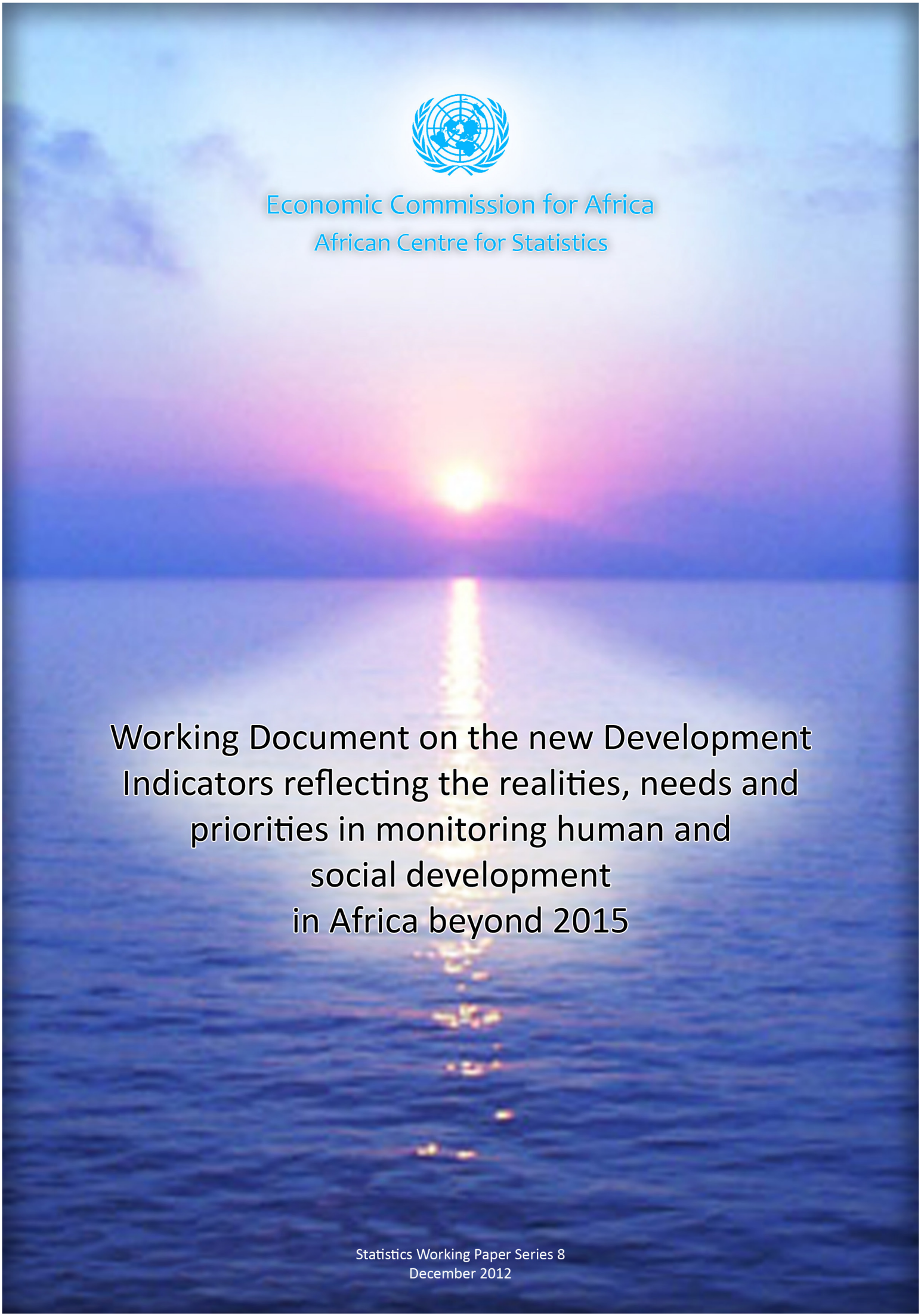

Economic Commission for Africa
African Centre for Statistics

Working Document on the new Development Indicators reflecting the realities, needs and priorities in monitoring human and social development in Africa beyond 2015

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Foreword

At the dawn of the third millennium, the member States of the United Nations Organization signed the Millennium Declaration which was the common platform of priorities to address the various dimensions of poverty in particular hunger, unemployment, disease and lack of housing as well as gender inequality and environmental degradation.

As a result, the need to monitor the progress in attainment of the Millennium Development Goals (MDGs) provided an opportunity for several developing countries from various regions to develop their statistics systems for improved information, to support development policies based on factual evidence.

In Africa, a mandate was given by the Heads of State and Government of the African Union (AU) during the Summit held in Syrte, Libya in 2005 to the African Union Commission (AUC), the Economic Commission for Africa (ECA) and the African Development Bank (AfDB) to prepare and submit for review an annual report on the progress in Africa in attainment of the MDGs. Accordingly, African countries and development partners increasingly acknowledged the crucial need for better statistical information not only as conceptual and policy-planning tools based on facts but also as a means of providing improved support to policy implementation, monitoring of progress, and assessment of the results and impact of development initiatives, including the MDGs.

It was for that reason that in the recent past, efforts have been made at national, regional and international levels to strengthen the statistical systems in African countries for improved collection, compilation and dissemination of concise, reliable and up-to-date data on development indicators including those relating to attainment of MDGs. The challenges facing African countries will persist well beyond 2015, the timeline of MDGs. These challenges can be economic or social or even related to climate change. During the next three to four years, the discussions on the current MDGs and those beyond them will commence and a set of new and extended indicators will be proposed for monitoring the various dimensions of human and social development.

To this end, ECA should play a crucial role in identification of the relevant indicators for development of the African continent and monitoring of the development outcomes beyond 2015, as recommended by the Second African Statistics Commission Meeting held in 2010 in Addis Ababa. African countries should redouble their efforts to strengthen their statistical systems, particularly development of the required capacity to address the emerging needs for data.

The year 2015 is also a year of transition as it marks the end of twenty-five years of monitoring progress in human development and the beginning of a new phase in this respect. As a result, the reference period for the new set of development objectives should be established and become effective around 2015, and it is crucial to request countries to undertake their major surveys at that time.

The major aim of this document is to develop a set of development indicators in line with the realities, needs and priorities beyond 2015. This approach will also ensure that Africa participates effectively in the design and development of the agreed international development indicators beyond 2015.

This document will also enhance the capacity of the member States to tackle the challenges in the collection, compilation, dissemination and utilization of data on the new indicators that address the development priorities of African countries beyond 2015.

Dimitri Sanga
Director ACS

Acknowledgement

This study was conducted by Mr. Moubarack LO, under the overall supervision of Mr. Dimitri Sanga, Director of CAS, the close supervision of Mr. Raj Gautam Mitra, Chief, Section of social and demographic statistics, and the coordination of Mr. Oumar Sarr, statistician in the said section.

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1. Consideration of the Current Millennium Development Goals (MDGS)

1.1 MDGs in question

In September 2000, the world leaders agreed to adopt a common strategy known as the "Millennium Declaration".

MDGs were also adopted following a series of conferences and summits that took place in the 1990s, in particular:

- The World Food Summit in 1996 (reducing poverty by half in 2015).
- The International Conference on Population and Development (held in Cairo from 5 to 13 September 1994). A plan on population and development was formulated for implementation by all countries during that summit.
- The Fourth United Nations World Conference on Women (held in Beijing, China in 1995).
- The United Nations Climate Change Conference held in Copenhagen, Denmark in December 2009 and in Durban, South Africa in December 2011.

The seven initial MDGs are aimed at reducing extreme poverty and hunger, ensuring primary education for all, promoting gender equality and women empowerment, reducing infant mortality, improving maternal health, controlling HIV/AIDS, malaria and other infectious diseases and ensuring environmental sustainability. The eighth goal encourages and recommends establishment of a global partnership for development with specific objectives in the areas of international aid effectiveness trade relations and reduction of the debt burden.

1.2 Importance of MDGs

The principal importance of MDGs lies in the setting of precise targets to be attained by 2015 and in the formulation of intermediary targets, contributing to greater cohesion and results orientation in the implementation of development policies in developing countries particularly African countries. The inclusion of MDGs in the Poverty Reduction Strategy Papers (PSRPs) has greatly facilitated their operationalization in country budgets through allocations to priority sectors, in particular the social sector. There has also been increased commitment from the international community towards Africa through official development assistance (ODA). Indeed, the majority of the countries are showing improvement on some of their social indicators during the 2000-2010 decade.

1.3 Limitations of MDGs

The initial assessments of the various conferences (held five and ten years after) indicated that a little progress had been achieved but the goals set were not attained.

Similarly, the overall assessment of the progress achieved with the MDGs in Africa by 2011 was that despite overall positive developments, the results were mixed depending on the indicator used and the country concerned. Results were mixed to the extent that the overall pace of progress was not enough to ensure attainment of MDGs before the target date of 2015. Out of 60 indicators only two (the net enrolment rate in primary schools and the enrolment rate of orphans compared to non-orphans between the ages of 10 and 14) were almost certain to be achieved.

This limited and overall modest progress in Africa towards attainment of MDGs somewhat conceals disparities between the various social groups and between the various regions. It is to be noted in particular that the results obtained from the overall indicators are distorted as they only relate to certain categories of the population such as well-off persons and city dwellers. The inequality regarding access to public services (education, health, potable water, sewerage) further worsens the marginalization of the most vulnerable groups of the society. This situation was acknowledged in the final Outcome Document of the 2010 High Level Plenary Meeting of the General Assembly on the Millennium Development Goals which proposed that the inequalities should be addressed as an efficient means of ensuring that progress made would be spread throughout all segments of the society.

The poor performance by Africa can be attributable to several factors: (i) weakness of the initial situation; (ii) very ambitious goals; (iii) frequent exogenous shocks; (iv) insufficient capital from governments and public authorities; and (v) shortcomings in budgetary policy choices and inefficiency in public expenditure.

1.4 An alternative process in monitoring of MDGs

In fact, the design of MDGs is problematic as it has not taken into account the differences that exist among countries but focused exclusively on attainment of targets without adequately considering the issue of the marginal progress made by the countries. An alternative process for assessment of the performance of countries is possible, based on scores to countries, according to the degree of attainment of the targets set (see box 1).

Box 1: The method used in awarding points to countries

We have selected the period 1990-2008 and divided it into three sub-periods: 1990-1997 (the baseline years); 1998-2003; 2004-2008.

The lack of permanent sets of data for most countries and for all the indicators led to consideration of sub-periods rather than the years. The period 1990-1997 is the reference sub-period.

In order to calculate the score on the two periods 1998-2003 and 2004-2008, we set aside the countries and the variables that did not provide enough information. After considering the values of the indicators for the various countries, we then calculated the values to be attained in each sub-period for the MDGs to be achieved in 2015.

The subsequent stage was to measure the gap in the value attained and the value that should be attained (the performance of the country for the given indicator) for scores to be awarded to the country ranging between 0 and 1 for each indicator.

For some indicators, the way that they were designed did not provide an exact figure to be attained (it was simply stipulated that an increase or a substantial increase was required). In these cases, we set the thresholds to be attained.

Finally, the scores on the individual indicators are aggregated at the level of the targets and then at the goal level. An overall score is then given to the country through an arithmetic average of scores obtained in the seven MDGs. The eighth MDG was not included in the calculations due to its unclear nature as it combined the efforts of developing countries and rich countries.

The results obtained

Table 1 shows the scores of 20 African countries in which surveys were conducted during the sub-period 2004-2008.

Table 1: The performance of selected African countries in attainment of MDGs, 2004-2008

	M1	M2	M3	M4	M5	M6	M7	Score 04-08
Country	04-08	04-08	04-08	04-08	04-08	04-08	04-08	-
Egypt	0.697	0.976	1.000	1.000	1.000	1.000	1.000	0.953
Rwanda	0.880	0.845	1.000	0.868	1.000	1.000	1.000	0.942
Niger	0.954	0.837	0.948	0.890	1.000	0.932	1.000	0.937
Benin	0.991	1.000	1.000	0.761	0.746	1.000	1.000	0.928
Malawi	0.974	1.000	1.000	0.985	0.655	0.877	1.000	0.927
Ethiopia	1.000	1.000	1.000	0.909	0.600	0.956	1.000	0.924
Tunisia	0.697	1.000	1.000	1.000	0.858	1.000	0.909	0.923
Ghana	1.000	0.919	1.000	0.737	0. 858	0.907	1.000	0.917
Guinea	0.782	1.000	1.000	0.818	0. 900	0.763	1.000	0.895
Madagascar	0.668	1.000	0.979	0.903	0. 697	1.000	1.000	0.893
Togo	0.792	1.000	1.000	0.762	1.000	0.825	0.850	0.890
Algeria	0.697	1.000	1.000	0.871	0.810	1.000	0.793	0.882
Namibia	1.000	0.941	0.987	0.722	0.649	0.827	1.000	0.875
Nigeria	1.000	0.818	0.943	0.755	0.727	0.901	0.835	0.854
Cote d'Ivoire	0.772	0.756	0.933	0.669	0.743	1.000	1.000	0.839
Mauritania	0.785	1.000	1.000	0.605	0.777	0651	1.000	0.831
Tanzania. United Rep. of	0.687	1.000	0.985	0.779	0.568	0.857	0.806	0.812
Senegal	0.820	0.882	1.000	0.756	0.661	0.537	1.000	0.808
Zambia	0.628	0.919	1.000	0.649	0.530	0.801	0.896	0.774
Swaziland	0.620	0.865	0.945	0.562	0.614	0.816	0.958	0.769
	5	10	13	2	4	7	13	

M1 to M7 corresponds to the scores in respect of MDGs 1 -7

Lessons learnt from the assessment

- In light of the data, we grouped the countries into three:
  - **i) High-performing countries:** countries which on average have attained more than 90 per cent of the goals set from 2004-2008;
  - **ii) Middle-performing countries:** countries which on average have attained between 85 and 90 per cent of the goals set from 2004-2008;
  - **iii) Low-performing countries:** countries which on average had attained less than 85 per cent of the goals set from 2004-2008.
- The average score was 0.879 over 1;
- The highest-performing country scored 0.953 (attaining 6 out of 7 goals) compared to a score of 0.769 for the least performing country (which did not attain any of the 7 goals);
- The lowest performance in the countries covered by the sample survey focused on Goals 1,4,5 and 6, namely on health and nutrition. It should be pointed out that only two countries out of 20 had attained the intermediary goals set on infant and child mortality. This situation underlines the importance of giving special attention to the health and nutrition sectors to promote attainment of the MDGs in Africa.
- The best performance was recorded on Goal 7 (in particular, access to potable water and sewerage), on Goal 2 on education (but more of access than quality as determined by the completion rates) and Goal 3 on gender equality (but only shown here in terms of parity concerning school enrolment).

2. MDGs Versus Development Theories

2.1 Growth and development theories

Every country aspires to attain integral development and for its citizens to live a life worth seeing, as Amartya Sen, the Nobel Laureate, has said.

Development goes beyond economic growth which is generally defined as the change in the Gross Domestic Product (GDP) from one year to the other. It could be interpreted as *growth plus transformation (Gerald M.Meier*,1995) and is demonstrated in particular through improved performance in the factors of production as well as in the increase and modernization of the infrastructure network, the development of the institutions, the change in the attitudes and values and "an upward trend in the entire social system", (Gunnar Myrdal, 1968. The Asian drama).

Basic neoclassical analysis: Harrod Model (1939) and Domar Model (1946). This model describes a strict relationship between the capital stock increase and the increase in potential output through the Incremental Capital-Output Ratio (ICOR). According to this model, if there is demand the only obstacle to growth is the lack of physical capital. In this respect, the accumulation of physical capital is the only decisive source of economic growth.

Revised neoclassical model: the Harrod-Domar Model was further developed by other economists such as Solow (1956) who took into account the function of aggregate production including other factors and highlighted the importance of total factor productivity (TFP) for growth. The increase in capital stock and that of the TFP in this way would contribute simultaneously to economic growth. However, the performances scale were diminishing and technical progress was considered exogenous in the model.

Theory on endogenous growth (A.K. d'Uzawa Model (1965), Lucas Model (1988), Roner Model (1986,1990), Schumpeterian Model of Aghion Howitt (1992) : this theory, while depicting technical progress as endogenous, found it possible to combine the functions of production with increased returns through specialization and investment in knowledge.

Growth is mainly driven from positive externalities: (i) economies of scale generated by public expenditures, especially in human capital and infrastructure, (ii) innovation, (iii) demand externalities that affect the desire of products diversity.

Thus, developing countries should, according to this theory, attach great importance to a number of factors which all contribute to increase the stock of knowledge in society and to generate increasing returns: (i) investment in education, in research and development and infrastructure ("public goods"), (ii) the stimulation of private investment and competition that foster innovation and dissemination of knowledge, (iii) the opening of the economy to the world to increase the size of the market and take advantage of new ideas and innovation technologies.

Theory of institutions: "The institutionalists" (North 1990), Williamson (2000), Rodrick (2002), Acemoglu and others (2004) postulated that the fundamental causes for growth lay in the quality of the institutions. According to the widest acceptance, institutions reflect the formal and informal organization of a society (values, norms, customs, traditions) as well as the procedures and the regulatory framework governing the economic activity in the given country.

Walt W. Rostow (1960): he examined five stages that all countries go through: the traditional society, the emergence of the preconditions for the take-off, the take-off, the road to maturity and the era of mass consumption. The take-off phase was the most important for developing countries. It was a period during which the scale of productive economic activity reached a crucial stage and led to qualitative changes that produce massive and gradual structural transformation in the economy and the society.

The take-off required three conditions: (i) an increase in the productive investment rate for example from 15 per cent to 30 per cent of GDP; (ii) the development of one or several manufacturing sectors with a strong pace of growth; (iii) the existence or the rapid emergence of a political, social and institutional system which, while subtly making the most of the initial growth in the modern sector and the potential external economic effects of the take-off, succeeded in ensuring sustainability in growth.

The structural analysis: The structuralists after Rostow focused on the impact of structural transformation on growth taking for example the changes in the composition of demand, external trade, production and utilization of the production factors as the per capita income increased.

In particular: (i) reallocation of capital, labour and agriculture to more productive sectors accounted for 20 per cent of the average growth; (ii) the growth in export had a crucial effect on growth in developing countries; (iii) the flow of foreign capital had an important effect on growth in addition to its effects on exports and investments.

Sustainable human development: Development should not be seen purely from an economic perspective. Other components should be integrated particularly the social dimensions and the preservation of environmental resources for development to be sustainable, equitable and people focused. Public and private investment should therefore ensure reduction in carbon emissions and pollution, improve efficiency in use of energy and resources and reduce forestal loss, important for biodiversity and ecosystems. Also, the promotion of an economy that is not based on the principles of the green economy is prejudicial to national development because natural resources are the only economic and social assets of the poor.

In addition, there is a consensus on the fact that economic growth, even strong, is not a sufficient condition for poverty reduction. Moreover, in a short-term, we can see an increase in poverty during periods of positive growth (Ravallion, 2001). All countries should seek a pro-poor growth, with the aim to develop the capacity of the poor to participate in economic activity, to contribute to the growth and take advantage. This capacity can be assessed by changes in the households income and properties that have been purchased in order to ensure a higher income in the future.

