sharing regional knowledge, helping to build research capacity, and promoting the exchange and adoption of best practices within and among regional economic communities. Still, to enhance their relevance and efficacy, the activities of these research networks need to be better coordinated. There is also a need to invest in irrigation and other infrastructure—particularly transport—that are essential to achieving long-term food security.

**Manufacturing.** The Lagos Plan of Action identified industrialization as the primary instrument for self-sustained growth and deeper regional integration. But with entrepreneurs continuing to focus on national markets—where they benefit from excess protection and barriers to entry—industry has been unable to play a decisive role in national development and regional integration. In recent years the sector has failed to grow, diversify, or attract foreign investment. Lacking capital renewal and supporting services, industrial technology has become obsolete, and in most countries the sector has deteriorated. Where cross-border investment occurs, it remains limited by inappropriate fiscal and incentive regimes.

Although regional economic communities have supported intra-industry trade through trade liberalization programmes and other measures, the sectoral integration index for manufacturing barely improved in 1994–99. Manufactured goods accounted for an average of just 19% of exports and 6% of imports in regional economic communities. Moreover, in some cases intracommunity trade in manufactures declined as

a share of total trade. Only in IOC and SADC did manufactures account for more than half of intracommunity trade.

Efforts to liberalize trade, create free trade areas, and harmonize standards and metrology—as in COMESA, SADC, and EAC—should increase trade in manufactured goods. And the development of national and regional stock exchanges will help catalyze cross-border investments and attract foreign investment. But progress in both areas has been slow and uncertain.

**Human resources and labour markets.** Regional economic communities have introduced various measures to strengthen cooperation and harmonization of policies on human resources and the free movement of people, recognizing the importance of these issues to socioeconomic development and regional integration. But the integration index for this sector, based primarily on education indicators, lags far behind those for other sectors. This shortcoming calls for urgent action. None of the regional economic communities has achieved full integration in education and training. But the communities are not the sole actors in promoting cooperation and integration in this sector.

More visible progress has been made in liberalizing regional labour markets. Here, efforts focus on harmonizing labour laws, allowing the free movement of people across borders, and establishing rights of residence and establishment. ECOWAS has ratified its protocol on these issues, and EAC is close to reaching agreement on the free movement of people and the rights of residence and establishment. SADC and COMESA have not ratified their protocols in these areas.

**Energy.** Regional economic communities aim to minimize energy costs by exploiting economies of scale through large regional supply systems—while also enhancing the reliability and security of supply and minimizing adverse environmental effects. The most notable developments have involved establishing regional power pools and interconnected electricity grids, formulating master plans for regional power development, and developing environmentally benign power sources, including hydropower and natural gas.

Cross-border electricity trade and most interconnection projects have been based on the development of hydroelectric resources. Indeed, hydroelectric dams play a key role in regional power supplies:

- In East Africa the Owen Falls Dam in Uganda supplies electricity to Kenya and Tanzania.
- In West Africa the Akosombo Dam in Ghana supplies electricity to Benin, Côte d'Ivoire, and Togo.
- In Southern Africa the Cahora Bassa Dam in Mozambique supplies electricity to South Africa and Zimbabwe.
- In Central and Southern Africa the Inga Dam in Democratic Republic of Congo supplies electricity to the Republic of Congo and other countries.

Ongoing hydropower projects include the Kariba South power station for Zambia and Zimbabwe; the Ruzizi II station for Burundi, Democratic Republic of Congo, and Rwanda; the Nangbéto station for Benin and Togo; and the Manantali project for Mali, Mauritania, and Senegal.

Most regional economic communities are considering regional power pools, seeing them as the best framework for promoting cross-border electricity trade among member countries. In 1995, 12 SADC countries created the Southern African Power Pool, aimed at linking SADC members in a single electricity grid. This initiative serves as a model for electricity free trade zones in other parts of Africa. Drawing on its lessons, ECOWAS and UEMOA are implementing the West African Power Pool. EAC countries are considering an East African power pool, including interconnection of the electricity grids in Kenya, Tanzania, and Zambia to link EAC and SADC.

Interconnecting national power systems is considered a decisive step toward regional electricity integration and a competitive regional power market. The master plans for regional power development being prepared by various regional economic communities have emphasized installing missing links in power transmission and strengthening existing interconnection lines. Major interconnection lines have been constructed in the SADC region, including the South Africa–Zimbabwe interconnector (1995), the Mozambique–Zimbabwe power line (1997), the South Africa–Namibia interconnector (2000), and the South Africa–Mozambique transmission line (Motraco) with supply for Swaziland (2000). In ECOWAS and UEMOA an interconnection project between Benin and Nigeria and the upgrading of the transmission link between Benin, Côte d'Ivoire, Ghana, and Togo will increase the transit capacity for electricity interchange within the West African Power Pool.