However, there is currently no consensus on the definition and method of measuring pro-poor growth. Thus, different definitions have been proposed:

(a) The pro-poor growth is a pro-poor growth that offers them opportunities to improve their economic situation. This definition does not provide a way to measure an indicator of pro-poor growth (it is the low definition).
(b) Growth is pro-poor if it reduces poverty (regardless of the magnitude of this reduction). According to this definition, even if the poor receive only a small fraction of the total growth results, it can be considered as pro-poor.
(c) The pro-poor growth is defined as growth that is more beneficial to the poor than non-poor. This is the definition used by Kakwani and Pernia (2000)[1], and Fils (2003)[2]. These authors suggest a measure of pro-poor growth must take into account both the reduction of poverty reduction in inequality (it is the high definition).

Summary and partial conclusion: the lessons learned from the theories are complementary and can and should concomitantly serve as guidelines to policymakers in poor countries. The issue now is to know whether the poor countries can catch up with rich countries and converge.

2.2 Affirmation of the convergence between poor and rich countries

Absolute convergence: there is a trend for poor countries to grow faster than rich countries and therefore move, regardless of the specific characteristics of each economy, towards the convergence of income per capita and towards a stationary situation dictated by the rate of investment.

Conditional convergence: (Barro,1997) claimed that whereas economies differ in terms of propensity to save, demography, human capital, openness to the outside world, access to technology or the soundness of government policies, convergence can only succeed under certain conditions. On the fulfilment of these conditions, the expected growth rate would be higher than the departure level of GDP per capita, weak compared to the long-term balanced situation. In contrast, a poor country might not converge or only converge very slowly with a rich country if the basic conditions were less favourable than those of the rich country.

The β-Convergence: (Barro-Sala-i-Martin 1992) suggested that convergence is applicable on condition that the poor country grows faster than the rich country so that their income per capita is convergent. The convergence speed was defined by the value of the positive coefficient □.

The σ-Convergence: (Barro, 1991) stated that convergence took place when the dispersal of income per capita in a group of countries diminished overtime.

The convergence clubs: According to Abramovitz (1986) and Baumol (1986), countries possess heterogeneous dynamics of growth but could be grouped into sub-groups (clubs) that demonstrate homogenous dynamics of growth. Each club would bring together countries with the same balanced position in a multiple balance model. Further, Berthelemy (2005) emphasized that cumulative pro-

1 Kakwani et Pernia (2000), « What is pro-poor growth? », Asian Development Review, vol. 18, n° 1, p. 1-16.
2 Fils (2003), Une note sur une croissance pro pauvres, School of Economics, Université Macquarie, Sydney, Australie

cesses could lead to economic decline if the economy was initially below a certain development threshold. Economic development was only possible after breaking through this threshold. He demonstrated that some formerly poor countries (about twelve out of a hundred) succeeded in attaining plural growth peaks and emerged from the trap of underdevelopment, based above all on education policies. Factors such as financial depth, economic diversification and the neighbourhood effects (particularly in Asia) also played a role but with less impact on the initial take-off.

However, Haussmann-Pritchett-Rodrik (2004) demonstrated that several countries considered poor had experienced growth peaks in times past without undertaking any kind of reform whatsoever. This situation pointed to the fact that beyond growth peaks, it was necessary to examine other factors that contribute to the take-off of some poor countries. Further, there should be a clear distinction between growth initiation and growth sustainability. The convergence assumption could only be verified if the country initiating growth succeeds in fulfilling certain conditions.

An example of the convergence club among the emerging countries follows: In affirming the concept of the establishment of convergence 'clubs', the empirical evidence from the performance of various countries warranted formation of sub-groups. It was possible to identify among the so-called developing countries a 'club' of particularly dynamic countries that could be called the club of emerging countries. These countries had key components showing characteristics of converging soon with rich countries. Subsequently, emergence constituted transition to an intermediary stage between divergence (remaining in the poverty trap) and convergence with the rich countries. The new globalization model modifies and clarifies the paradigms on convergence and national development.

2.3 The new globalisation modifies and clarifies paradigms of convergenve and countries development

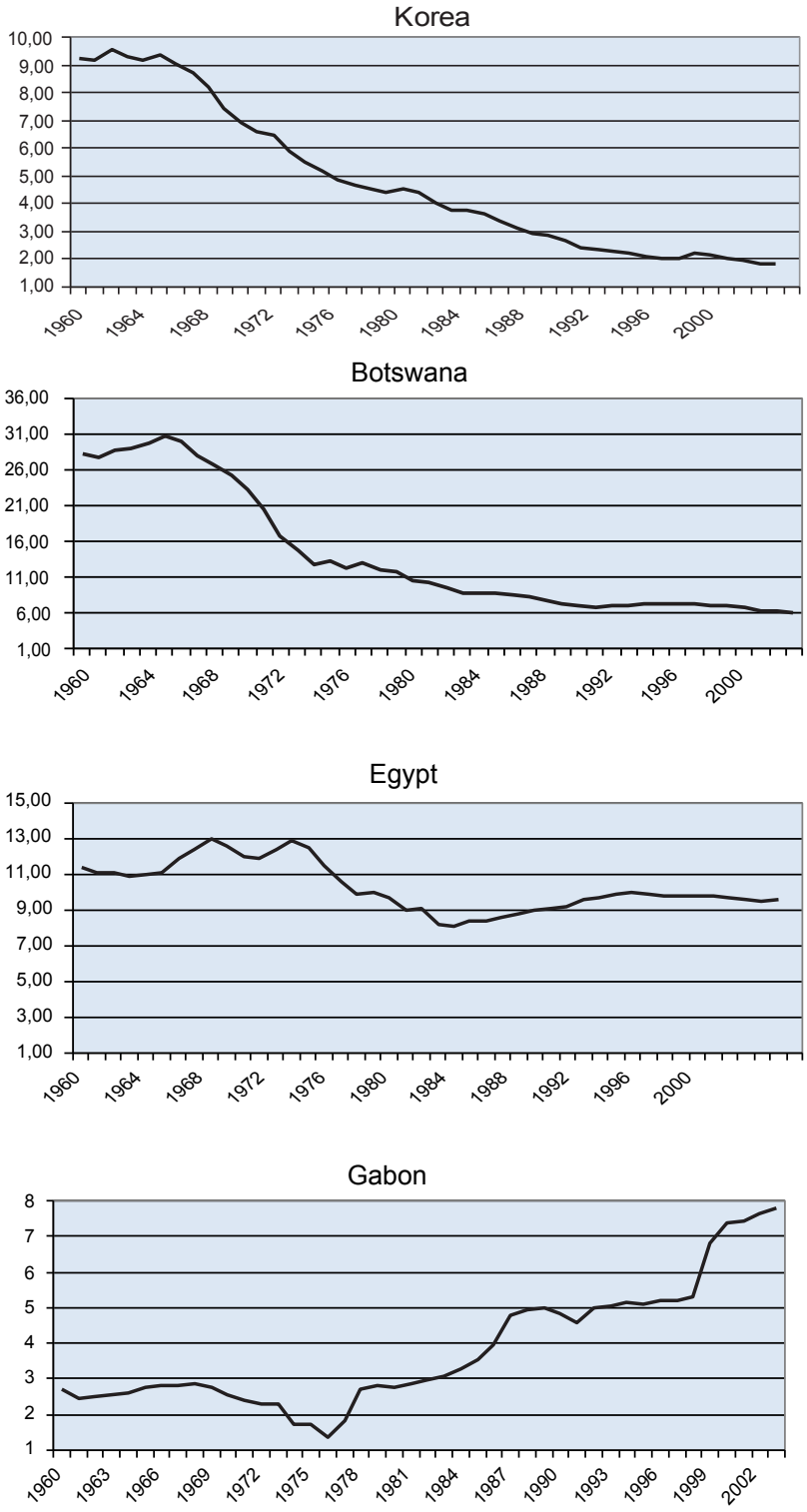
Divergent development patterns among poor countries since 1960: Empirical evidence has contradicted the forecast on the absolute convergence of countries. Analysis of the Maddison database (2003) found that between 1960 and 2003, the performance of countries with low per capita income varied considerably (see table 1with data on 46 countries). Only a few countries among the group formerly considered poor (the winning countries) succeeded in following the process of convergence with the rich countries.

As a result, South Korea and Botswana (winning countries) multiplied their per capita income twelvefold between 1960 and 2003 and therefore initiated convergence with the United States (see figure 1) whereas Egypt did not converge fast enough. Gabon (a losing country), after undergoing a phase of convergence until 1977, multiplying its GDP by 3 in 17 years, subsequently ceased to converge and lost 11 per cent of its per capita income over the period 1960-2003.

Table 2: Evolution gap of GDP per capita compared to the United States 1960-2003

Country	Evolution Gap (%)	Convergence speed
Korea Rep of	-80	**Very strong convergence**
Botswana	-79	
Singapore	-73	
Oman	-65	
China	-63	
Thailand	-62	
Malaysia	-54	**Strong convergence**
Portugal	-45	
Mauritius	-40	
Cape Verde	-36	
Tunisia	-31	
Egypt	-16	**Slow convergence**
Turkey	-14	
Sri Lanka	-13	
Pakistan	-12	
India	-11	
Dominican Republic	-10	
Yemen	-6	
Vietnam	-5	
Costa Rica	7	**Weak divergence**
Brazil	8	
Morocco	17	
Jordan	42	**Strong divergence**
Bangladesh	49	
Philippines	49	
Nepal	54	
Burkina Faso	57	
Nigeria	62	
El Salvador	66	
Guinea	67	
Algeria	71	
Namibia	78	
South Africa	81	
Benin	83	
Jamaica	85	
Kenya	86	
Tanzania	93	
Mozambique	103	**Very strong divergence**
Uganda	115	
Ghana	160	
Senegal	161	
Côte d'Ivoire	162	
Gabon	187	
Togo	188	
Niger	276	
Sierra Leone	279	

Figure 1: Evolution of the income deficit compared to the United States 1960 and 2003



Several empirical research activities have tested the validity of the convergence hypothesis.

Barro (1997) emphasized the positive role played by maintenance of the rule of law, low public sector consumption, an initial high level of life expectancy and male school enrolment, a low fertility rate and improved terms of trade. From a given level of any of these variables, growth would be higher when the country started with low GDP per capita (the conditional convergence phenomenon).

According to Barro (1997), the impact of democracy (political rights) on growth was not clear: where the level of democracy was low, the increase promoted growth but when it became higher, the new increase had a negative impact on growth, resulting from the crucial influence of pressure groups on public expenditure.

Sachs and Warner (1995) outlined the key roles of protection of property rights and trade openness to demonstrate that, during the period 1970-1995, the 'open' economies grew at the average rate of 4.5 per cent per annum whereas the 'closed' economies only grew at 0.7 per cent. However, it was underlined that the "Chinese jigsaw puzzle" to an extent contradicted these results. Cohen (2001) indicated that the Sachs-Warner variables were particularly significant when crossed with the education variable of a country. An 'open economy', according to Sachs-Warner, considerably increased the output of human capital.

Cohen and Soto (2002) went further, stating that poverty in countries should be interpreted as the multiplication of a set of handicaps relating to resources and total productivity. These handicaps combine to explain why some countries remained in the poverty trap. In order for countries to emerge from this trap, each of these handicaps should be addressed and corrected.

Comparing the industrial productivity of a sample of countries with varying levels of development, Cohen and Causa (2005) arrived at the same conclusion by pointing at five constitutive handicap factors for less productive countries (including some European countries): namely physical capital, infrastructure, human capital, level of integration in international trade and net residual productivity of each economy.

Successful countries applied various recipes: The winning countries during the period 1960-2003, such as South Korea, Botswana, Malaysia, China and Mauritius, implemented heterogeneous strategies to attain output, a mix of efforts to attract foreign investment, proactive development of exports (including manipulation of foreign exchange rates and maintenance of several domestic market exchange rates), domestic protection (through tariffs and non-tariff barriers) and subsidies to domestic industries, and encouragement of small and medium-scale enterprises (SMEs) and/or large enterprises, among other measures. As indicated by Rodrik (2004, b), it is difficult to search among the wide range of instruments for a simple recipe mix that is a universal key to success.

The new world context restricts the strategic choice of countries: The new globalization trend[3]and the present economy characterized by unprecedented trade liberalization, the revolution in the computer and telecommunications systems, rapid development of world outsourcing of works[4], openness of markets under the auspices of the World Trade Organization (WTO) and greater freedom in the movement of capital, considerably reduce the latitude of countries to implement their own economic policies.

For poor countries wishing to receive international assistance, there is an additional constraint to meeting the requirements of the IMF and the World Bank, institutions that highlight the potential distortions triggered by protectionism and subsidies and that encourage countries to reduce the scope of their regulations and establish outward-looking policies.

3 Some authors mention a third wave of globalization in history.

4 The strategy expert, Kenichi Ohmae, describes it as "a borderless world".

2.4 Concept of economic emergence

2.4.1 Underdevelopment and emergence:

Traditionally, economists divide the countries of the world into two groups: a group of developed countries and a group of developing countries (formerly called third world). Sometimes, a sub-group of less developed countries is included in the second group, for the poorest among the poor countries, characterized by very low per capita income. Recently, the terms 'emerging country' and 'emerging market' have also appeared in literature to designate the most dynamic developing countries among those with economies better integrated into the 'globalized economy'. Yet, the exact definition of the term has not been formulated, let alone the determining criteria for the distinction.

According to the *Robert* dictionary, "to emerge" is a phenomenon which attracts attention due to its value. Consequently, it may be considered that a formerly poor country emerges when it arouses such interest and stands out as different from the host of underdeveloped countries that lie on the fringes of world trade in goods and services as well as in ideas.

As a result, the concept of emergence varies, reflecting the ongoing globalization and the theme of "take-off". It is a turning point that enables poor countries to move from unbalanced low growth to a better balanced, strong and sustainable growth.

The concept of emergence, if well-defined, would contribute immensely to development theory. The only objective set by poor countries up to now is to converge with rich countries. Yet, convergence is a long, drawn-out affair (anywhere from ten to a hundred years or so) as stated in contemporary economic history. With only this distant horizon as the target, this leads to placement for a long time in the same grouping of developing countries on very divergent paths and perspectives. Thus, Singapore nowadays is classified by UNCTAD[5] with Sierra Leone (which is notably poor) in the same category of developing countries. Yet, Singapore need not envy the most advanced countries in Europe and America. A clear classification of developing countries with more precise strata identified is invaluable for effectively taking the existing realities into account.

Such an exercise responds to equity requirements and statistical precision. An additional virtue is the official recognition of the progress accomplished by the high-performing countries, and for them to celebrate their spurring quick-winsby continuing to muster the energy to chart a course for undertaking other structural reforms and to institutionalize best practices. This stage is very crucial in the transformation process which is the path to 'developed' status.

2.4.2 Emergence resulting from the ongoing globalization:

In order to initiate a future dynamic process with the rich countries, every poor country should take into account the equation, the new globalization, which offers as many opportunities as constraints in formulation and implementation of its development strategies. Every poor country should look for a place on the map of world production networks as well as on the map depicting the exchange of ideas, national competitiveness and economic dynamism. The strategic winning choice can be

5 UNCTAD Statistical Handbook 2006-2007.

summarized in the following diptych: the attraction of investments both domestic and foreign, and the development of exports[6].

In the new world environment, the development of investments should not only aim to retain domestic investments in the country (to prevent local entrepreneurs from taking their savings abroad or from balking at establishing factories in their own countries) but also to gain in share of foreign direct investment (FDI). FDI has been on the increase during the last two decades at an unprecedented rate. According to statistics provided by UNCTAD, the flow of FDI in the world has increased by more than sixteen times in twenty years from just above $55 billion in 1980 to just over $916 billion in 2015.

There are several advantages to a poor country from receiving FDI. In addition to coverage in the domestic deficit between savings and investments, there are also such advantages as: (i) access to new technologies and new techniques in production and management; (ii) capacity-building of the workers and entrepreneurs of the country through training on the job and outsourcing; and (iii) the opening up of new external markets.

With proper management of these benefits, the countries will succeed in outclassing the usual disadvantages associated with FDI, namely, (i) competition for domestic enterprises which are already struggling; (ii) protection of the know-how of foreign investors to prevent access by domestic investors, among others.

The development of exports has also become an essential issue for developing countries. Empirical evidence shows that open economies focused on exports have, in general, produced higher levels of productivity and economic growth (Sachs and Warner, 1995).

With successful implementation of the investment-export diptych, former poor countries will cease from being losers in globalization, and aim for full integration in the world economy, legitimately aspiring to join the ranks of 'emerging' countries.

2.4.3 The economic emergence as synonymous with dynamism, structural change and macroeconomic stability

The concept of economic emergence has appeared in the early 1990s in the context of the deregulation of financial markets driven by the U.S. and Europe, concomitantly with the technological and institutional innovations. These changes have led to the creation of new financial instruments, and especially the accelerated internationalization of capital investments. The major finding was that emerging markets offered new opportunities for high productivity financial investment [in theory and practice, the return on investment is higher in less developed countries] with a reasonable risk. Also, many countries in all continents, because they created stock markets and have carried out major structural reforms in recent years, consider themselves as emerging market economy. They are reinforced in this position by the International Finance Corporation (IFC), which designates as an emerging market any country that has a **financial market in transition, continually increasing in size, and activity level of sophistication**.

6 Maddison (2003) outlines the performance of rich countries during the past millennium from three factors (a) the acquisition and development of fertile land; (b) international trade and movement of capital; and (c) technological development and institutional innovations.

Considering the dynamism of financial markets in recent years, the value index of S&P / IFC (published annually) places tens of countries among the emerging market economies.

In truth, all low-income countries and middle-income whose market capitalization is relatively modest compared to the financial markets of developed countries, may grant the title of an emerging market. However, some of these countries (particularly in Asia but also in Latin America, Central Europe and even Africa), as a result of enormous efforts have managed to "emerge" from the lot and attracted the attention of investors (domestic and foreign). Economists were also amazed by the results achieved by these countries in terms of economic growth and export performance. The expression of the Asian miracle has been used in the early 90s, to both recognize the giant strides made by the "dragons" (Singapore, Hong Kong, Taiwan, South Korea) and the Asian "tigers" (Malaysia, Thailand, Indonesia, Philippines).

Taking as reference the performance of these newly industrialized countries, it has become possible to classify quite finely third world countries, clearly distinguishing the dynamic group of developing countries so called "emerging" countries, the least developed countries, namely the poorest countries who are mainly recruited in sub-Saharan Africa, and finally the developing countries that are in between the two extremes mentioned above.

Thus, could be considered as emerging markets, not all those who remain within the limits defined by the IFC, but ***"developing countries that attract investments (domestic and foreign), diversify and accelerate a sustainable and harmonious economic growth and successfully integrate the global economy, in a context of macroeconomic stability"***. In the economic literature, we propose this definition based on facts; only countries that meet this definition are concerned by the study when it comes to emerging markets.

In fact, the IMF attributed the label of emerging countries only to the twenty four following countries: Argentina, Brazil, Bulgaria, Chile, China, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, and Venezuela.

Three factors may be considered to measure the economic emergence of a nation: economic dynamism, the transformational structure of the economy and the country's macroeconomic stability. To emerge, a country must accelerate a sustainable economic growth (dynamism), diversify and continually improve its production structure (transformational aspect) and maintain a sound macroeconomic framework (macroeconomic stability aspect).

Economic dynamism of the country can be measured by the GDP per capita (which quantifies the wealth of the country), the growth of the GDP per capita (ie quantifying the exact evolution of the wealth), and the variation of the GDP per capita growth (this variable measures the stability of the evolution of wealth). A good country is one that is constantly evolving at a relatively constant rate. To these variables, we can add the GINI index that measures equity in the country (a good country is one whose growth is rooted in the sphere of the poor, meaning it is driven by economic sectors that occupy the most poor; such economy is pro-poor).

The transformation of the structure of the country is measured by the weight of the country export vis-à-vis the world, the export of manufactured goods compared to the export of goods, the propor-

tion of exports of services in total exports. These variables partially measure economic openness (no country can live in isolation). To these variables are added the weight of foreign direct investment (FDI). To emerge, a country must attract foreign investors due to the quality of its business environment. Finally, we must also take into account the structure of the production in the country. A good country is one that is not dependent on a single industry (the country must have several advantages), creates added value and whose structure of production is consistent with that which prevails in the world. These aspects are measured by Hirschmann-Herfindahl concentration and diversification ratios, the agricultural value added and manufacturing value added vis-à-vis the GDP.

Macroeconomic stability is measured by the budget balance (internal stability) and the trade balance (external stability). Is added to these variables the level of inflation in the country (a good country is one that has a relatively low level of inflation).

We used this definition of emergence to calculate a Synthetic Index of Economic Emergence considering a sample of 114 countries (see Appendix 2).

2.4.4 Emergence is a prerequisite and a decisive stage towards convergence and integral development.

***Convergence is a long process**:* The high-performing countries within the group of poor countries in 1960, such as South Korea have still not succeeded in catching up with the United States with regard to the income per capita. Even though South Korea has considerably reduced its initial deficit, its GDP per capita was still only 54 per cent of that of the United States in 2003 (compared to about 11 per cent in 1960). Whereas the convergence trend has been maintained (undoubtedly at a lesser pace as the country gets closer to the United States), South Korea could only be equal to the United States in terms of per capita income, after 2020, which is 60 years following the initiation of accelerated growth. For the low-performing countries engaging in the convergence process, the convergence period will be even longer, one to two hundred years or more.

***Emergence provides resilience for the acceleration of convergence and integral development*:** As convergence is a long, drawn-out process, emergence is a stage and when this is reached, the path towards catching up with the rich countries becomes more viable. In order to emerge, the poor country should therefore conform to international norms of competition and embrace best practices. As a result, it sets the records straight and gives itself-with some time difference- the same initial conditions as the emergent countries.

In order to cross the emergence threshold, the poor country should therefore attain the same level of education (in particular secondary level and vocational and technical training) that historically existed in the countries that have already succeeded as well as the equivalent level of savings and investments and relatively comparable institutions and demographic data. The Barro version of conditional convergence can then be applied in earnest. The newly emergent country can seek convergence with the rich countries while developing its innovative capacities in particular.

2.4.5 Attainment of the stage of economic emergence depends on the capacity of the poor country to undertake efficient structural reforms

Emergence is not the fruit of an act of chance. A country can initiate and record growth peaks over a certain period. However, as Haussmann, Pritchett and Rodrik (2004) indicated, economic growth can only be sustainable and development-oriented on condition that the concerned country pursues sound economic policies and has excellent institutions. The structural reforms undertaken in line with these requirements constitute the prerequisites for emergence.

Countries rich in natural resources (oil and mining in particular) as well as large countries population (such as China, India, Russia and Brazil), are major destinations for investors (although in varying degrees, genuine efforts for openness and reform have been conducted in recent years).

The smaller countries without natural resources must however develop proactive policies to attract investors. Reforms attached to this requirement are the prerequisites for the emergence.

Thus, for attracting, in a lasting and substantial manner, investment portfolios, financial markets and foreign direct investment in the form of factories, any developing country must ensure strengthening its international competitiveness by implementing the essential elements constituting the six reforming blocks that follow:

Block 1: Good governance policy

- political stability
- peace and security
- compliance with the rule of law and civil liberties
- national values-oriented development
- active participation of civil society and local communities in the design and development management.

Block 2: A quality regulatory framework:

- streamlining of administrative procedures related to the exercise of economic activities and the fight against corruption;
- establishment of an effective control of economic activities in order to remove part of the cash positions and to ensure the competition;
- promoting public administration competent, honest, credible and predictable, friendly and committed to promote private sector;
- establishment of a credible legal and judicial system, capable of enforcing the law with fairness and transparency, in particular to enforce property rights and contracts.

Block 3: The development of human capital:

- the availability of a local workforce well trained, skilled, productive and in good terms with employers to advance the company;
- ability to absorb and adapt available technologies;
- promotion of endogenous research-development.

Block 4: class infrastructure

- existence of good physical infrastructure (roads, ports, airports) and a good telecommunications system.

Block 5: environmental protection and harmonious development of the national space

- preservation of biodiversity;
- fight against pollution;
- management of climate change.

Block 6: Economic openness and the promotion of private sectorliberalization of economic activity and prices;

- open economy (outward-looking policy) through the liberalization of trade and the construction of large integrated markets with neighbouring countries, and the encouragement of foreign investment by removing barriers;
- limitation of government intervention in the economy;
- existence of a dynamic local private sector, competitive, creative, honest and visionary;
- ability to generate strong local savings and availability of a good local banking and financial system regulated by effective supervision and able to make an optimal allocation of resources. The corollary is the transparency and reliability of economic information for proper evaluation of performance and potentialities of enterprises;
- establishment of a quality system of incentives (tax, land and industrial buildings, agricultural policy, etc.).
- Implementation of a good promotion of the country through promotion agencies and winning communication strategies.

Many of these items were listed in what was called "Washington Consensus" (original and revised), which has long guided and continues strongly guiding the dialogue between the Bretton Woods institutions and authorities in poor countries. But as noted by Rodrik (2004 a, 2004 b), the poor country that meets all the requirements of the Washington Consensus is de facto a developed country.

So rather than trying to fix everything at once, a country must identify, through a strategic diagnosis, the most serious obstacles hindering its international competitiveness and engage priority reforms with the most impact on growth. For example, in India, in 1980, the main constraint was that the government was seen as a hostile actor to the private sector; for China in 1978, the constraint was the lack of incentives oriented market. Once the growth momentum switched, the reforms will be accelerated and costs distributed over time.

Once the priorities for reform have been identified, one country must ensure **blocks of consistent and complementary reforms** (de Macedo and Martins (2006)). When several elements are interdependent reforms, reforming some of them without changing other greatly reduces the chances of success of reforms (*the principle of super-modularity*). Consistency may be set up from *the top* (when the balance of reforms is sought through ambitious reforms in each component of the block) or from *the down* (when the reforms are all minor).

The reform projects must also be managed with attention to the sequence of blocks of reform, the time horizon of their entry into force and implementation, as well as necessary measures.

Finally, it should be promoted a national consensus on reforms to make them irreversible.

2.4.6 Economic emergence and social welfare

As Leopold S. Senghor said, man should be the beginning and the end of development. The concept of convergence cannot be seen solely from the economic viewpoint. The citizens of the emergent country should feel that their daily life has improved and that new opportunities exist for them in education, health as well as in employment and income earning. Emergence must therefore be translated into improved living conditions of populations.

Conversely, economic convergence can only be sustainable on condition that certain social prerequisites are fulfilled. It is now universally accepted that the quality of human capital (an educated population, well fed and in good health) is one of the most crucial factors in economic growth particularly in the new globalized environment in which knowledge and know-how play a cardinal role in increased economic productivity.

In fact, the poor, men and women, can not participate and take advantage of the growth unless they have enhanced capabilities, are well fed, healthy and well protected against vulnerabilities, through social protection nets, and they have a good quality of life and a sustainable environment. The improvement of social services and the quality of life is a foundation for long-term bases of growth and development, in addition to being an objective in terms of strengthening social welfare.

According to the calculations of the World Bank and the United Nations Development Programme (UNDP) comparing on the one hand, the respective evolution of GDP per capita and the poverty rate and on the other, the GDP per capita and the Human Poverty Indicator (HPI) of various countries for a given year demonstrate that there is often a correlation between the variables on economic growth and the variables on poverty. In other words, a country improves on its social index as it becomes rich. However, it is not a causal issue as the classification of countries according to human poverty does not strictly follow the established income per capita indicator. An effective policy for redistribution of the benefits of growth also counts in the real impact of economic dynamism on the living standards of the poor.

2.4.7 The quality of institutions as a prerequisite for the successful emergence

The role of institutions has been clearly demonstrated by Kaufmann and others (2005) who formulated a global indicator of good governance for determining the quality of institutions. This included human rights and democratic rights, political stability, absence of political violence, effectiveness of government, simplicity and rapidity of administrative procedures, respect for the rule of law, and the fight against corruption. In putting this indicator to the test, IMF (2005) discovered that there is a strong correlation between good governance and the level of national income per capita. In particular, sub-Saharan Africa would have multiplied its GDP per capita by two and a half times if its institutions had the average quality of world institutions.

IMF (2005) also found that institutions exert a significant influence on future economic growth as they promote the sustainability of economic best practices. Further, high-quality institutions reduce growth volatility and facilitate attainment of the economic and social goals of a given country.

Econometric models show that growth is correlated with the capacity of institutions to establish a rule of law, to protect property rights, to reduce corruption, to regulate markets in a transparent and efficient way and to ensure a political stability.

2.4.8 Building emergence must be strategically conducted

For a poor country, reaching the stage of emergence requires a long-term effort. But the most important thing is to start the process, to set up the adequate institutional framework and to implement, with tenacity and determination, the adopted action plan. It is this path that followed Mahathir Mohammed of Malaysia and Lee Kuan Yiew of Singapore, for, in less than thirty years, passing from Third World to the group of newly industrialized countries ("First World").

Given the magnitude of the reform program, its implementation is further facilitated if it is initiated by a government that is leading or elected, that has the confidence of the people and has minimal time to calmly attack important emergence activities.

In any event, only a quality leadership can succeed emergence. The President of the Republic, the Prime Minister and members of the government must convince themselves of the need to initiate operation to the emergence, know the way and commit themselves with faith and voluntarism. Africa will not emerge unless its leaders are in line with the requirements of emergence.

This quality leadership should then define a method and a priority agenda. Firstly, it is important to develop a vision articulated around a program "Emergence" which will be implemented under the coordination of a structure located at the highest government level. This program will be based on best international examples and build on action plans, global and sectoral, already identified in the country as economic reform and on upgraded infrastructure.

The next step is to ensure that citizens take ownership of the vision of emergence. Communication and education of the population to the new paradigm and new attitudes conveyed by the vision should particularly receive attention from the authorities.

Importantly, the consistency of the agenda, over time, remains the key factor of success. Therefore, a consensus should emerge between the main political parties on the program "Emergence", and each new government can then consolidate the achievements of its predecessor and initiate the following projects.

2.5 Conclusion

The economic emergence is complex and multifaceted. It goes beyond simple acceleration of growth (the usual approach of convergence) to embrace the profound economic and technological reforms (diversification and increased value-added production and exports). The country that emerges is taking a decisive step in getting closer to the most advanced countries. Therefore, the concept of

economic emergence is a powerful management tool for government authorities in underdeveloped countries, in setting an intermediate target to be achieved over a relatively short period (ten years) in the path towards integral development.

The fundamental determinants of emergence: Why do some countries succeed and others fail? Why Malaysia has managed to emerge and not many developing countries that are rich in natural resources? Due to its impact on the social norms and values, the functioning of public organizations, the regulatory framework, procedures and public policies, **the quality of political leadership** may be the **profound endogenous cause** of the economic and social performance of poor countries, more than exogenous factors such as the effect of neighbourhood or colonial history. It is important to clearly highlight this fact (through indicators linking political leadership and economic emergence), then illustrate by some Success-stories (Singapore, Malaysia in particular), how an effective political leadership can emerge in a country, achieve an institutional change; in relying on an efficient public administration, implement good policies leading to economic emergence (improving the business environment, human capital development, encouraging the adoption of positive values, ownership of technology, promotion of public-private partnership and development of factories that are export-oriented). The role of democracy in the sustainability of reforms leading towards convergence should also be clearly highlighted.

3. Identification of the Development Indicators Relevant to Africa Beyond 2015

3.1 Introduction

In perspective for the post 2015, three schools of thought emerged today:

- The school of those who wish to extend, for a few years, the 2015 deadline, keeping the same indicators and the same target;
- The school of those who suggest to slightly adjust the existing MDGs, introducing new indicators;
- The school of those who advocate a radical change of approach, thinking the problem entirely MDGs.

In any event, the studies conducted in the framework of the platform "RIO +20" should lead to the proposal of a new development monitoring framework through social, environmental and institutional indicators.

In addition, the MDG approach gives insufficient importance to the economic dimension which is the basis of social progress. It is therefore crucial to go beyond the strict framework of the eight MDGs and to consider the phenomenon of development as an integrated and indivisible one. As the adage says: "We can not manage it, if we can not measure it". It is therefore essential to broaden the perspective of development indicators, making sure to put them in line with the theories of growth and development of nations, and to take into account all dimensions of development.

Moreover, this is the New Partnership for Africa's Development (NEPAD) Program Vision of the African Union.

NEPAD is based on the following guiding principles: (i) African ownership and leadership, (ii) the promotion and protection of human rights, good governance and democracy, (iii) basing the Africa Development on resources and ingenuity of Africans, with a human-focused development, (iv) channeling resources for quality implementation as quantified by the studies on the impact of development and objectives of consumers; (v) promotion of gender equality; vi) acceleration and strengthening of regional and continental economic integration; (vi) construction of a new partnership between Africans and between Africans and the international community and especially the industrialized world (vii) the implementation of development programs for holistic and integrated Africa.

This vision of NEPAD is in line with the need to expand the indicators and to consider with a view to long-term development. It also poses a requirement that the Africans themselves take ownership development and therefore retain the initial choice of indicators to measure and monitor.

In the context of discussions on the post 2015, it is therefore of utmost importance that developing countries (in Africa and elsewhere) offer the first draft of indicators to monitor development at national, regional and global.

A dialog will then be opened to improve this initial proposal and agree on the set of indicators to be considered as well as their monitoring level (national, regional or global).

3.2 Choice of indicators

3.2.1 Introduction

For poor countries, it is necessary to choose a wide range of relevant indicators, based on their overall development needs. Moreover, it is well that all African countries are in developing their national development strategies and / or fight against poverty. A table of indicators, and sometimes a short list of indicators can be found in annex.

However, there is insufficient convergence between African countries in the choice of indicators; the national specificities explain partially this fact.

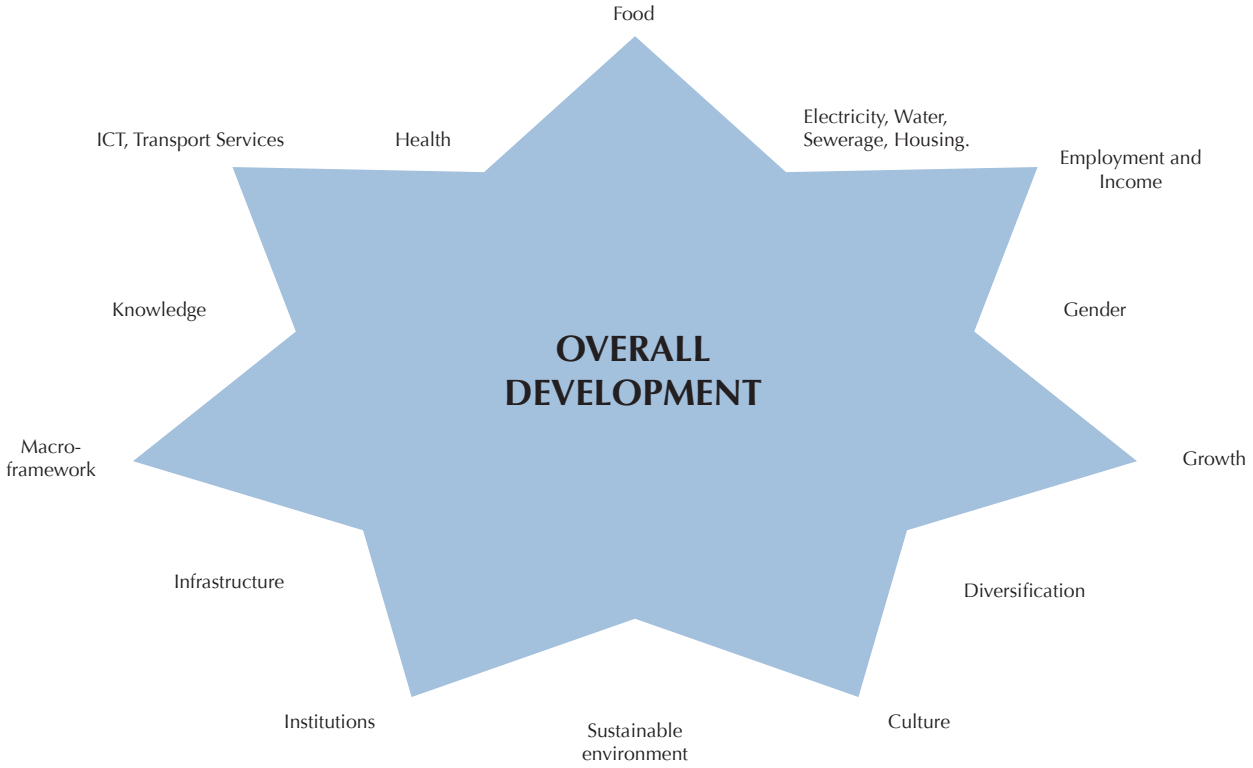
Realities and development needs are very similar; therefore, it is possible to develop a comprehensive framework that can serve as a reference for the selection of indicators of development in Africa that each country can adopt and slightly adjust to reflect national realities. The African Union, the Economic Commission for Africa and the African Development Bank, in collaboration with other interested partners could facilitate this dialogue between African countries; such dialogue may result in a common African position for the post 2015 development agenda and the ***African Reference Framework for Development Indicators (ARFDI)***.

3.2.2 Development dimensions in Africa

The analysis on development theories identifies seven dimensions grouping the main factors for the development of African nations (see figure2):

- Human dimension: (a) access to knowledge by all; (b) gender development
- Infrastructure dimension: universal access to potable water, sewerage facilities, electricity, ICT, housing and good transport system.
- Environmental dimension: the fight against pollution and the preservation of the biodiversity.
- Subregional and regional integration.
- Institutional dimension: the strengthening of public institutions.
- Economic dimension: (a) a stable macroeconomic framework; (b) strong and regular growth; (c) capacity for diversification and transformation.
- Social dimension: (a) a well-fed population; (b) good health for all; (c) good social security for all the vulnerable groups; (d) employment and income for all; (e) child protection; (f) preservation and development of the cultural heritage.