For oil and gas pipelines, energy pooling has already been developed—with the Algeria–Tunisia–Italy Trans-Mediterranean Natural Gas Pipeline linking Algeria to Italy through Tunisia and the Maghreb–Europe Gas Pipeline linking Algeria to Spain through Morocco. The West African Gas Pipeline is to supply Benin, Ghana, and Togo with natural gas from Nigeria by 2004–05. The Mozambique–South Africa Natural Gas Project is expected to be completed by early 2004. The Mombasa–Nairobi petroleum products pipeline will be extended from Eldoret (in western Kenya) to Kampala (in Uganda), significantly lowering prices for petroleum products in Burundi, Rwanda, and landlocked regions of northwestern Tanzania and eastern Democratic Republic of Congo.

The energy sector integration index, measured by trade in electricity, was erratic during 1994–99. This instability reflects several factors affecting the amount of electricity traded, including difficulties faced by importing countries in securing foreign currency to pay for electricity imports (Zimbabwe in 1999), lower hydroelectric output due to drought in exporting countries (Ghana in 1998), and increased demand for electricity in exporting countries due to rapid economic growth (Uganda).

## Conclusion

The regional integration process, after an initial phase of fast progress between 1994 and 1997, slowed through 1999, though the picture is mixed, with significant differences across economic communities. Some important integration goals have been achieved, however, such as the creation of free trade areas in most communities. There were also significant efforts toward macroeconomic convergence and the establishment of the African Economic Community and the African Union. Yet, several problems and shortcomings will need to be addressed. The lack of further significant progress does not bode well for prospects for regional integration and points to the enormous challenge that the nascent African Union faces in boosting Africa's integration to levels comparable to those in other regions.

The level of intra-African trade is still very low, accounting for only 10.5% of Africa's total trade. Major reasons for that are the lack of complementarity between countries and diversification of production structures. High costs of doing business, especially high transport costs, and inadequate finance for regional trade are also factors that hampered trade. Trade liberalization schemes need to be accompanied by the implementation of policies to support the cross-border mobility of inputs (labour, finance), the removal of nontrade barriers, and the harmonization of the macroeconomic stance.

Limited and unequally distributed gains from regional initiatives have reduced the appeal of integration. The consequence is that regional projects are not top priorities in the agendas of national governments. Protocols are not ratified by member states, and national policies crowd out resources for regional integration. Furthermore, because integration trades short-term national goals for long-term regional goals, strong political commitment of national authorities will be required. If such commitment is not adequately provided, efforts to deepen regional integration will be seriously constrained.

A relaunching of the regional integration process on firmer footing would therefore call for the deployment of maximum efforts in policy and institutional reforms and sectoral actions. This requires effective incorporation of integration goals and targets into national development plans.

## Annex Attachment: Method for constructing regional integration indices

This attachment provides readers with a nontechnical explanation of the method used to generate indices to support the analysis of the report. The main objectives of the indices are:

- To assess each country's performance and relate it to the goals and objectives of each regional economic community and that of Africa as a whole, as well as to assess the performance of each economic community to that of Africa.
- To compare the contributions of each member country in a regional economic community towards the realization of such goals and objectives, in addition to the contributions that each regional economic community has made towards the realization of goals and objectives of the continent at large.
- To monitor the performance of each country, regional economic community, and the continent as a whole for regional integration efforts over time.
- To enhance the quality of the analysis by providing indices for scores and rankings at country, regional economic community, and continent levels.

Indices are estimated at four levels:

- Country.
- Regional economic community.
- Sector.
- Continent.

### Constructing an index

Indices are constructed to enable comparisons of observed changes in a variable. For example, the most common index used in economics is the price index (an example is the Consumer Price Index), which is used to measure changes in the price level for different categories of goods or in the aggregate price level for an economy. Among other things, index numbers have to satisfy the following criteria:

- Because aggregation is required, variables have to be additive—the attributes must comprise an identical unit of measurement.
- Because aggregation is required, weights have to be attached to individual variables to reflect their relative importance.
- Index numbers must have a reference point with which all others are compared—a base period. The index indicates a period change relative to the base period.

An index that satisfies all three criteria can be used to compare changes in an attribute over time and used to rank attributes of different entities at a point in time.