Figure2: Some key factors for the development of a country



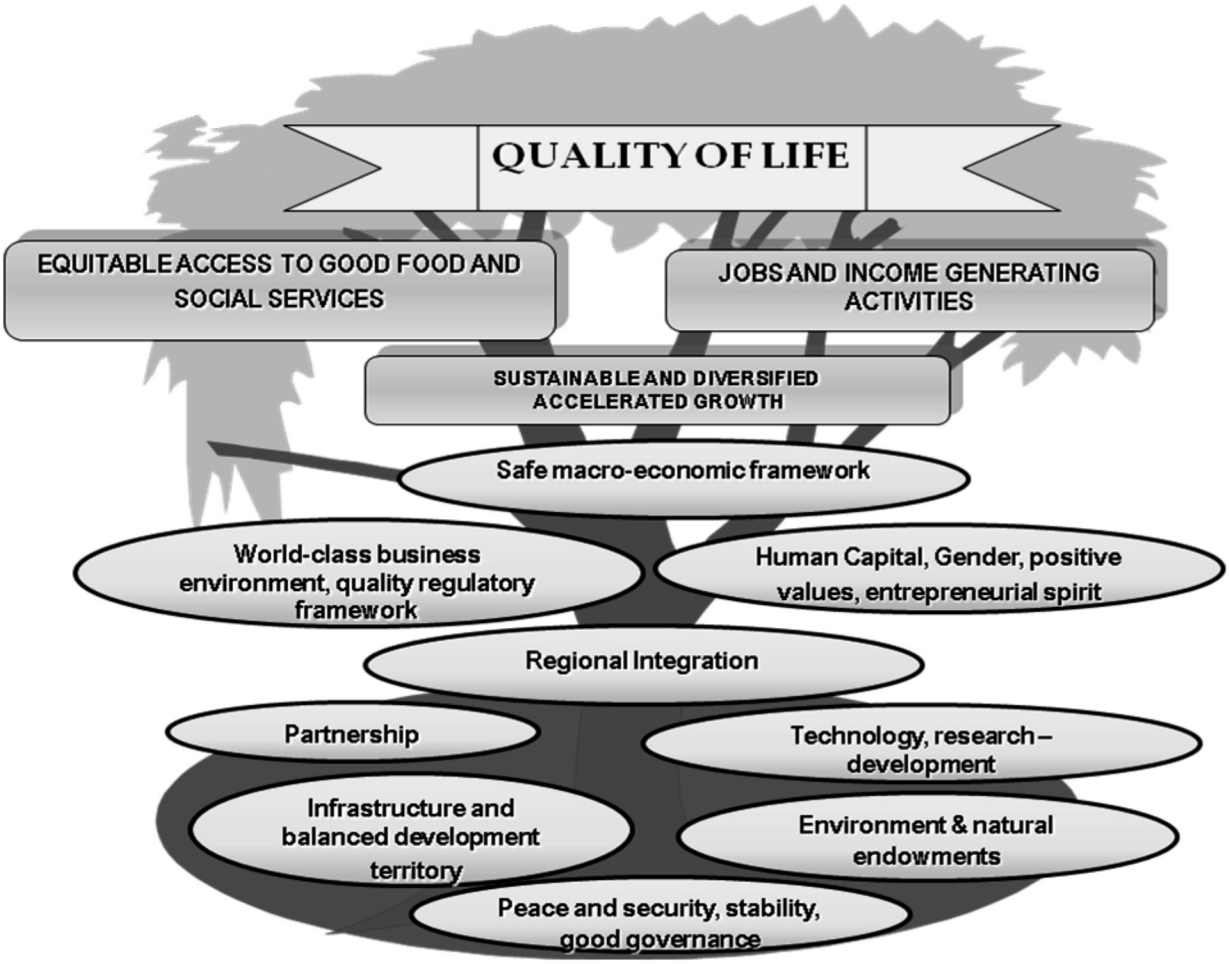
These dimensions can also be presented in a perspective of strategic management of development (see Figure 3, tree quality of life).

At the base and roots of Africa's development, there is peace, security and good governance. It is a precondition that determines the success of any real development work. Other factors such as environmental protection, the development of human capital, technology and infrastructure, as well as the regulatory framework for economic activities, regional integration and partnership also constitute fundamentals bases and levers of development.

The implementation of these levers allows the said country to satisfy the initial conditions allowing it to converge with emerging economies; and thus to succeed in obtaining rapid economic growth, a diversified economy and integrated into global networks, in a safe macroeconomic framework. It is the trunk of the tree of life and the quality of the fundamental pillar of development.

The wealth created in the concerned country will then create decent jobs and income for these populations throughout the territory, and satisfy their demand for social services and, ultimately, to ensure their welfare and quality of life.

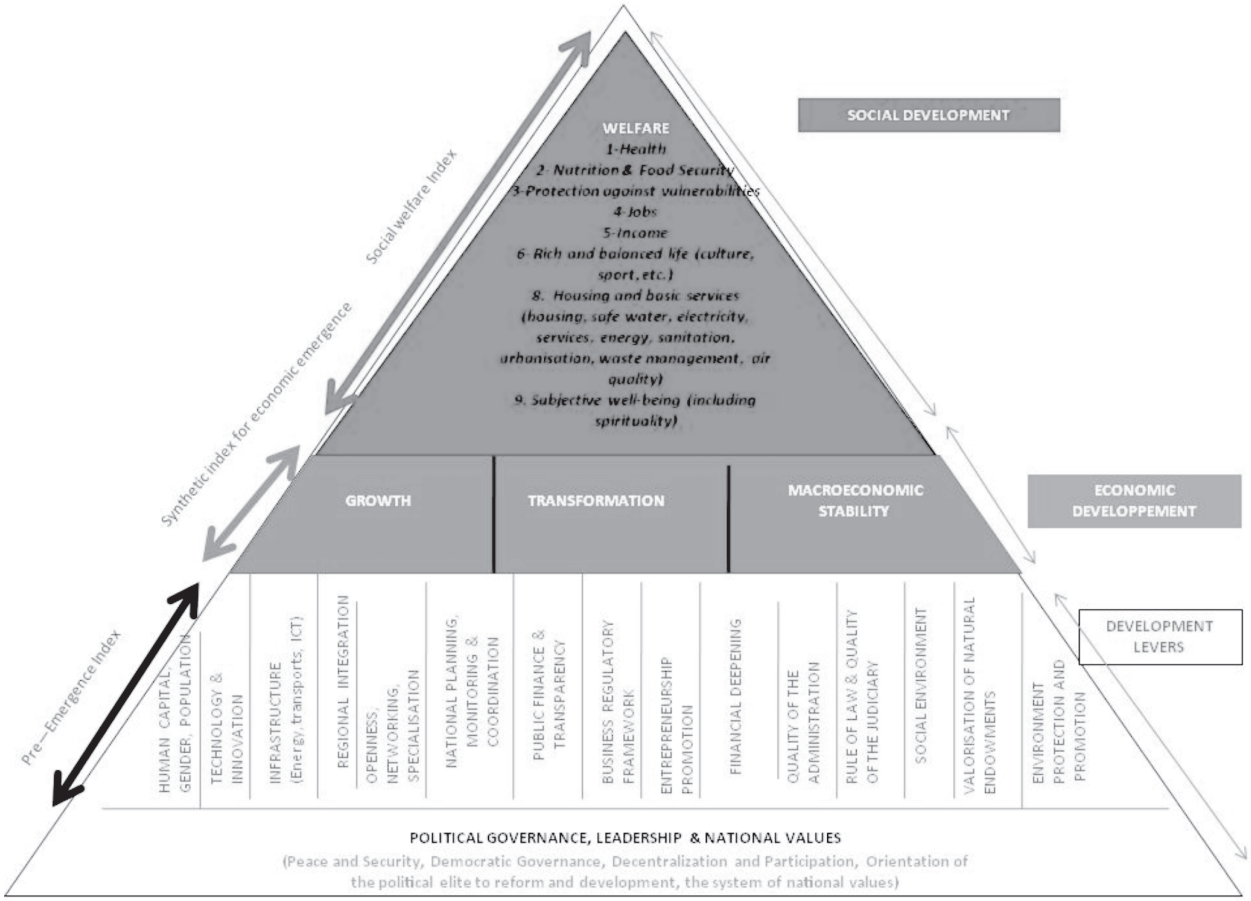
Figure 3: Tree of quality of life



This vision of development can also be represented as a pyramid (see Figure 4 below), distinguishing levers results (healthy and diversified economic growth) and fruits of development (social welfare).

Indicators can be identified for each layer of the pyramid and can be grouped and used to calculate several synthetic indices: (i) governance index, (ii) a synthetic index of pre-emergence (or global competitiveness), (iii) a composite index of economic emergence (EESI), (iv) a synthetic index of social welfare.

Figure 4: Pyramid of balanced development



Annex 2 of this document describes the methodology that was used to measure the composite index of economic emergence (EESI).

3.2.3 Approach for the choice of indicators

Concerning the selection of MDG indicators, we first integrated them into the seven dimensions. Subsequently, we identified the new indicators (blue coloured in the table), through, particularly, the United Nations specialized agencies databases (see table 3 in Annex) as well as the results of the survey that ECA conducted in 2011 from its African partners.

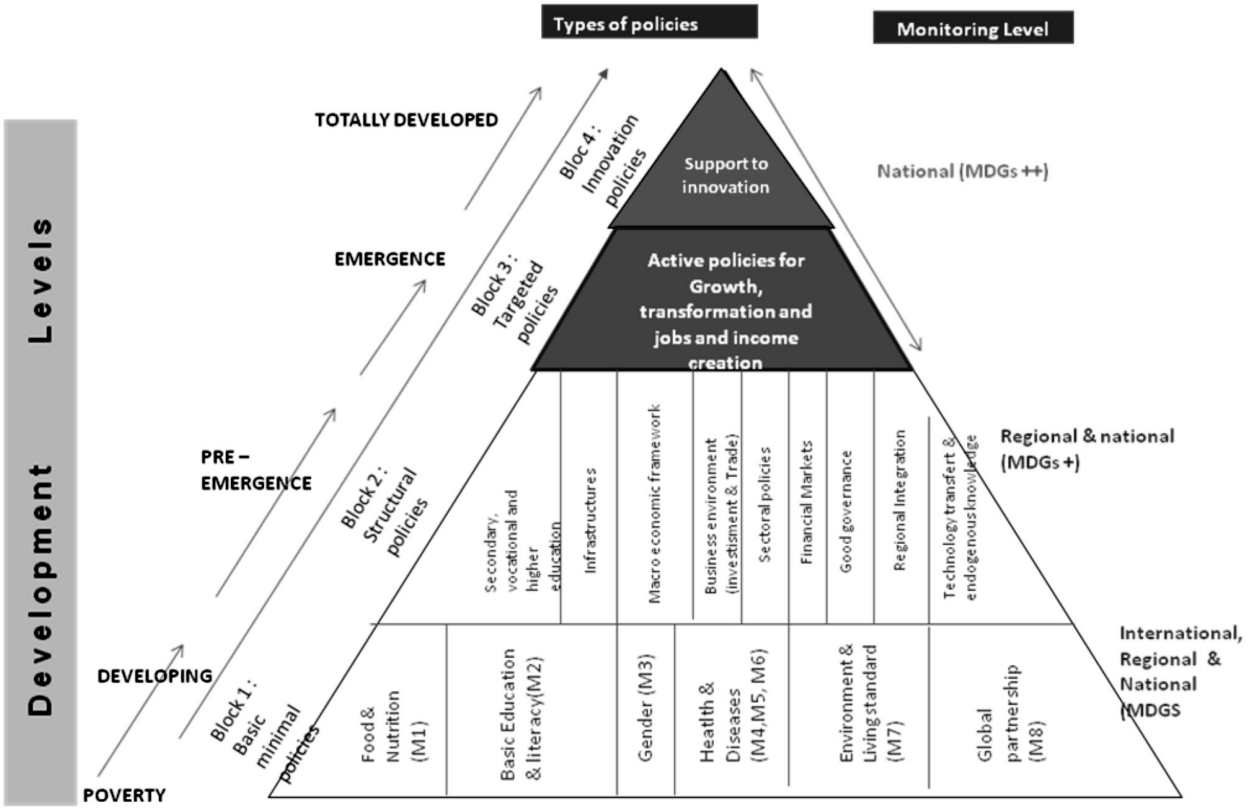
It is a starting point for discussion; statistical services, academics and development practitioners can enrich and build constitutive consensus on an African Reference Framework for Development Indicators (ARFDI).

3.2.4 Monitoring indicators

Monitoring of development indicators identified in the ARFDI should be gradually done at different levels: international, regional or national. The number of indicators to be used should increase as we approach the lowest level of targeted population who are the ultimate goals of development.

Figure 5 below describes the approach suggested for this purpose.

Figure 5: Gradual monitoring of development indicators



The international level should only deal with a very restrictive list of basic indicators that each country should monitor to ensure a decent living for the whole population. The international community should ensure that this minimum standard is accessible to every citizen. In fact, this was the basic purpose of the MDGs before the goals were gradually expanded to include a wide range of indicators difficult to achieve by all countries within the timeline set and with unequal relevance.

Therefore, instead of increasing the number of indicators to fully take into account the other development factors, the international level should use an improved selection method regarding the current indicators and only retain about ten of them as key indicators of the MDGs. Basic indicators of worldwide importance can be used for poverty reduction and can help to put countries on track to development. The current eight MDGs remain relevant as a whole but their associated targets and indicators should be better selected.

At the regional and subregional level, in addition to the indicators identified at the international level, the monitoring should include a second category of indicators to be attained, to promote and prepare them for the pre-emergent stage (these are the MDGs +) through implementation of structural policies and improvement of the factors that determine a country's global competitiveness.

These structural policies focus in particular on secondary, technical and higher education, infrastructure, macroeconomic framework, regional financial markets, regional integration policies, good governance, transfer of technology and development of internally generated knowledge.

At the national level, the support policies targeting growth and employment can be efficiently implemented. It is therefore at this level that the emergence indicators should be monitored (these are **MDGs ++**). The most developed sub regions in terms of regional integration (such as ECOWAS in West Africa) could also plan integration of these policies in their monitoring system for the indicators.

Finally, the support for innovation is part of searching a total development. As a result of its long-term emphasis, it is also a matter of what the national aspirations are.

Indeed, management of the four levels is not linear; on the contrary, they are interlinked. The issue is not whether the country addressed level 1 (namely poverty reduction) first, before addressing the factors in level 2, and so on.

In any country, even poor, the appropriate policy should include elements from all of the four development levels. The only change would be in terms of the level of priority given to them, (particularly in budgetary allocations).

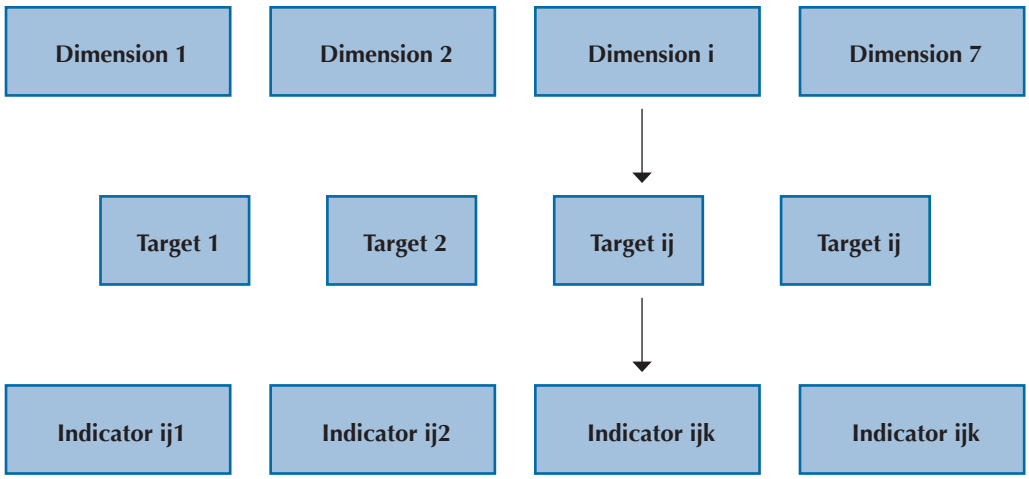
4. Aggregation of Indicators as an Index

4.1 Dimensions of the index

As a first step, each of the seven dimensions can be quantified as an index reflecting the realities and the priorities of African countries taking into account their level of development and their future needs.

In order to analyse the new indicators, we were able to design various scores and these scores were calculated according to the given level.

There are seven development dimensions and each contains several targets. Each target has several indicators. Therefore, in broad outline, the new indicators could be presented as follows (the priority ranking to be drawn):



It is then possible to calculate the total development index (TDI) using an aggregate of the seven dimensions.

Analysis of the development dimensions is therefore challenging in terms of the analysis and calculation. As priorities have been established among the various levels, evaluation of the disparities among the countries could be done through analysis at each level. It is therefore necessary to calculate the scores per level.

Concerning calculation of the scores, this will be done from the lowest level (at the indicator level) to the highest level (the level in the aggregation of all the 7 dimensions). In the analysis of this phenomenon, it is first of all important to note the aggregated indicator and then the lower levels, for a better understanding of the aggregated indicators.

Method used in performance evaluation

How to evaluate the performance of given country i?

In order to evaluate the performance of a country, it is necessary to create new scores according to the various levels. Let us assume that we want to evaluate country i:

At the indicator level (the lowest level)

For this country, we have its score on a given indicator (at the detailed level).

For example, regarding the indicator: the proportion of the population living on less than a dollar a day purchasing power parity (PPP), we have the score for the calculated variable of the country concerned.

This score can be used to assess the performance of the country. However, the use of the indicator score has disadvantages for performance comparisons among countries. Therefore, for countries without the same assumptions in the calculation of the indicators, the range of values should be considered rather than the calculated scores. This approach is more robust in terms of assessment (it is as if we prioritized the indicators and the ranking is relatively stable for the slight variations).

Determining the range of values for each considered indicator is necessary. It is also important to determine the classification of the country. Each indicator will therefore be grouped into a classification. Country i will be classified accordingly in the various indicators.

In order to classify an indicator, the two questions dealt with are: the number of categories to be set up (two or three or more) and the limits of the classification. A priori, the indicators cannot have the same number of categories. There is need to determine the optimal number and limits of the categories for each indicator. In this process, the opinions of experts can serve as a guide in the process.

At the target level (second level)

The performance of country i at the level of a given target is a combination of its performance in the various indicators that constitute the target. The challenge is to determine the combination to be selected and the weighting for the indicators of the target. There are two possible choices: the opinion of an expert or the establishment of the weightings through factor analysis methods. The latter approach is only relevant when the number of target indicators is not too small (should be at least 4).

Therefore, it is necessary to assess countries at the level of the target through a combination of the indicators of each target.

At the dimension level

This assessment is similar to the one carried out at the target level: the performance of country i on a given dimension is the combination of performance outcomes on the various targets constituting the development dimension. Thus, countries can be assessed on the dimensions through a combination of the targets for each dimension of development.

At the overall level

Following the performance evaluation of the country in each dimension, the overall performance on all the 7 dimensions can be carried out. In this case, the best approach is use of factor analysis.

4.2 General conclusion

Next Steps

Based on the potential list below (see Table 3 in Annex), an actual list may be proposed as new indicators after consultation with stakeholders.

The next step is to present each indicator as follows:

- Rationale behind the importance of the indicator;
- Definition;
- Calculation method;
- Methodology of compilation;
- Variables that make up the indicator;
- Data Collection;
- Breakdown of data;
- Data Sources;
- Gender Issues;
- Frequency of measurement;
- Limitations of the indicator;
- Scoring Systems.