For the integration indices, annual indices were first calculated for each country and each indicator, with 1994 as the base year, as follows:

Let  $X_{ij,t}$  be the actual value of indicator  $i$  for country  $j$  at time  $t$ , and

let  $I_{ij,t}$  be an index calculated for indicator  $i$  for country  $j$  at time  $t$ , defined as:

$$(1) \quad I_{ij,t} = \frac{\text{Value of the } i\text{th indicator at time } t \times 100}{\text{Base year value of the same indicator}}$$

$$= \frac{X_{ij,t}}{X_{ij,0}} \times 100$$

Where  $X_{ij,0}$  = the value of  $X_{ij}$  at time  $t = 0$  (the base year value; in this case 1994)

$i = 1, 2, \dots, N$  indicators

$j = 1, 2, \dots, J$  countries

$t = 0, 1, 2, \dots, T$  years

The indices as defined in expression 1 are generated for all countries within a regional economic community or within Africa. These indices measure the relative changes over the base year of a particular indicator

### Aggregating indices

Aggregation is important since comparisons are also made at the regional economic community level and the continent level. For example, for comparing regional economic communities, the indices are calculated using aggregated community-level data as follows.

$$(2) \quad I_{ir,t}^* = \frac{\text{Aggregate value of indicator } i \text{ at time } t \times 100}{\text{Base year aggregated value}}$$

$$= \frac{X_{ir,t}^*}{X_{ir,0}^*} \times 100$$

Where  $I_{ir,t}^*$  is an index for the  $i$ th indicator for the  $r$ th regional economic community at time  $t$ , and  $X_{ir,t}^*$  is the aggregate value of the  $i$ th indicator (aggregated over all countries in a regional economic community) for the  $r$ th regional economic community at time  $t$ , and  $X_{ir,0}^*$  refers to the aggregate value of the same indicator in the base year ( $t = 0$ ). Thus  $I_{ir,t}^*$  is used to measure changes over time at the regional economic community level.

## Comparing performance

Comparing performance (between countries within a regional economic community, between countries within Africa, or between regional economic communities within Africa) requires three additional calculations: the norm or yardstick, scoring, and ranking.

**The norm or yardstick.** A norm or yardstick is a value against which performance is measured at all levels of comparison. Since there are no pre-determined targets for most of the indicators, a yardstick is determined using one of the following two approaches:

### Case 1

- A predetermined target (such as a target budget deficit as a percent of GDP, used as a convergence criterion). If the indicator is target-driven, the target itself (for example, a budget deficit to GDP target of 4%) is considered to be the yardstick.

### Case 2

- The average of the best performers of the regional economic community:
  - If a regional economic community has more than six members, the average of the top four performers is taken as the yardstick.
  - If a regional economic community has fewer than six members, the average of the top two performers is taken as the yardstick.
  - For continental level comparisons the average of the top six African performers is taken as the yardstick.

Case 1 is straightforward. However, most indicators (for example, exports and imports) do not have a predetermined target that can be used as a yardstick, so the approaches under case 2 are used to generate a yardstick for each indicator. The average for the top four (or two or six) performers is calculated as follows:

**Step 1.** Calculate a simple average index for each country within a regional economic community (or each country within Africa or each regional economic community within Africa):

$$(3) \quad \bar{I}_{ij} = \sum_{t=1}^T \frac{I_{ij,t}}{T}$$

where  $\bar{I}_{ij}$  is the average index for indicator  $i$  in country  $j$  over  $t=1,2,\dots,T$  time periods. That is, a single value is calculated for each country for a particular indicator over the time periods (years) covered.

**Step 2.** Sort the average indices for all countries within a regional economic community (or countries within Africa or regional economic communities within Africa) in

descending or ascending order. Suppose that the average indices are sorted in descending order. And suppose that a regional economic community has more than six members.

That is, let the average indices be  $\bar{I}_1, \bar{I}_2, \dots, \bar{I}_c$ , where  $c > 6$ .

Given these ordered indices, calculating the average of the top performers (in this case, the top four performers) depends on the particular indicator's contribution towards regional integration.

If an increase in an indicator (for example, exports and imports) contributes positively to regional integration, then the yardstick is given by the average of the first four indices:

$$(4) \quad b = \sum_{i=1}^4 \frac{I_i}{4}$$

where  $b$  stands for best performance (or yardstick).