Appendix

Appendix 1: Table 3: List of potential indicators of development for Africa

1. HUMAIN CAPITAL DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
ÉDUCATION, TRAINING, KNOWLEDGE	All boys and girls to complete a primary cycle	School enrollment, preschool, (% gross)
		Net enrollment ratio in primary education
		Proportion of students who started the first year of primary school who complete primary school
		Pupil-teacher ratio in primary
		Trained teachers in primary education (% of total primary school teachers)
		Percentage of primary schools within a radius of less than 5 km
	Education expenditure	Public expenditure on education as% of GDP (per cent)
		Public expenditure on education as% of Government expenditures (per cent)
		Capital expenditure on education as% of Government expenditures (per cent)
		Primary share of the total education budget
		Secondary share of the total education budget
		Tertiary share of the total education budget
		Budget allocation for higher education between the social and the academic component
	Secondary education level	Net enrollment ratio in secondary
		Proportion of students who started the first year of secondary education who complete high school level 1 (Level BFEM)
		Proportion of students who started the first year of secondary education who complete high school level 2 (A level)
		Pupil-teacher ratio in secondary
		Trained teachers in secondary education (% of total teachers)
		Percentage of secondary schools within a radius of less than 5 km
	Technical and vocational education	Proportion of high school students enrolled in courses for technical and vocational education
	Higher education, research and engineering	School enrollment, tertiary education (% gross)
		Gross enrollment in higher education in science, mathematics and engineering
		Number of patents produced in the country (average of last 5 years)
		Number of licenses purchased
	Literacy	Literacy rate for adult
		Youth literacy rate (15-24 years)
Gender	To eliminate gender disparities and ensure women's empowerment	Girls / boys ratio in primary, secondary and tertiary
		Ratio of Literate women to men 15-24 years old
		Proportion of women employed in the nonagricultural sector
		Proportion of seats held by women in national parliament
		Prevalence of female genital mutilation
		Sexual violence against women

2. INFRASTRUCTURE (Quality) DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
QUALITY ELECTRICAL SERVICES	To improve network power quality	Installed electric power per capita
		Average number of hours of outages recorded by large companies per year
QUALITY NETWORK TRANSPORT	Improve the quality of the transport network	Number of km of paved roads in good condition / land area
		Number of km of dirt roads in good condition / land area
		Number of km of trails / land area
QUALITY OF TEL-ECOMMUNICATIONS INFRASTRUCTURE	Improve the quality of the telecommunications network	Internet bandwidth available to users

3. ENVIRONMENTAL DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
	• Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources • Reduce biodiversity loss, achieving, by 2010, a significant decrease in the rate of loss	Proportion of forest areas
		CO2 emissions (total, per capita and per dollar of GDP in purchasing power parity)
		Consumption of substances that deplete the ozone layer
		Air Quality
		Water Quality
		Land degradation
		Climate change
		Proportion of fish stocks living in safe biological
		Proportion of total water resources used
		Proportion of terrestrial and marine areas protected
		Proportion of species threatened with extinction

4. INSTITUTIONAL DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
Administrative governance	Quality of public administration	
Economic governance	Planning, monitoring, coordination	
	Business environment	Score Doing Business
	Public Finances	
	Procurement	
	Transparency	Index of perception of corruption
	Regulation of economic activities	
	Quality of public policy support a production	Index quality of industrial policy
	Statistical System	
Judicial governance and rule of law		
Human security		Perception of safety
		Refugees and displaced persons (% of population)
Democratic governance		
Local governance and participation		
Social cohesion		

5. REGIONAL INTEGRATION DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
Economic integration	Fiscal and monetary integration	Participation in a regional monetary zone
		Number of convergence criteria followed by the country
	Trade Integration	Participation in a regional trade grouping
		Share of intra-African trade in the foreign trade
		Facilitating movement of goods and services in the sub-region in the country
	Integration of sectoral policies	Number of sectoral policies aligned with the sub-regional policies and / or regional
	Integration of infrastructure	Existence of infrastructure interconnection with neighboring countries (Electricity, Roads regional interest, railways, etc.).
		Quality of border roads in the country
Political integration	Integration of peoples	Degree of freedom of movement of people in the sub-region in the country
		Ease of establishing populations in the sub-region in the country
Discipline communautaire	Respect of community commitments	Level of ratification by countries texts sub-regional and regional
		Respect of annual contributions to sub-regional and regional

6. ECONOMIC DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
	A stable macroeconomic framework	Inflation rate (average of last five years) (must be less than 3% on average)
		Budget balance (average 5 years) (must be less than 3% of GDP on average)
		Balance of Current Account Balance as% of GDP (average 5 years) (must be less than 5% of GDP on average)
	Strong growth regular	GDP per employed population (PPP) (year)
		Average growth of GDP per capita over the last five years
		Variability in growth over the past five years.
	Capacity and diversification of transformation	Agricultural value added per farmer
		Manufacturing value added to GDP
		Value-added services
		Weight direct investment in the country in relation to FDI in the world
		Financial depth
		Entrepreneurship
		Degree of conversion in the country of agricultural products
		Degree of conversion in the country exports of mining products and hydrocarbons
		Manufacturing exports / exports of goods (average five years)
		Terms of Trade
		Export diversification index (average five years)
		Concentration index (average five years)

7. SOCIAL AND CULTURAL WELFARE DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
Food and Nutrition	Halve, between 2015 and 2040 the proportion of people who suffer from hunger	Prevalence of underweight children under 5 years. (moderate and severe)
		Proportion of population below minimum level of dietary energy consumption
Employment and income-generating activities	Ensure full employment and decent work for all, including women and young people to find decent and productive work	Employment / population ratio (in%)
		Proportion of self-employed and family workers in total employment
		Youth unemployment rate, aged 15-24, both sexes
		Proportion of employed people living below $1 (PPP) per day, percentage
		Proportion of own account and contributing family workers in total employment, both sexes, percentage
	Facilitate access to microcredit all segments of the population	Microcredit access rate for people
Cash income and inequality	Halve, between 2015 and ... the proportion of people whose income is less than one dollar a day	Proportion of the population living on less than a dollar a day in purchasing power parity (PPP)
		Poverty gap between the regions within the country
		Gini Index
		Proportion of population below minimum level of dietary energy consumption (per cent)
		Share of poorest quintile of the population in national consumption
		Poverty gap between the regions within the country
Housing and living	Significant improvement in 2020, the lives of at least 100 million slum dwellers	Proportion of urban population living in slums
	Halve, by 2040, the percentage of the population has no sustainable access to safe drinking water	Proportion of population using an improved drinking water source (in urban and rural)
	Halve, by 2040, the percentage of the population has no access to basic sanitation services	Proportion of population using an improved sanitation facility
	Improve access to quality electricity throughout the national territory	Rate of household access to electricity nationally
		Rate of household access to electricity at rural
		Rate of household access to electricity at urban
	Improve access to energy services	
ICT access	In cooperation with the private sector, make available the benefits of new technologies, especially information technologies and communication, are available to all	Number of fixed lines per 100 inhabitants or mobile
		Number of Internet users per 100 inhabitants
Access to transport services	Public transportation	
	Transportation means	Percentage of households with own transportation
Market access		
Access to public services		

7. SOCIAL AND CULTURAL WELFARE DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
Access to cultural services		Cultural infrastructure (number of museums, theaters, cultural sites classes per 1,000 people)
Health	Reduce by two thirds, between 1990 and 2015, the mortality rate of children under 5 years	Mortality rate of children under 5 years
		Infant mortality rate
		Neo-natal mortality rate -per 1,000 live births
		Percentage of children stunted (moderate and severe)
		Proportion of children under one year immunized against BCG (per cent)
		Proportion of children under one year immunized against measles (per cent)
		Proportion of children under one year immunized against yellow fever (per cent)
		Proportion of children 1 year vaccinated against measles
		Percentage of children with diarrhea treated with ORT (per cent)
		Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs (per cent)
	Reduce by three quarters, between 1990 and 2015, the maternal mortality rate	Maternal mortality rate
		Proportion of births attended by skilled health personnel
	Make access to reproductive health by 2015, universal	Contraceptive prevalence rate
		Birth rates among adolescents
		Ante-natal care (at least one visit) (per cent)
		Ante-natal care (at least four visits)
	By 2015, halting the spread of HIV / AIDS and begun to reverse the current trend	Prevalance of HIV among population 15- 24 years (per cent)
		Prevalance of HIV among population 15- 49 years (per cent)
		Condom use at last high-risk sex
		Proportion of population aged 15-24 years with comprehensive correct knowledge about HIV / AIDS
		Enrollment of orphans to non-orphans aged 10-14 years
	For all those who need access to treatment against HIV / AIDS	Proportion of population with advanced HIV infection with access to antiretroviral drugs
	By 2015, the incidence of malaria and other major diseases and begun to reverse the current trend	Malaria incidence and mortality due to this disease
		Proportion of children under 5 sleeping under insecticide-treated bednets
		Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs means
		Incidence, prevalence of tuberculosis and mortality due to this disease
		Proportion of tuberculosis cases detected and cured under direct treatment in the short term and under observation
	In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	Proportion of the population that can provide essential medicines at affordable prices and conditions can be maintained permanently

7. SOCIAL AND CULTURAL WELFARE DIMENSION		
SUB-DIMENSIONS	**TARGETS**	**INDICATORS**
	Ease of access to health services	Number of Hospital beds (thousand) per 10 000 inhabitants
		Number of Nurses (thousand) per 10 000 inhabitants
		Number of Physicians (thousand) per 10 000 inhabitants
		Access to health center less than 5 kms
	Health budget	Public expenditure on health as% of Government expenditures (per cent)
		Capital expenditure on health as% of Government expenditures (per cent)
Protection against vulnerabilities	Social security nets	Proportion of people in difficulty food supported (in%)
		Coverage of the system of compulsory health insurance or mutual health
	Disabled persons	Jobs
		Medical care
	Child protection	Registration of births
		Child labor - Economically active children (5-14yrs)
		Prisons do not have quarters for minors
		Female genital mutilation,% of mothers who reported having at least one daughter circumcised
		Early marriage (before age 18)
		Enrollment of children in difficult circumstances (including orphans)
Population	Control population growth	Population (in thousand)
		Population density
		Urbanization rate (per cent)
		Sex ratio of population (men per 100 women)
		Median age of population (years)
		Population growth rate (per cent)
		Population growth rate (Average exponential) (per cent)
		Crude birth rate (per 1000 population)
		Total Fertility Rate (per women)
		Net reproduction rate
		Annual number of live births (thousand)
		Crude death rate (per 1000 population)
		Life expectancy (years)
		Dependency ratio (young)
		Dependency ratio (old)
		Net Migration rate (per cent)
		Net number of Migrants (per cent)
	Management of migration	Emigration rate of those with tertiary education (% of total population with tertiary education)
		Financial transfers of migrants to their country of origin per capita
		Average cost of remittances (in%)
		Remittances used for productive projects

Appendix 2: Measurement of the Economic Emergence Level of Countries[7]

A2.1. The approach

Generally, we use the tools of descriptive statistics and multidimensional data analysis. The approach has three stages. The first sage notes a stylized fact: a group of economically homogenous countries in the 1960s and far different in 2000. The second complements the first through assessment of the trajectory of various group of countries. Finally, in the third stage we constructed the specific Economic Emergence Synthetic Indicator (EESI).

Stage 1: stylized fact

In order to emphasize the stylized fact, (that is, the homogeneity of the group in 1960 compared to the situation in 2000, some 40 years after), we used the GDP per capita[8]. The dispersion indicators such as the standard deviation, the coefficient of variation and the quintile relationship were evaluated for 1960 and 2000. Comparison of the results for these two dates determined the gap that existed between the two positions. At the end of this stage, we had shown that the homogenous group of countries in 1960 no longer existed.

Stage 2: the dynamic process in- country

Observation of the stylized fact was followed by analysis of country dynamics. In this respect, we made use of automatic classification systems. This involved grouping the countries in homogenous categories, according to a number of selected variables. The method used was the ascending order of classification.

Box 2: Outline of the Hierarchical Acsending Classification

Classification methods are techniques designed to group a set of statistical units (countries, households, municipalities, etc..) In homogeneous classes according to a set of variables. After consolidation, it only remains to describe the different groups formed. Classification methods are essentially descriptive.

There are two main methods of classification: non-hierarchical methods and hierarchical methods. Hierarchical methods are in turn divided in two groups: descending hierarchical methods (DHM) and ascending hierarchical methods (AHM). The latter seem to be the most used when the database contains few individuals (less than 10 000 statistical individuals).

AHM's approach is simple:

We start from the trivial partition in which each individual (ei) is a class as itself. If n is the number of individuals, then there will be n classes at the starting point.

7 The survey of the measurement of economic emergence was carried out in 2008 by Moubarack Lo and SidikiGuindo, Engineers, Research assistant, Institut de l'Emergence, Dakar, Senegal.

8 This is the available variable since the 1960s.

We calculate the distances between all individuals taken 2-2 and group the two closest individuals. Substituting these two individuals by their center of gravity that one note e_{n+1}.

Then we calculate the distances obtained in the new table to aggregate the two closest individuals, and so on. At the end of the algorithm, we will have a single class. The n-1 obtained centers of gravity represent the fictitious individuals rated from e_{n+1} to e_{2n-1}. These individuals are called aggregation nodes and the value of the chosen metric is the level of the node.

The optimal number of classes to be used is that which minimizes the inertia (that is to say the variability) within the classes or equivalently that which maximizes the inter-class inertia.

The objective of this classification was to identify the groups of homogenous countries for the period 1960 to 2005. Homogeneity could be determined through five variables: GDP per capita and GDP growth per capita (these measured the wealth of a country in terms of level and evolution; share of the country in world trade and growth in the country's exports (these measured the openness of the country to the rest of the world); and finally, FDI. In addition to measuring the openness of the country to the outside world, this variable also evaluated to some extent level of investor confidence in the respective country.

We moved from the assumption that a group of countries was considered homogenous in 1960. Subsequently, we applied the ascending order of classification applying the five variables, twenty years after 1960, in 1980, in 1995, fifteen years after, then again in 2005. It was also necessary to determine the maximum numbers and the group members that featured in the classification for the years (1980, 1995 and 2005), The optimum level was measured against inter-group variance. As a result, for a given year, the optimal partition was the one with the highest inter-group variance.

After the classification, the groups were described by the variables that characterized them the most and by the individual statistics representing the average characteristics of the group (these were the closest models). In some cases, we used atypical individual statistics (these were the most remote models).

Evaluation of the composition of each group demonstrated that some countries had progressed continually towards the group of developed countries, some were still stagnant (throughout the period of the survey in the group of least developed countries) and other slacked continuous evolution.

Stage 3: Construction of EESI

The preceding section evaluated the country dynamics for the period 1960 to 2005. It partly explained the transition phase of the various countries. Stage 3 deals with putting in place of the Economic Emergence Synthetic Indicator (EESI).

The construction of EESI is based on factor analysis methods of multidimensional data. It is the construction of a composite indicator using factor axes from data analysis.

A2.2. Methodology used to construct EESI

This section deals with the methodology used in constructing the Economic Emergence Synthetic Indicator. It also describes the verification of the quality of the constructed indicator.

A2.2.1. Variables in the construction of EESI

In line with the economic theory, economic emergence is shaped by several aspects: the economic dynamism of the country, its macroeconomic stability, and the economic transformation structure, among others. Each aspect can be measured by a set of economic variables.

In this document, we selected a priori 15 variables in the construction of EESI. It should be noted that the selected 15 variables which are acknowledged by economic development theoreticians have been grouped under three themes. Each theme is made up of a set of variables on the same aspect.

The three themes under review are economic dynamism, economic transformation structure, and the macroeconomic stability of the country. In order to emerge, a country should sustainably accelerate its economic growth (dynamism) constantly improve its transformation structure (transformation) and be relatively stable (macroeconomic stability).

The economic dynamism of a country is measured by its GDP per capita (which quantifies the wealth of a country), the GDP growth per capita (quantification of the real evolution of this wealth) and the growth variability of the GDP per capita (this variability measures the stability in the wealth evolution). A successful country is one that constantly evolves at a relatively constant pace.

We added the GINI indicator to these variables to determine equity in the country (a successful country is one in which growth is relatively conducive to the interests of the poor).

The transformation structure of a country was measured by the country's share of world export trade, its export of manufactured products compared to export of goods, and the export of services as a total of exports. These variables partly measured the economic openness of the country (no country can be self-sufficient). The share of FDI was added to these variables. In order to emerge, a country should increasingly endeavour to promote its business environment to attract foreign investments. Finally, the production structure of the country should also be taken into account. A successful country is one which does not depend on a single sector. It should have several assets with the production structure in line with world standards. These aspects were measured by the Hirschmann-Herfindahl concentration and diversification indices using the agriculture value added per farmer and the manufactured value added compared to the GDP.

Macroeconomic stability was measured by the budget balance (internal stability) and the trade balance (external stability). The level of inflation in the country was added to these values (a successful country is one which has a low rate of inflation).

The following Table 3 shows all the variables selected a priori for construction of EESI.

Table 3 Annex: List of variables used in construction of the EESI

ITEM	VARIABLES	Source
	ECONOMIC GROWTH VARIABLES	
GDP	GDP per capita (in USD) (current year)	CD_WB
GROWTH GDP	Average growth of GDP per capita during the last 10 years	CD_WB*
VARIABILITY	Growth variability during the last ten years	CD_WB
Gini	The GINI index	CD_WB
	TRANSFORMATION VARIABLES	
EXPORT	Share of the country's export in world exports	CD_WB
FDI	Share of direct investments in the country compared to FDI	CD_WB
VA_agric	Value added to agriculture per farmer	CD_WB
VA M	Manufactured value added compared to GDP	CD_WB
Manufact exports	Manufactured exports / export of goods(average of ten years)	CD_WB
Diversificat	Index on export diversification (average of ten years)	UNCTAD
Concentrat	Concentration index (average of ten years)	UNCTAD
Export services	Export services/ total exports (average of ten years)	CD_WB
	MACROECONOMIC STABILITYVARIABLES	
Inflation	Inflation (average of five years)	CD_WB
Budget balance	Budget balance (for current year);	CD_WB
Current account balance	Current account balance as a % of GDP (average of five years)	CD_WB

** In calculating the average, it was reduced by 2 points.*

***CD_WB:** WORLD BANK CD*

***UNCTAD:** UNCTAD DATABASE*

The Economic Emergence Synthetic Indicator of the country is the combination of the indicators constructed for each theme variable. The outline of the final formula of the EESI before the construction of the sub-indicators linked to any variable theme is presented below.

A2.2.2. The functional form of EESI

The idea behind assessment of the EESI process g is as follows: we are looking for a composite factor that can assess the multidimensional aspects of the economic emergence of a country. From this perspective, the task can be resolved using the factor methods. These tools can sum up the information contained, disseminated in a set of variables in a limited number of factors. Thus, construction of the EESI is based on the principles of factor analysis.

As underlined earlier, the variables are a priori grouped per theme and the EESI of a country is the combination of the sub-indicators from each theme. Thus, from this perspective, Multiple Factor Analysis (MFA) is one of the most appropriate methods to resolving the issue. This is the method dealt with in the table of data containing the variables grouped a priori per theme.

In this case, we constructed an indicator on economic growth, one on the transformational structure and another on macroeconomic stability. The combination of the three indicators produced the EESI.

For a country i, let us note Ik (i) the value of the sub-indicator of theme k (the calculation method for Ik will be specified subsequently), the formula of the EESI for the country is:

$$SEME(i) = \left[\frac{1}{\sum_{k=1}^{m} \lambda_k} \sum_{k=1}^{m} \lambda_k I_k^{\alpha}(i) \right]^{\frac{1}{\alpha}}$$

In this formula, m is the theme number (here m equals 3).

α which is the non-zero real number is selected through modeling. The modeling looks for the value of α such that the EESI is relatively robust on a slight variation of α. It should also be noted that α assesses the degree of substitutability of the various components of the EESI.

λκ is the weight of dimension κ of the emergence. This weight is determined by factor analysis, if necessary backed up by expert opinion. In line with the MFA, λκ can be estimated from the very initial values from the PCA of theme κ. The formula for the calculation of λκ poses the challenge of component dimensionality and it is for this reason that this formula will be only be specified in the empirical results.

The choice in the functional form of the EESI can be justified through the salient characteristics that it contributes to the EESI, namely:

- EESI is absolutely increasing compared to each of its component (as the country improves on one of its emergence dimensions, its final emergence level also increase). Therefore, the index has a full ranking capacity.
- EESI is convex compared to each of the components. This means that the EESI increases faster than any one of its parts.
- The variation of a component can more or less compensate for the variation of another component in the final assessment of the EESI. In fact, the sub-indices are constructed to achieve comparable dispersions and levels. As a result, the criticisms of Minvielle and Bry on the IPH are no longer relevant.
- EESI is not overwhelmed by the variation in any one of its components. The elasticity of the indicator compared to a component is equal to the share of this component in the total sum of the components. The components are yet compatible in terms of level and variation. Thus, variation in the EESI arising from the variation of a single component should comply with certain constraints such as a priori equity among components.
- It should be noted that when α is positive (and the higher it is), the elasticity of the indicator compared to one of its components is higher than this component which has a higher value compared to the others. This will be the desired trend if it is considered that emergence should be dominated by its strongest component including the variations. This means that when α is positive and high, there is a tendency to conclude that the country is emerging as soon as one of its emergence dimensions has a very high value. This minimum assessment is required to avoid declaring a country emergent when it is not.In contrast, when α is negative and more so its absolute value is high, the index

variations will be dominated by component variations with the lowest values. This is the maximum assessment required to avoid declaring a country emergent when it is not).

These two cases reduced our work considerably, on the one hand because the EESI components were compatible in terms of average and variance, and on the other, only if α was very high.

The calculation of the EESI (i) required knowledge of Iκ (i). The method used in the calculation to evaluate Iκ will be discussed in the subsequent section.

A2.2.3. Formula for the calculation of EESI sub-index

In order to construct the sub-indices (dynamism, transformation and economic stability of the EESI), we used Principal Component Analysis (PCA). This method fitted well with the structure of the data (a set of individual data depicted by quantitative variables. It allowed quantification of the various themes. In order to do this, the following method was used:

For a given theme (for example, economic growth), we carried out a PCA on the set of variables of the theme (the atypical individual statistics- if any- were supplementary). Subsequently, interpretation of the axes provided the guide for constructing the sub-index. According to the PCA results, the sub-index was based on one or several axes. In the latter case, the construction was also done through combination of several indices. The number of indices in the construction of the index of the theme corresponded to the empirical dimension of the theme. Thus, the empirical dimension of a theme corresponded to the number of groups of variables correlated to a given axis of the PCA. In respect of a set of correlated variables to a given axe j, the emergent aspect on this focus was:

$$\mathbf{I_k(i) = \sum_{i=1}^{T} C_t^j V_t^i}$$

In this formula, $\mathbf{V_t^i}$ is the value of the variable t for country I. $\mathbf{C_t^j}$ is the coordinate of the variable t on the j axis.

In the aggregation process as a whole, account should be taken of the fact that the results of the aggregation could be absorbed by one or a few variables. For example, the variables **Vt** should be restored to a comparable position in terms of level and variability. In order to do so, various norms could be selected.

The transformation by ranking

This is the replacement of each observation according to its rank in the classification in the ascending or descending order of the variable. This transformation is robust in the assessment scale but it has a disadvantage as there is need to recalculate everything on the insertion of a new data into the equation.

The transformation of reduced focus

The general formula for these transformations is:

$$V_t^* \longrightarrow \frac{V_t - N_t}{D_t}$$

In which **N t**and **D t**are the level and the dispersion reference respectively. With **Nt=**MinV and **D t=**MaxV-MinV (the scope of the variable), we arrive at the commonly used transformation:

$$V_t^* \longrightarrow \frac{V_t - MinV}{MaxV - MinV}$$

This last formula has the disadvantage of needing recalculation after the insertion of a new individual statistic. In order to forestall this situation, MinV and MaxV could be considered as the minimum and maximum acceptable in theory and not the calculations from the available individual sample. This is the case in calculation of the Human Development Index (HDI).

Finally, there is a third transformation

This transformation ensures that each variable relates to a reference level (for example, the average, the median or the theoretically designed level).

$$V_t^* \longrightarrow \frac{V_t}{D_t}$$

The advantage of this transformation is that it does not change the relative variation (in percentage) of the component and adapted to suit the log transformation.

In this document, we are going to adopt the transformation currently in use:

$$V_t^* \longrightarrow \frac{V_t - MinV}{MaxV - MinV}$$

The minima and maxima will be selected theoretically and in relation to the fact that we are calculating the indicator for 1995 and 2005.

A2.3. An empirical analysis and strength of the EESI

The first characteristic in the robustness of the EESI derives from the selection of α this real α is selected through modelling in such a way that the indicator remains robust in the face of a slight variation).

Secondly, the indicators were constructed according to rank using the EESI variables. In the construction of the indicators for each variable, the value taken for each country was replaced by itsr ranking (in the ascending or descending, order of the respective variable. The ranking of the indicators will be such that: the higher the average ranking of the country, the greater the country is emer-

gent. The assessment of the correlation coefficient in the ranking of the indicators will further ensure the robustness of the EESI.

Finally, the inclusion of atypical countries will ensure that the EESI does not turn out to be an average, and influenced by the situation in one or a few countries.

Regarding the empirical analysis, we first of all observed the homogenous group of countries according to the EESI. In fact, considering that the data were obtained from various sources and that the countries did not use the same assumptions in the calculation of the variables and that certain missing data were estimated following research on Internet websites, the grouping of countries appeared more robust then than as depicted in their ranking according to the EESI.

We have also assessed a set of descriptive statistics (such as the average, the standard difference, the variation coefficient) of the groups before moving on to the EESI of certain regional organizations such as ECOWAS and UEMOA.

A2.4. Results of theEESI

A2.4.1. Data used

The data in this survey came mainly from the CD-ROMs and the databases of the World Bank and UNCTAD respectively. The missing data were estimated from research activities on the Internet websites. The sample comprised 115 countries in Africa, America, Asia and Europe. Concerning variables taken on average of 10 years, we applied the formula of the cut-off average by excluding two observations (the most prominent and the least prominent). In so doing, we reduced to some extent the fluctuations that could have taken place with certain variables.

A2.4.2. Homogeneity among countries in 1960 compared to the present situation

In 1960, the average GDP per capita in the countries under review was twice weaker than the world average GDP per capita ($1,690 compared to $3, 131). During this same year, the gap in GDP per capita in our country sample was $1218 representing a variation coefficient of 0.7. The inter-quintile relationship was only 3.2 signifying that the poorest of 25 per cent of the richest countries in the sample have 3 times higher income than the richest country among the 25 per cent of the poorest countries in the sample.

In 2000 (40 years later), the GDP of the countries rose to $4330 compared to $6350 for the world average. In 40 years, the GDP ratio rose from 2 to 1.5. This is attributable to the progress made by some countries.

However, it should be noted that there was an increasing gap among the countries in the sample. In fact, the variation coefficient which stood at 0.7 in 1960 rose to 1.0 within 40 years representing an increase of more than 40 per cent. The inter-quintile relationship rose by 80 per cent (3.2 in 1960 compared to 5.8 in 2000).

The results have proven that the sample among the countries under review was more homogenous in 1960 than in 2000. This situation was all the more credible as some countries that were considered poor in 1960 were no longer poor in 2000.

It should be borne in mind that the countries under review made considerable progress in the improvement of wealth per capita. However, there was increasing inequality among the countries in the sample. Therefore, the improvement of the situation in a country might be attributable to an improvement within a group of countries.

We shall now observe the dynamism factor within the sample of countries over the period 1960-2005. We shall identify the countries that have continuously evolved towards a better world as well as those that have remained stagnant and those that did not experience a single continuous trend.

A2.4.3. The dynamic process among the countries from 1960 to 2005

For 1960, we considered the countries as forming a single group but we shall endeavour to identify the homogenous groups that emerged by 1980 (that is, 20 years later), and by 1995 (15 years after) and finally, in 2005. It should be recalled that five variables were taken into account, namely, GDP per capita, GDP growth, export growth as a percentage of GDP, export growth and FDI (as a percentage of GDP). Generally, these were average variables to prevent absurd values and to reduce the number of countries with missing information.

(a) The grouping of countries in 1980

For 1980, the sample of countries under review was grouped in an optimal fashion into two categories. As underlined theoretically, the optimality was assessed from the intra-group inertia minimization criteria. As a result, it should be noted that the group of homogenous countries in 1960 was divided into two groups 20 years later. The first group comprised 102 countries whereas the second group only comprised 13 countries. The figure that follows provides a guide for description of the groups.

Countries such as Morocco, Peru, Guatemala, Cote d'Ivoire and Kenya were ideal representatives of Group one. These were countries with the average characteristics embodied in this group. For the second group, the countries with the nearest models were Malaysia, Singapore, Saudi Arabia and Kuwait. These observations have shown that the countries in group two were more advanced than the countries in the first group. In order to confirm or invalidate this premise, we observed the average value of the variables in the groups.

During the observation of the variables, it was noted that the characteristics of the variables are: the share of direct foreign investment, the share of exports and the level of GDP per capita. For all these variables, group two occupies the best position.

In this group:

- The share of FDI is 10 times higher than in Group one. The countries in Group two attract 10 times more investment than in Group one;
- The share of exports is five times greater than in Group one;
- Finally, the average GDP in Group two is twice higher than in Group one.

The countries in Group two are twice richer than the countries in Group one.

Figure 3 Annex: The share of points in the best group in 1980

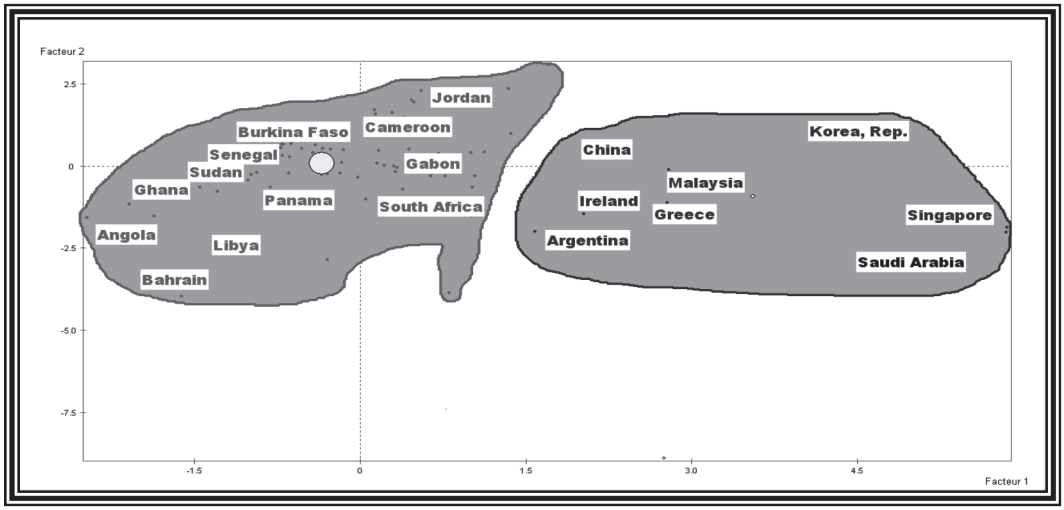


Table 4 Annex: Models according to the best classification

Rank	Nearest model	Distance at the beginning	Distant model	Inertia
	Group 1			
1	Guatemala	0.01	Brunei Darussalam	48.1
2	Morocco	0.11	Bahrain	22.3
3	Peru	0.12	Botswana	14.0
	Group 2			
1	Malaysia	1.4	Brazil	10.6
2	Indonesia	2.6	Mexico	8.1
3	Republic of Korea	3.8	Ireland	7.5

It should be remembered that in the 1980 classification, the sample of countries under review was divided into two homogenous groups. Group One comprised the less developed countries in the sample and Group two comprised the poorest countries in the sample. We shall now proceed to establish a similar grouping like the previous grouping but in respect of 1995.

(b) The grouping of countries in 1995

In 1995, two groups emerged: one with two categories and one with five categories. The division into two groups was almost identical to the one selected in 1980. Indeed, this division contained the same variable characteristics with a slight difference in the number of countries in the groups. The first group comprised 98 countries (compared to 102 as was the case in 1980), representing a difference of 4 countries. These 4 countries joined the second group and increased the number to 17 (instead of 13).

Regarding the division into five groups, it should be noted that the first group comprising six countries was particularly characterized by their export growth. On average, the export growth in this group was six times greater than the export growth of the general average. These countries included Albania, Equatorial Guinea and Mongolia. The situation in Equatorial Guinea was attributable to the export of petroleum products.

The second group comprised 81 countries (the largest group) and was characterized particularly by low exports, GDP and FDI. The values of the variables in this group were two times smaller than those of the general average. This group included countries such as Tunisia, Morocco, Peru and Namibia.

The third group comprised eight countries experiencing economic recession. Their GDP growth was largely negative as was their export growth. These countries included Georgia, Ukraine and Djibouti.

The fourth group comprised eight countries, including Ireland, Kuwait, Saudi Arabia and Greece. These countries were characterized in particular by their wealth. Their GDP per capita was five times greater than the general average.

Finally, the fifth group comprised 10 countries characterized by their share of exports and FDI. The average of the variables for this group was five times higher than the general average.

It should be noted that in 1995, our sample of countries was divided into five homogenous groups:

Group 1: strong export growth
Group 2: low exports, FDI and GDP per capita
Group 3: negative GDP growth per capita as well as exports
Group 4: high GDP per capita
Group 5: high export and FDI levels

It was difficult to form an opinion immediately on the best-performing grouping (as was the case in the division into two groups). For example, it was not possible to conclusively decide on the classification of Group 1 (strong export growth) and Group 4 (high GDP). Consequently, the ranking of the groupings in this division are examined in the next section.

(c) The grouping of countries in 2005

In 2005, the optimal classification was seven groupings with some groups comprising only a few countries. The seventh group, for example, only comprised five countries namely, Singapore, South Korea, Ireland, Mexico and China. In addition to their high share of exports and FDI, these countries are characterized by a high GDP which is five times more than the general average.

It should be noted that in 2005, our sample of countries was divided into seven homogenous groups. The characteristics of the groups can be summarized as follows:

Group 1: strong export growth and GDP per capita
Group 2: strong GDP growth per capita
Group 3: average value for almost all the variables
Group 4: high GDP per capita and exports
Group 5: high exports and FDI
Group 6: high GDP per capita
Group 7: low GDP growth per capita and low export growth

As earlier mentioned, it is not possible to classify the groups in absolute terms.

(d) Summary of dynamic growth in the countries

In the preceding section, we assessed (through an automated classification method) the dynamism in the countries from 1960-2005. The group of homogenous countries in 1960 was divided into 2,5, and then 7 groups over time. Each group in the division had its own specific characteristics. In order to assess the trajectory of the countries for the period 1960-2005, we put a scoring method in place. This score was an indicator in the evolution of the country towards the developed countries of the world. The higher the score, the higher the country was rated among those with a better trajectory.

The following box outlines the methodology used to calculate the scores.

Box 3: The Method Used in Construction of the Scoring System

The aim is to quantify the score of a country for the period 1960-2005. This approach should assess the development of a country towards the most advanced countries in the world for more than 40 years. Following the classifications in respect of 1980, 1995 and 2005, the score recorded by a country is assessed in 2 stages.
Stage 1: The aim is to do the ranking of a given classification. Let us take for example the classification into five groups (that of 1995). In order to rank the groups, we are going to calculate a score for each group. In this method, the higher the score, the higher the position of the group.

The points that follow describe the method used in calculation of the score of a country (still in respect of the five groups in 1995).

- All our five variables are changed into ranks. For example, the GDP per capita of a country is replaced by its ranking in the classification of countries in the order according to this variable.

At the end of this stage, there was a ranking table for the five variables.

- The score of a country is the calculated average on the ranking of the three varaiables. The following table illustrates the calculation in the score of country i.

Country	GDP Ranking	Ranking Growth_ GDP	Ranking Exports	Ranking Growth_Exports	Ranking FDI	Country score
1	56	78	101	90	34	(56+78+101+90+34)/5 = 71.80.

At the end of this stage, there was a table containing the scores for all the countries.

- In order to rank the groups, we calculated the score for each group. The score of a group was the average score of the countries in the group; as a result, the higher the score of a group, the higher its position.

At the end of this stage, there was a ranking of countries in the group in question.

Stage 2: Calculation of a country score

In order to calculate the score which assesses the development of a country during the period under review, we used the following two points:

- For a given group k, as in the preceding stage, we ranked the groups and the best group will have k-1 as score while the last group will have 0 as score. For the group under review, the score of a country is equal to the score of the group.

At the end of this stage, there was a table of countries with their scores in respect of 1980, 1995 and 2005.

- The final score of a country was equal to the sum total of these scores for the three classification years. The countries with the highest scores were the best performing.

Table 3 Annex. Selected country scores

Following the method described in the box above, we obtain the results shown in the table below.