If a decrease in an indicator contributes positively to regional integration, then the  $b$  value is taken as the average of the last four values:

$$(5) \quad b = \sum_{j=c-4}^c \frac{I_j}{4}$$

### Constructing scoring intervals

Once the  $b$  value is calculated, the standard deviation of the indices of countries within a regional economic community (or countries within Africa or regional economic communities within Africa) is generated in order to construct intervals or borders around the given  $b$  value. The standard deviation measures the spread of performances of countries or regional economic community around the average performance within a given set of indices. The standard deviation, which is the square root of variance, is defined as:

$$(6) \quad s = \sqrt{\sum_{k=1}^n \frac{(I_k - \bar{I})^2}{n-1}}$$

Where  $\bar{I}$  is the mean of all indices within a regional economic community (within Africa or for all regional economic communities),

$I_k$  is the  $k$ th index, and  $n$  represents the total number of indices within a regional economic community.

The standard deviation is typically used to construct an interval around the mean. This would mean comparing the performance of countries against the average performers. This, however, is inconsistent with our definition of “best performance”. Thus, instead of using the mean, this comparison employs the  $b$  value as a point of reference for best performance and constructs intervals around this value.

Thus, intervals are defined around the  $b$  value with a radius of  $1/5$  the standard deviation, meaning the length of the interval will be  $2/5$  the standard deviation. Eleven distinct intervals are constructed for each indicator within a regional economic community for which scores are assigned depending on the interval.

### **Scoring and ranking**

Scores are assigned for each index for all time periods, depending on where the index lies within the given intervals. A maximum score of 10 is assigned for the best performance and zero for worst performance.

These scores are averaged over the given period (1994–99) to obtain an average score for each country (or each regional economic community).

Finally, a ranking is given to each country or regional economic community based on the average scores, where the best performer receives a rank of 1.

### **Components of sectoral indices**

To capture the breadth and depth of regional integration efforts and outcomes, a questionnaire outlining the various specificities of each regional integration sector was developed and used to establish the basis for the data to be collected. As outlined in box A1, computation of the indices focused on quantitative aspects because of data limitations and inadequate responses to questions about qualitative aspects. However, the sectoral chapters contain significant qualitative information on the institutional, policy, and process aspects of regional integration. Among quantitative items, indices were built from indicators that are more credible and measurable across countries and regional economic communities. Again, as better data become available, there will be further scope for refinements on the quantitative indicators.

Sectoral indicators cover the following variables, to which relevant weights are attached. For trade the indicator of integration is the weighted average of exports and imports within each regional economic community. Human development is approximated by the share of the budget spent on education. For money and finance the index covers indicators for inflation, external debt, investment, and the budget deficit. For industry the indicator is measured by cross-border industrial inputs. For agriculture and food security intraregional food trade flows, both exports and imports, are used. For transport the indicators are air transport freight, air passengers carried, number of aircraft departures, and length of the paved roads network and of the total roads network. Integration in the energy sector is measured by electricity exports and imports across

countries. Finally, integration in telecommunications is assessed by the number of intracountry and intracommunity telephone calls.

### **Computing the composite integration index performances of regional economic communities over time**

On the basis of the scores obtained for each regional economic community over time, average scores for each year using the regional economic community level indices over the number of regional economic communities were calculated to obtain the average score of the regional economic communities in the various years. An index of the scores (with the 1994 base year) was then calculated on a year-by-year basis showing the change in performance over the given period of time for the regional economic communities. This is the composite integration index.

The weighted composite integration index is the total of the average regional economic community indices multiplied by the corresponding GDP weight of each regional economic community. The composite integration index measures relative performance of a regional economic community (or regional economic communities within the continent) but does not take into account the size of each regional economic community in relation to the others.

### **Data collection**

As outlined in box A1, several data sources were used to build the database and to generate the time series data for the various sectoral indicators covered by the analysis. Most of the data were collected through a structured questionnaire designed to collect both quantitative and qualitative data and information on the indicators at the country and regional economic community levels. Responses were obtained through field missions to 51 countries and to all 14 regional economic communities. These data were supplemented by secondary data from such sources as the UN organizations, including the United Nations Conference on Trade and Development and the United Nations Industrial Development Organization; the World Bank; International Monetary Fund; U.S. statistical sources; specialized sectoral institutions; research bodies; various web sites; and other published and unpublished data sources.

### **Future refinements**

This innovative method for measuring integration efforts will be refined in the future to take into consideration qualitative information covering such areas as integration processes, institutional dimensions of policy issues, and other qualitative aspects of regional integration. Such refinements will make the indicators more reflective of both quantitative and qualitative aspects, while broadening the coverage of regional integration.