Country	Score	Country	Score	Country	Score	Country	Score
Djibouti	0	Algeria	2	Qatar	2	Albania	4
Liberia	0	Armenia	2	Iran	2	Cambodia	4
		Azerbaijan	2	Senegal	2	Equatorial Guinea	4
Benin	1	Bangladesh	2	Soudan	2	Vietnam	4
Burundi	1	Bolivia	2	Sri Lanka	2		
Cameroon	1	Burkina Faso	2	Tanzania	2	South Africa	5
Côte d'Ivoire	1	Cape Verde	2	Tunisia	2	Hungary	5
El Salvador	1	Chile	2	Uruguay	2	Poland	5
Gabon	1	Colombia	2	Uzbekistan	2	Czech Republic	5
Gambia	1	Congo	2	Yemen	2	Turkey	5
Guatemala	1	Costa Rica	2		2		
Guinea	1	Croatia	2			Argentina	6
Guinea-Bissau	1	Egypt	2	Belorussia	3	Bahrain	6
Haiti	1	Ecuador	2	Ethiopia	3	Brunei Darussalam	6
Jamaica	1	Ghana	2	Georgia	3	Portugal	6
Libya	1	Honduras	2	India	3	Greece	7
Madagascar	1	Jordan	2	Kazakhstan	3	UnitedArab Emirates	7
Malawi	1	Kenya	2	Mongolia	3	Kuwait	7
Mauritania	1	Laos	2	Mozambique	3	Saudi Arabia	8
Nepal	1	Lithuania	2	Rwanda	3	Russian Federation	8
Niger	1	Mali	2	Ukraine	3	Thailand	8
Paraguay	1	Mauritius	2	Zambia	3		
Syria	1	Morocco	2			Brazil	9
Central African Republic	1	Namibia	2			Indonesia	9
Dominican Republic	1	Nicaragua	2	Angola	4	Ireland	9
Togo	1	Nigeria	2	Bhutan	4	Malaysia	9
Venezuela	1	Oman	2	Botswana	4		
Zimbabwe	1	Uganda	2	Bulgaria	4	China	10
	1	Pakistan	2	Estonia	4	Mexico	10
		Panama	2	Rumania	4	Republic of Korea	10
		Peru	2	Sierra Leone	4	Singapore	10
		Philippines	2	Trinidad and Tobago	4		

The score for a country varied between 0 and 10. It was observed that 69 countries (out of 115) had a score between 0 and 3. Among these countries, two scored zero. These were Liberia and Djibouti. It was also observed that most African countries belonged to this group. Twenty-seven countries scored between 4 and 8. These countries included Equatorial Guinea and this was attributable to the petroleum products discovered during the previous few years. However, it should be recalled that this country remained among the least developed countries in the world. There were eight countries with a high score and Singapore was on top, followed by Mexico, South Korea and China. According to the scoring, these were the countries making the most progress towards a better world.

In observing the trajectory of countries, it was noted that countries such as Gabon, Mauritania, Cote d'Ivoire and Niger recorded mixed results. In fact, the countries with a zero score in 1980 still scored the same in 2005 after scoring 1 in 1995.

Countries such as Russia, China, Malaysia, South Korea and Singapore swiftly improved on their score between 1980 and 1995. Generally, these countries jumped three points between 1980 and 1995 (for example Malaysia rose from a score of 1 in 1980 to 4 in 2005. In contrast, the score for countries such as Argentina and Yemen dropped from 2 in 1995 to 0 in 2005. Argentina dropped from 4 in 1995 to 1 in 2005.

It should be noted that the score for countries varied between 0 and 10. The majority of countries (60 per cent) under review had a score lower than 4. Only 4 countries had a score of 10. Finally, it should be pointed out that the evolution in some countries was mixed. As a result, the score enabled us to assess the trajectory of each country and indeed, the identification to some extent of countries that were likely to be considered emergent. However, the scoring remained inadequate for assessing the economic emergence of countries.

A2.4.4. Shortcomings in the scoring towards the putting in place of the EESI

The scoring method constructed in the preceding section has three deficiencies preventing it from efficiently addressing the economic emergence of a country. These deficiencies are partially attributable to the lack of data in respect of the previous years.

Shortcomings in the number of variables

As the economic emergence process is multiform, the number of variables available (five in all for scoring purposes) is a priori inadequate to assess the process. Therefore, it is crucial to take into account a large number of variables in order to address all the dimensions of the process.

Failure to take some dimensions into account

Even if the number of variables was relatively small, the content of the variable was undoubtedly inadequate to assess all the dimensions of the process. For example, the assessment of emergence should take into account the level and evolution of the wealth of the country with the addition of a variable to assess the distribution of this wealth. It was therefore interesting to add to the variables an inequality index such as the GINI index or one of the Theil indices. In so doing, countries were reclassified to some extent, to show those with major inequalities in income distribution. It was also be possible to assess the production structure of the country (a sound production structure is an asset for emergence).

Lack of fusion of the various dimensions

The results in the classification of countries in 1995 denoted five groups. One group, the fifth, comprised countries with high exports and FDI. However, the development of the variables of these countries was not demonstrated and group 1, which comprised countries particularly characterized by the pace of export development, was also observed. As a result, it was seen that each of these two groups possessed an emergence dimension which had to be merged with the other in order to assess, in a relatively exhaustive manner, the economic emergence of the country.

Establishment of the Economic Emergence Synthetic Indicator (EESI) definitively helped in the analysis. This is the subject of the following section.

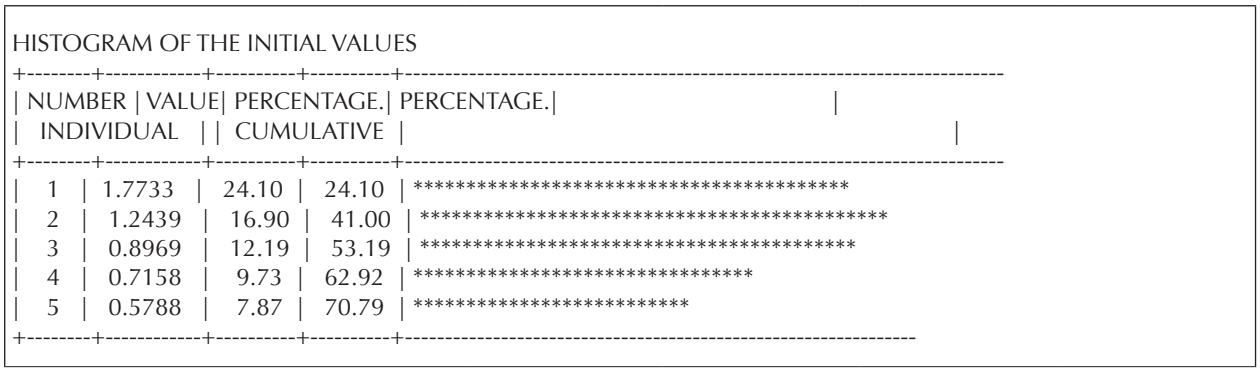
A2.5. Setting up an economic emergence synthetic indicator

A2.5.1. Introduction

It should be recalled that emergence is assessed in three dimensions: the economic dynamism of the country, the transformational dimension and the macroeconomic stability. The economic emergence indicator has been calculated for 1995 and 2005. Only the calculation methods of the 2005 EESI will be outlined in detail. This section provides information on the various results.

The multiple factorial analysis (MFA) of the three themes produced the following histogram and table of correlations (these results refer to 2005).

Figure 1: Histogram of the MFA values



Assessment of the linkage of the 3 theme variables				
	Group1 : Economic growth	**Group2 : Structuraltransformation**	**Group3 : Micro economic stability**	**Total**
Group1: Variables on economic growth	1,00			
Group2: structural transformation	**0.19**	1,00		
Group3 : macroeconomic stability	**0.13**	**0.22**	1,00	
Total	0.66	0,69	0,66	1,00
Coefficient Lg of dimensionality				
Group1: Variables on economic growth	**1,82**			
Group2: structural transformation	0.33	1,63		
Group3 :macroeconomic stability	0,22	0,37	1,65	
Total	1,31	1,33	1,29	2,22

Observation of the histogram of values indicates that the first focus of the analysis explains the process to some extent (more than 24 per cent). Furthermore, this focus is the only one with a value by far higher than 1as threshold, according to the Caiser criteria in the selection of the focus numbers to be interpreted. Focus 1 therefore reflects an important process in the assessment of the economic emergence of a country. However, the second focus also contributes significantly in the explanation of the process (17 per cent). As a result, the first focus explains the process by more than 40 per cent. We shall now consider this plan in construction of the EESI.

Moreover, observation of the table on the linkage and the dimensionality of the various themes, notes that the three groups are not adequately correlated, the coefficient RV of the linkage between the groups taken two by two (which assesses the linkage between the two groups) is not more than (in absolute value) 0.2. The greatest inter-group linkage has been observed between macroeconomic stability and the transformation structure (linkage coefficient 0.2).

The weakness in the inter-group linkages has shown that a country can be well placed regarding a theme without necessarily being so in the other themes. Observation of the intra-group inertia identifies such a country (in advance). Thus, mention should be made of countries such as Yemen, Botswana and Venezuela, among others, which were poorly classified under a theme but were well classified under another theme. These were countries with high intra-group inertia. Conversely, for a country with a weak intra-group inertia, it was expected that it would occupy the same position in the three dimensions of the process or be well placed in the three dimensions or badly placed in the three dimensions. We expected to see countries such as Indonesia, Malawi and Zambia in this group.

Moreover, observation of the dimensionality coefficients shows that none of the groups is strictly one-dimensional. The logarithm coefficients of the group dimensionality are relatively higher than 1 (1.8 in respect of the first group and 1.6 for the other two groups). Consequently, it has been observed in particular that it is Group 1 (economic dynamism) which is not all unidimensional with a dimensionality coefficient around 2. The results have demonstrated that the process of economic growth is multidimensional. The construction of a sub-index linked to this dimension could be done through the putting in place of several indicators. The results of the principal correspondence analysis (PCA) confirm or invalidate this assumption.

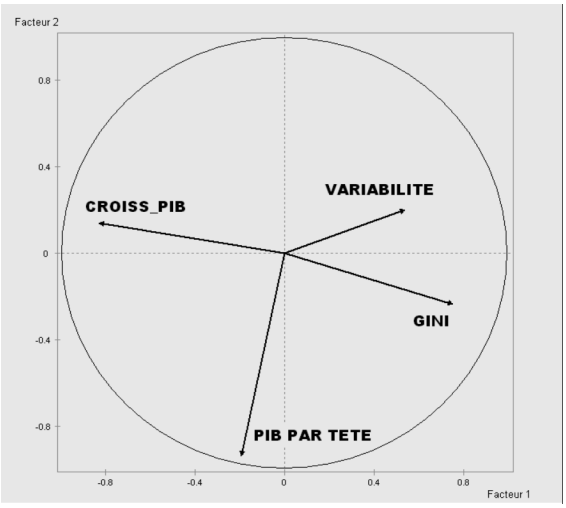
The calculation of the indices on the three dimensions produced the PCA on each theme. It should be recalled that the index on economic growth is multidimensional while the other indices are unidimensional.

We are now going to present an example of construction of the index on a dimension. Let us consider, for example, the dimension on economic growth. PCA carried out on this theme produced the following histogram and point cloud of variables.

The histogram of PCA-specific values on the groups

HISTOGRAMME DES 4 PREMIÈRES VALEURS PROPRES

NUMÉRO	VALEUR PROPRE	POURCENTAGE	POURCENTAGE CUMULÉ	
1	1.5836	39.59	39.59	**********
2	0.9954	24.89	64.48	**********
3	0.8920	22.30	86.78	**********
4	0.5289	13.22	100.00	**********



The histogram shows that the group was well represented on the first plan. Indeed, the first plan contributed about 65 per cent of the information contained in the data. As a result, we are going to use this plan in the construction of the sub-index on economic growth. It has been observed in the interpretation of the themes that the variables were relatively well represented on the first theme except GDP per capita. Theme 1 assessed wealth development and inequality in the country, whereas the second dimension assessed the level of wealth. How are the indices that fit into the EESI constructed?

A2.5.2. Construction of the sub-indices that fit into EESI

In order to construct the sub-indices that fit into the EESI formula, it should be remembered that we used the following formula:

$$\mathbf{I_k(i) = \sum_{i=1}^{T} C_t^j V_t^i}$$

Where $\mathbf{V_t^j}$ is the value of variable t for country i, C_t^j is the coordinate of the variable t on the j axis.

However, as pointed out earlier, in the construction of the index on economic growth, we first of all constructed two sub-indices.

Consequently, after carrying out PCA on each set of variables, it was noted that the indices were calculated as follows:

Index on economic growth

I_{11} = 0.75 Growth_GDP – 0.76Gini – 0.17Variability

1_{12} = 0.86GDP

The index on economic growth is finally:

$$I_1 = \left[0.55 I_{11}^{1/2} + 0.45 I_{12}^{1/2}\right]^2$$

The weighting coefficients are the contributions of the themes compared to the first plan. The selection of this method is justified by the theoretical aspect in the implementation of the EESI. Therefore, the index on economic growth is a weighted average of the two sub-indices.

For the other sub-indices (the indices on structural transformation and macroeconomic stability) we adopted the same approach. However, it should be noted that these indices are unidimensional. The sub-indices in question are written as follows:

Transformation index

1_2 = 0.69Exports + 0.57FDI + 0.58VA_agri + 0.82Vam + 0.72Export manufact

+ 0.81Diversification + 0.72Concentration + 0.14Export_service

The index on macroeconomic stability

1_3 =0.78 Budgetdeficit+0.72 Currentbudget-0.53Reserves

After the calculation of 11, 12 and 13, the EESI can now be calculated. It is a combination of the sub-indices that we have just calculated. The formula used is the one specified in the methodology.

$$ISEME(i) = \left[\frac{1}{\sum_{k=1}^{m} \lambda_k} \sum_{k=1}^{m} \lambda_k I_k^{\alpha}(i)\right]^{\frac{1}{\alpha}}$$

After the modelling, we chose α=1/3. The EESI is robust for the value. The assessment of the weighting coefficients is based on the theories of factor analysis. We considered the contribution of each group in the formation of the first theme of the Multiple Factor Analysis. However, the groups did not necessarily have the same structure. It was necessary to deflate this contribution by the first or the two initial values of the partial PCA. As a result, we have:

$$\lambda_1 = \frac{T^1_{G1}}{P^1_{G1} + P^2_{G1}}; \qquad \lambda_2 = \frac{T^1_{G2}}{P^1_{G2}}; \qquad \lambda_3 = \frac{T^1_{G3}}{P^1_{G3}}$$

In which $\mathbf{T}_{iG}^{j}$ is the contribution of group i in the formation of theme i of the MFA and $\mathbf{P}_{iG}^{j}$ is the individual value of theme j of the PCA carried out on group i.

The application of these formulae supplemented by expert opinion provides the estimation $\ddot{e}_1$ (the share of economic growth) at 0.55, $\ddot{e}_2$ (share of the transformation structure) at 0.3 and $\ddot{e}_3$ (share of macroeconomic stability) at 0.15.

After the modelling, we selected α=1/3. It is the calculation of the EESI for a different value of α and to choose the robust value of the indicator.

As a result, the EESI is as follows:

$$\mathrm{ISME(i)} = \left[0.55 I_1^{1/3}{}_{(i)} + 0.30 I_2^{1/3}(i) + 0.15 I_3^{1/3}{}_{(i)}\right]^3$$

EESI calculated using this formula is shown in table 4 Annex below.

Country	EESI 1995	Country	EESI 2005
Singapore	1.02	Singapore	1.07
Czech Republic	0.90	Republic of Korea	1.05
Republic of Korea	0.90	Ireland	1.00
Malaysia	0.87	China	0.93
Ireland	0.84	Lithuania	0.93
Hungary	0.83	Malaysia	0.93
Poland	0.83	Croatia	0.92
Portugal	0.83	Czech Republic	0.92
Thailand	0.81	Portugal	0.88
Croatia	0.78	Poland	0.88
Bahrain	0.75	Hungary	0.88
Estonia	0.74	Greece	0.87
China	0.73	Estonia	0.86
Uruguay	0.72	Thailand	0.82
Brunei Darussalam	0.72	Trinidad and Tobago	0.78
Rumania	0.71	Belorussia	0.78
Argentina	0.71	Bahrain	0.77
Panama	0.70	Bulgaria	0.77
Turkey	0.69	Albania	0.77
Qatar	0.69	Tunisia	0.77
Indonesia	0.69	Mauritius	0.77
Bulgaria	0.69	Rumania	0.77
Tunisia	0.69	Mexico	0.76
Mexico	0.68	Armenia	0.75
Egypt	0.68	Jordan	0.75

Country	EESI 1995	Country	EESI 2005
Oman	0.68	United Arab Emirates	0.73
Mauritius	0.67	Saudi Arabia	0.73
Trinidad and Tobago	0.65	Morocco	0.72
Jordan	0.65	Ukraine	0.72
Morocco	0.65	Kuwait	0.70
Jamaica	0.64	Indonesia	0.69
Greece	0.63	Libya	0.68
Russian Federation	0.63	Egypt	0.67
Lithuania	0.63	Turkey	0.67
Belorussia	0.63	Syria	0.66
Saudi Arabia	0.62	Botswana	0.66
Cambodia	0.61	Oman	0.66
Venezuela	0.60	South Africa	0.66
India	0.60	Russian Federation	0.65
Cape Verde	0.60	Panama	0.65
Costa Rica	0.60	Vietnam	0.65
Libya	0.59	India	0.65
Brazil	0.59	Brunei Darussalam	0.64
Chile	0.58	Chile	0.64
Kuwait	0.58	Pakistan	0.63
Bangladesh	0.57	Argentina	0.63
Ukraine	0.56	El Salvador	0.63
Colombia	0.56	Uruguay	0.63
Dominican Republic	0.55	Georgia	0.62
El Salvador	0.55	Qatar	0.62
South Africa	0.54	Costa Rica	0.62
Philippines	0.54	Philippines	0.62
Haiti	0.53	Cape Verde	0.62
Sri Lanka	0.53	Peru	0,61
Bhutan	0.52	Kazakhstan	0.60
Vietnam	0.52	Cambodia	0.60
Algeria	0.52	Algeria	0.60
Kazakhstan	0.52	Equatorial Guinea	0.60
Syria	0.51	Brazil	0.59
Djibouti	0.50	Bangladesh	0.59
Pakistan	0.50	Dominican Republic	0.58
Peru	0.50	Bhutan	0.58
Uzbekistan	0.48	Sri Lanka	0.57
Botswana	0.47	Azerbaijan	0.57
Paraguay	0.47	Jamaica	0.55
United Arab Emirates	0.47	Gabon	0.53
Gambia	0.46	Namibia	0.52
Ecuador	0.45	Venezuela	0.51
Gabon	0.45	Laos	0.51
Mongolia	0.44	Nepal	0.50
Guatemala	0.44	Colombia	0.50
Bolivia	0.44	Republic of Congo	0.49
Laos	0.44	Iran	0.49

Country	EESI 1995	Country	EESI 2005
Iran	0.42	Guatemala	0.49
Côte d'Ivoire	0.42	Senegal	0.48
Nepal	0.41	Uzbekistan	0.48
Senegal	0.40	Mongolia	0.48
Cameroon	0.40	Nicaragua	0.47
Kenya	0.39	Côte d'Ivoire	0.46
Georgia	0.38	Cameroun	0.46
Zimbabwe	0.38	Tanzania	0.46
Honduras	0.37	Kenya	0.44
Albania	0.36	Bolivia	0.44
Tanzania	0.34	Ecuador	0.43
Ghana	0.34	Honduras	0.42
Rwanda	0.34	Nigeria	0.41
Nigeria	0.34	Uganda	0.40
Armenia	0.33	Angola	0.39
Mauritania	0.31	Paraguay	0.39
Togo	0.31	Central African Republic	0.39
Madagascar	0.30	Yemen	0.39
Sudan	0.30	Mauritania	0.39
Guinea	0.30	Sudan	0.38
Niger	0.30	Zimbabwe	0.38
Chad	0.29	Benin	0.38
Burkina Faso	0.29	Ethiopia	0.38
Benin	0.28	Mali	0.38
Mozambique	0.26	Togo	0.38
Yemen	0.26	Djibouti	0.37
Central African Republic	0.26	Ghana	0.37
Ethiopia	0.25	Haiti	0.35
Burundi	0.24	Rwanda	0.35
Mali	0.22	Burkina Faso	0.34
Uganda	0.20	Gambia	0.34
Namibia	0.20	Guinea	0.34
Zambia	0.19	Mozambique	0.31
Angola	0.19	Zambia	0.30
Azerbaijan	0.18	Chad	0.30
Malawi	0.16	Madagascar	0.29
Equatorial Guinea	0.14	Niger	0.29
Nicaragua	0.12	Malawi	0.26
Congo.	0.10	Guinea-Bissau	0.26
Guinea-Bissau	0.08	Liberia	0.23
Liberia	0.03	Sierra Leone	0.22
Sierra Leone	0.00	Burundi	0.18

Table 5 Annex contains a few descriptive statistics of EESI in 1995 and 2005. **On average, the value of EESI of the countries is improved**. In fact, the average value of the EESI which stood at 0.5 in 1995 rose to 0.58 in 2005 representing an increase of more than 15 per cent. Furthermore, it should be noted that the gap in the indicator was the same in 1995 and in 2005. Finally, the minimum and

maximum values improved and rose from 0.00 to 0.18 and from 1.02 to 1.07 respectively. Thus, on the whole, the situation of the countries improved.

The form characteristics demonstrated that EESI distribution was smoother than the distribution of the normal rule. However, the 1995 EESI was spread out to the left while the 2005 EESI was spread out to the right. The two positions should be taken into account in future EESI surveys.

Table 5: Minimum and maximum EESI statistics, 1995 and 2005

EESI STATISTICS	1995	EESI2005
Minimum	0.00	0.18
Maximum	1.02	1.07
Average	0.50	0.58
Gap	0.21	0.20
Kurstosis	-0.46	-0.50
Asymetry	-0.10	0.26
CV	0.42	0.34
Correlation	**0.84**	

A2.5.3. Commentary and analysis of the sensitivity of the EESI

In this section, we comment on the various results that have been obtained.

Considering that:

- The data were obtained from various sources
- The countries did not use the same assumptions in the calculation of the variables
- Some missing data were obtained from publications.

The grouping of countries was more robust than the ranking according to EESI value.

It should be recalled that EESI was calculated according to this formula:

$$ISEME(i) = \left[\frac{1}{\sum_{k=1}^{m} \lambda_k} \sum_{k=1}^{m} \lambda_k I_k^{\alpha}(i) \right]^{\frac{1}{\alpha}}$$

In which m=3. The weighting coefficients $\ddot{e}_k$ were estimated from the deflated contributions of the themes of the partial PCA.

The weightings in the construction of EESI were 0.55 for the economic growth index, 0.3 for the transformation index and 0.15 for macroeconomic stability.

Table 6: Results of EESI conducted in 1995 and 2005

Country	Rank 1995	EESI 1995	Country	Rank 2005	EESI 2005
Singapore	1	1.02	Singapore	1	1.07
Czech Republic	2	0.90	Republic of Korea.	2	1.05
Republic of Korea	3	0.90	Ireland	3	1.00
Malaysia	4	0.87	China	4	0.93
Ireland	5	0.84	Lithuania	5	0.93
Hungary	6	0.83	Malaysia	6	0.93
Poland	7	0.83	Croatia	7	0.92
Portugal	8	0.83	Czech Republic	8	0.92
Thailand	9	0.81	Portugal	9	0.88
Croatia	10	0.78	Poland	10	0.88
Bahrain	11	0.75	Hungary	11	0.88
Estonia	12	0.74	Greece	12	0.87
China	13	0.73	Estonia	13	0.86
Uruguay	14	0.72	Thailand	14	0.82
Brunei Darussalam	15	0.72	Trinidad et Tobago	15	0.78
Rumania	16	0.71	Belorussia	16	0.78
Argentina	17	0.71	Bahrain	17	0.77
Panama	18	0.70	Bulgaria	18	0.77
Turkey	19	0.69	Albania	19	0.77
Qatar	20	0.69	Tunisia	20	0.77
Indonesia	21	0.69	Mauritius	21	0.77
Bulgaria	22	0.69	Rumania	22	0.77
Tunisia	23	0.69	Mexico	23	0.76
Mexico	24	0.68	Armenia	24	0.75
Egypt	25	0.68	Jordan	25	0.75
Oman	26	0.68	United Arab Emirates	26	0.73
Mauritius	27	0.67	Saudi Arabia	27	0.73
Trinidad and Tobago	28	0.65	Morocco	28	0.72
Jordan	29	0.65	Ukraine	29	0.72
Morocco	30	0.65	Kuwait	30	0.70
Jamaica	31	0.64	Indonesia	31	0.69
Greece	32	0.63	Libya	32	0.68
Russian Federation	33	0.63	Egypt	33	0.67
Lithuania	34	0.63	Turkey	34	0.67
Belorussia	35	0.63	Syria	35	0.66
Saudi Arabia	36	0.62	Botswana	36	0.66
Cambodia	37	0.61	Oman	37	0.66
Venezuela	38	0.60	South Africa	38	0.66
India	39	0.60	Russian Federation	39	0.65
Cape Verde	40	0.60	Panama	40	0.65
Costa Rica	41	0.60	Vietnam	41	0.65
Libya	42	0.59	India	42	0.65
Brazil	43	0.59	Brunei Darussalam	43	0.64

Results of EESI conducted in 1995 and 2005 (continuation)

Country	Rank 1995	EESI 1995	Country	Rank 2005	EESI 2005
Chile	44	0.58	Chile	44	0.64
Kuwait	45	0.58	Pakistan	45	0.63
Bangladesh	46	0.57	Argentina	46	0.63
Ukraine	47	0.56	El Salvador	47	0.63
Colombia	48	0.56	Uruguay	48	0.63
Dominican Republic	49	0.55	Georgia	49	0.62
El Salvador	50	0.55	Qatar	50	0.62
South Africa	51	0.54	Costa Rica	51	0.62
Philippines	52	0.54	Philippines	52	0.62
Haiti	53	0.53	Cape Verde	53	0.62
Sri Lanka	54	0.53	Peru	54	0.61
Bhutan	55	0.52	Kazakhstan	55	0.60
Vietnam	56	0.52	Cambodia	56	0.60
Algeria	57	0.52	Algeria	57	0.60
Kazakhstan	58	0.52	Equatorial Guinea	58	0.60
Syria	59	0.51	Brazil	59	0.59
Djibouti	60	0.50	Bangladesh	60	0.59
Pakistan	61	0.50	Dominican Republic	61	0.58
Peru	62	0.50	Bhutan	62	0.58
Uzbekistan	63	0.48	Sri Lanka	63	0.57
Botswana	64	0.47	Azerbaijan	64	0.57
Paraguay	65	0.47	Jamaica	65	0.55
United Arab Emirates	66	0.47	Gabon	66	0.53
Gambia	67	0.46	Namibia	67	0.52
Ecuador	68	0.45	Venezuela	68	0.51
Gabon	69	0.45	Laos	69	0.51
Mongolia	70	0.44	Nepal	70	0.50
Guatemala	71	0.44	Colombia	71	0.50
Bolivia	72	0.44	Republic of Congo	72	0.49
Laos	73	0.44	Iran	73	0.49
Iran	74	0.42	Guatemala	74	0.49
Côte d'Ivoire	75	0.42	Senegal	75	0.48
Nepal	76	0.41	Uzbekistan	76	0.48
Senegal	77	0.40	Mongolia	77	0.48
Cameroon	78	0.40	Nicaragua	78	0.47
Kenya	79	0.39	Côte d'Ivoire	79	0.46
Georgia	80	0.38	Cameroon	80	0.46
Zimbabwe	81	0.38	Tanzania	81	0.46
Honduras	82	0.37	Kenya	82	0.44
Albania	83	0.36	Bolivia	83	0.44

Results of EESI conducted in 1995 and 2005 (continuation)

Country	Rank 1995	EESI 1995	Country	Rank 2005	EESI 2005
Tanzania	84	0.34	Ecuador	84	0.43
Ghana	85	0.34	Honduras	85	0.42
Rwanda	86	0.34	Nigeria	86	0.41
Nigeria	87	0.34	Uganda	87	0.40
Armenia	88	0.33	Angola	88	0.39
Mauritania	89	0.31	Paraguay	89	0.39
Togo	90	0.31	Central African Republic	90	0.39
Madagascar	91	0.30	Yemen	91	0.39
Sudan	92	0.30	Mauritania	92	0.39
Guinea	93	0.30	Sudan	93	0.38
Niger	94	0.30	Zimbabwe	94	0.38
Chad	95	0.29	Benin	95	0.38
Burkina Faso	96	0.29	Ethiopia	96	0.38
Benin	97	0.28	Mali	97	0.38
Mozambique	98	0.26	Togo	98	0.38
Yemen	99	0.26	Djibouti	99	0.37
Central African Republic	100	0.26	Ghana	100	0.37
Ethiopia	101	0.25	Haiti	101	0.35
Burundi	102	0.24	Rwanda	102	0.35
Mali	103	0.22	Burkina Faso	103	0.34
Uganda	104	0.20	Gambia	104	0.34
Namibia	105	0.20	Guinea	105	0.34
Zambia	106	0.19	Mozambique	106	0.31
Angola	107	0.19	Zambia	107	0.30
Azerbaijan	108	0.18	Chad	108	0.30
Malawi	109	0.16	Madagascar	109	0.29
Equatorial Guinea	110	0.14	Niger	110	0.29
Nicaragua	111	0.12	Malawi	111	0.26
Rep. of Congo	112	0.10	Guinea-Bissau	112	0.26
Guinea-Bissau	113	0.08	Liberia	113	0.23
Liberia	114	0.03	Sierra Leone	114	0.22
Sierra Leone	115	0.00	Burundi	115	0.18

We also calculated the EESI for groups of countries.

	1995	2005
AFRICA	0.3886	0.4636
AMERICA	0.5960	0.6026
ASIA	0.6475	0.7512
EUROPEAN DEVELOPING COUNTRIES	0.5782	0.6551
UEMOA	0.3202	0.3887
ECOWAS	0.3202	0.3924

A2.6. Comments on the results

Of the 114 countries in the sample:

- 3 are developed. These are Singapore, the Republic of Korea and Ireland. These countries benefit from technological production systems approximating those prevailing in developed countries.
- 10 are pre-developed countries, including China, Malaysia and many countries in Eastern Europe and Central Europe.
- 18 are post-emergent countries, including Tunisia, Mauritius and Morocco;
- 33 are emerging countries, including Libya, Botswana, Egypt, South Africa, Cape Verde, Algeria and Equatorial Guinea;
- 19 are pre-emerging countries;
- 22 countries are aspiring to the emergence
- 10 countries are poorly developed.

A2.7. Crossing the EESI with other countries performance indices

(a) Some examples of development indices

The Human Development Index (HDI)
The Human Development Index (HDI) is calculated annually by the UNDP for all countries (with a two year lag for the consideration of country data). Thus for 2006, the index was estimated with data from 2004).

Its calculation is based on three sub-indices: an index of life expectancy at birth, educational attainment index (literacy + enrollment), GDP per capita at PPP. The three sub-indices are included in the composite index with the same weight (1/3).

The Global Competitiveness Index (GCI)
It is the most comprehensive currently available that enables the measurement of the overall competitiveness of a country. Calculated annually by the World Economic Forum in a large sample of countries. it is largely based on the Michael Porter work on the competitiveness of nations and encompasses eight pillars: (i) public institutions; (ii) infrastructure; (iii) the macroeconomic framework; (iv) health and basic education; (v) higher education and training; (vi) the efficiency of the market; (vii) the technological capabilities; and (viii) sophistication of local industry.

Countries that perform best for this index have, in practice, the best business environment and should attract more direct investment and achieve the highest scores for EESI.

Indicator "Doing Business"
The World Bank survey "Doing Business", conducted annually, involved 175 countries in 2005-2006. The ranking of countries is based on several variables of reforms: i) the costs and time required to meet government requirements regarding business development and licensing; ii) registration of properties; iii) labor legislation; iv) ease of access to credit; v) taxation; vi) investment protection; vii) the implementation of contracts,; and viii) international trade procedures. More a country has a high

degree of reforms in each of these variables (complementary reforms upwards), better it improves its position in the ranking.

The Governance Index
It is a composite index aggregating six sub-indices: (i) freedom of expression and responsibility; (ii) political stability; (iii) Government effectiveness; (iv) quality of the regulatory framework; (v) rule of law; and (vi) control of corruption.

This index is measured since fifteen years in most countries around the world.

(b) Test Results

The successive regression of the EESI on the DBUSINESS, GOVERNANCE, GCI and HDI, resulted on the following:

Box 4: CORRELATION OF THE EESI WITH OTHER DEVELOPMENT INDEX

Global Competitiveness Index (GCI) HDI = Human Development Index, Doing Business; K1 to K6 = governance index of Kaufmann respectively "1 = structure of expression and responsibility," "2 = political stability and absence of violence "" 3 = government effectiveness "," 4 = Quality of Legislation "," 5 = rule of law "," 6 = fight against corruption ".

The EESI is highly correlated with the Global Competitiveness Index, the Human Development Index and the Index of government effectiveness.

	RANGISEME2005
RANGGCI	0,85667234
RANGIDH2007	0,754951472
RANGK32005	0,731878797
RANGK42005	0,685701886
RANGK52005	0,664530892
RANGDOING BUSINESS	0,646363213
RANGK62005	0,624982246
RANGK12005	0,404892291
RANGK22005	0,404892291

A2.8. Potential usefulness of the EESI

The calculation of EESI - at regular intervals- (year after year) using major samples for all the developing countries has several advantages.

First of all, it provides for a better assessment of the actual performances of the countries towards overall development rather than the mere observation of the development of the annual growth rates.

K0

Each country, then could (through the breakdown of the index into sub-indicesclearly broken down into well identified variables) carry out its own evaluation of its status of emergence and assess the factors on which to focus priority attention in order to move forward.

Finally, EESI can gainfully complement the indices such as the *Global Competitiveness Index* or the *Doing Business* indicatorswhich further assess the potential attractiveness of the tangible performance of the country and its population in terms of supplementary employment and income.

In combination with EESI, *the Global Competitiveness Index* (or *EESI* and *Doing Business*) provide for a twin assessment of inputs (improvement in the business environment) and the outputs (performance in terms of accelerated growth, investments and exports) as required and generated by the new context of globalization.

Appendix 3: Evaluation of the progress made by Africa on the MDG indicators (official list)

Millennium Development Goals(MDGs)		Probability of attainment of the goals in 2015
Goals and Targets in the Millennium Declaration	**Indicators to monitor progress attained**	
Goal 1: Elimination of extreme poverty and hunger		
Target 1A:Reduce by half between 1990 and 2005, the proportion of the population earning less than a dollar per day	1.1 Proportion of the population earning less than a dollar per day as parity to the purchasing power	Low
	1.2 Index on the poverty gap	Low
	1.3 Proportion of the poorest quintile of the population in national consumption	Low
Target 1B:Ensure full employment and opportunities for all including women and the youths to acquire a decent and productive employment	1.4 GDP growth rate per employed person	Low
	1.5 Ratio employment/population	Low
	1.6 Proportion of the working population earning less than a dollar per day	Low
	1.7 Proportion of self-employed workers and family workers among the working population	Low
	1.5 Ratio employment/population	Low
	1.6 Proportion of the working population earning less than one dollar per day	Low
	1.7 Proportion of self-employed workers and family workers in the working population	Low
Target 1C:Reduce by half between 1990 and 2015, the proportion of the population suffering from hunger	1.8 Prevalence of underweight children under 5 years	Low
	1.9 Proportion of the population with the minimum level of calorie intake	Low
Goal 2: Ensure primary education for all		
Target 2A: By 2015, to provide every child, boy and girl the means to complete primary school	2.1 Net rate of primary school enrolment	High
	2.2 Proportion of pupils that started the first year of primary school and completed	Low
	2.3 Illiteracy rate of women and men between 15 and 24 years	Low
Goal 3: To promote gender equality and the empowerment of women		
Target 3A:Eliminate gender disparities in primary and secondary education by 2015 if possible and at all levels in 2015 at the latest	3.1 The relationship girls/boys in primary, secondary and higher education	Low
	3.2 Proportion of salaried women in the non-agriculture sector	Low
	3.3 Proportion of seats occupied by women in the national Parliament	Low
Goal 4: Reduce under 5 infant mortality		
Target 4A: Reduce by two-thirds between 1990 and 2015, the rate of under 5 infant mortality	4.1 Mortality rate among children under 5 years	Low
	4.2 Infant mortality rate	Low
	4.3 Proportion of I year old children vaccinated against smallpox	Low
Goal 5: Improve maternal health		
Target 5A: Reduce by three-quarter between 1990 and 2015, the maternal mortality rate	5.1 Maternal mortality rate	Low
	5.2 Proportion of births delivered by qualified health personnel	Low

Millennium Development Goals(MDGs)		Probability of attainment of the goals in 2015
Goals and Targets in the Millennium Declaration	**Indicators to monitor progress attained**	
Target 5B : Provide access to universal procreative medicine by 2015	5.3 Contraception rate	Low
	5.4 Birth rate among adolescents	Low
	5.5 Antenatal care coverage (at one or four consultations)	Low
	5.6 Inadequate family planning needs	Low
Goal 6: Control HIV/AIDS, malaria and other diseases		
Target 6A: By 2015 having arrested the spread of HIV, start to reverse the present trend	6.1 The prevalence rate of HIV among the population ranging from 15 to 24 years	Average
	6.2 The use of condoms in the last report on high-risk sex	Low
	6.3 Proportion of the population between 15 and 24 years with exact and complete knowledge on HIV/AIDS	Low
	6.4 Enrolment rate of orphans compared to non-orphans from 10-14 years	High
Target 6B: By 2010,ensure that all those in need have access to treatment against HIV/ AIDS	6.5 Proportion of the population with an advanced stage of HIV infection with access to retroviral drugs	Low
Target 6C: By 2015, having controlled malaria and other major diseases, start to reverse the present trend	6.6 Incidence of malaria, malaria mortality rate	Low
	6.7 Proportion of children under five sleeping under treated mosquito nets	Low
	6.8 Proportion of children under 5 years suffering from fever and treated with appropriate anti-malaria drugs	Average
	6.9 Incidence and prevalence of tuberculosis and the tuberculosis mortality rate	Low
	6.10 Proportion of cases of tuberculosis detected and treated directly and monitored in the short term	Low
Goal 7: Ensure a sustainable environment		
Target 7A: Integrate the principles of sustainable development in the national policies and programmes and reverse the present trend in the depletion of the environmental resources	7.1 Proportion of forest zones	Low
	7.2 CO2emissions (total, per inhabitant and per dollar of GDP at purchasing power parity	Low
	7.3 Consumption of substances depleting the ozone layer	Average
	7.4 Proportion of fish stock in healthy biological environment	Low
Target 7B: Reduce biodiversity loss and effect a significant reduction in the rate of the loss by 2010	7.5 Proportion of total used water resources	Low
	7.6 Proportion of protected land and maritime zones de zones	Average
	7.7 Proportion of species threatened with extinction	Low
Target 7C: Reduce by half by 2015, the percentage of the population with neither sustainable access to potable nor sustainable access to basic sewerage services	7.8 Proportion of the population using improved source of potable water	Low
	7.9 Proportion of the population using improved sewerage infrastructure services	Low
Target 7D: Improve considerably by 2010, the living conditions of at least 100 million inhabitants living in slums	7.10 Proportion of city dwellers living in slums	Low

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