United Nations
Economic Commission for Africa

THE AFRICAN SOCIAL DEVELOPMENT INDEX

Measuring Human Exclusion for Structural Transformation

Contents

Executive summary

Despite two decades of fast and sustained economic growth, Africa has yet to translate its economic gains into meaningful social outcomes. Considerable inequalities persist in many countries, and growth has not been sufficiently inclusive and equitable for all segments of the population. As a result, exclusion of people from the development process has become a challenge for Africa's future development. The continent's transformation will only be successful and sustainable if it is also inclusive, that is if each individual has the opportunity to contribute to and benefit from growth, and participates fully in social and economic development.

The construction of an index to measure exclusion in Africa is the outcome of a request by member States to have an African tool to capture the continent's current and specific social challenges, to help member States to develop more inclusive and equitable policies. The African Social Development Index is built on the belief that social development should be reflected in improved human conditions. Adopting a life-cycle approach, the Index measures the levels of human exclusion in six key dimensions of well-being: survival, health, education, employment, means of subsistence and decent life. One of the key features of the Index is that it can be measured over time and disaggregated by gender and geographical location, so as to capture patterns of exclusion and inequality within countries and across different population groups.

The Index has been developed for and with African member States through a strong consultative process, taking into account Africa's current and emerging social challenges. It is a simple, intuitive tool that African countries can use to monitor and improve the effectiveness of social policies.

The results of the Index will be instrumental in mapping and assessing the impact of social policies in reducing human exclusion, in line with Africa's aspirations of achieving inclusive and sustainable development and "leaving no one behind", as envisioned in Agenda 2063 and Agenda 2030 for Sustainable Development.

Chapter I. Introduction

Background

African countries have experienced unprecedented economic growth since the early 2000s and shown strong resilience to the global downturn affecting most of the world's economies. Growth on the continent has averaged 5 per cent yearly, with some countries posting 7 to 11 per cent growth in gross domestic product (GDP) in recent years. Despite this remarkable growth, however, member States have yet to transform their economies and achieve the level of social development witnessed in other regions.

The continent is still fraught with inequalities and exclusion caused by differences in income, ethnicity, gender, age, disability and location. Evidence shows that poor children in Africa are still about two and a half times more likely to be underweight and up to three times more likely to be out of school than those from the richest households (United Nations, 2012). Such inequalities often lead to a lack of social and economic opportunities in life, excluding the same individuals from development and full participation in society.

The dominant view is that Africa has for a long time focused on economic growth, with the expectation that improvements in social development would follow. However, the nature of Africa's growth – largely driven by capita-intensive sectors, with limited value addition and job creation, and unfair redistribution of economic gains – has meant that growth is not sufficiently inclusive and equitable, compromising its sustainability and fuelling the risk of social and political instability in the region.

At the same time, limited social protection in many countries has exacerbated the exclusion of the most marginalized population groups. These groups, in addition to having limited access to social and economic opportunities, are also more vulnerable to external shocks, reducing their productive capacities and pushing them back or further into poverty.

Promoting a more inclusive development path in Africa is an urgent priority and a pre-condition for building more sustainable and cohesive societies. However, policy interventions based on aggregate figures are generally not conducive to optimum decision-making, and the inadequacy of relevant data and monitoring mechanisms are likely to lead to weak policy formulation and planning.

Rationale behind the African Social Development Index

In Africa, the emergence of social development as a central plank of economic development has gained impetus. The need for an inclusive and transformative growth strategy is a clear political intent firmly expressed by African leaders in the context of Agenda 2063 and the 2030 Agenda for Sustainable Development, which are anchored on the principles of equality, sustainability and "leaving no-one behind" (AUC and ECA, 2013).

The recognition of the role of inclusiveness in sustaining development is not new. At the 1995 World Summit on Social Development held in Copenhagen, world leaders acknowledged the importance of social inclusion and integration for achieving sustainable development worldwide. For the first time, there was a shift from a simple model of deprivation to a holistic one of human poverty, exclusion and participation.

At the United Nations Conference on Sustainable Development in 2012, global leaders renewed their commitments to promote social integration through creation of more cohesive and inclusive societies.[1] Following the Conference, the need to tackle exclusion as an objective per se started to gain resonance in the development discourse.

At the regional level, African Governments have also become increasingly aware of the centrality of "inclusiveness" in the continent's development agenda. This is reflected in their commitment to the 1995 Copenhagen Declaration and Programme of Action, underscored by the 2008 Windhoek Declaration on Social Development and Social Policy Framework for Africa, which have been instrumental in advancing the New Partnership for Africa's Development (NEPAD) social development priorities across the continent. African countries have also taken action to address specific challenges of excluded groups – including youth, women and the elderly – using platforms such as the International Conference on Population and Development, the Beijing Platform for Action, the Ouagadougou Plan of Action, the Abuja Declaration and the Madrid Plan of Action on Ageing.

However, the implementation of these commitments has not led to the desired outcomes for a number of reasons. Firstly, until recently, only a few had a clear understanding of the challenge of "exclusion" and how it could be addressed and incorporated into national development planning (ECA, 2009).

Secondly, so far none of the internationally-agreed development agendas, including the Millennium Development Goals, have explicitly addressed the inclusive dimension of development, and their aggregate nature has failed to identify within-country inequalities that would require different policy interventions from those devised at national or regional levels.

Capacity gaps also persist, and there is a lack of monitoring mechanisms to assess inclusion in Africa, thereby leading to inadequate statistical follow-up and social policy formulation.

To accelerate progress, governments need to develop policies that make equality and inclusion a choice of development strategies rather than their by-product. For Africa's structural transformation to be inclusive, indeed, the continent requires strong and responsive developmental States and long-term development planning that is consistent with development framework, as envisioned in Agenda 2063 and the 2030 Agenda for Sustainable Development.

To respond to these challenges, member States called upon the Economic Commission for Africa (ECA), at the second session of the Committee on Human and Social Development in 2011, to develop an index to monitor social outcomes, with a view to improve the capacity of governments to implement appropriate inclusive policies. The Index also responds to ongoing debates on the global and regional development agenda beyond 2015, which give prominence to the role of social inclusion and equality in development.

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1   Inclusive society was defined as "a society for all, in which every individual, each with rights and responsibilities, has an active role to play". Such a society is based on the fundamental values of equity, equality, social justice, human rights and freedoms. It should also be equipped with appropriate mechanisms that enable its citizens to participate in the decision-making processes that affect their lives and shape their common future (United Nations, 1995).

Chapter II. Human exclusion: A new paradigm for inclusive development

Exclusion is a multidimensional phenomenon, whose contours are difficult to define unless a clear framework is established on how it should be assessed and what aspects should be covered in the process. It is acknowledged that, despite strong economic growth, an "excluded" society is likely to deter human and social development of all citizens. This is indeed what the continent is currently experiencing, with strong economic growth unable to ensure an inclusive and equitable distribution of benefits across all sections of society.

There is evidence that progress towards inclusive development in Africa has been slow, and its drivers limited, to meet the needs of its people. This increases exposure to economic volatility and vulnerability to external shocks, particularly for the poorest and the marginalized groups. It is critical to ensure that these groups are included in the development process, accelerating the transition towards more equitable development (see figure 2.1).

Figure 2.1: From Basic Structural Transformation to Inclusive Development
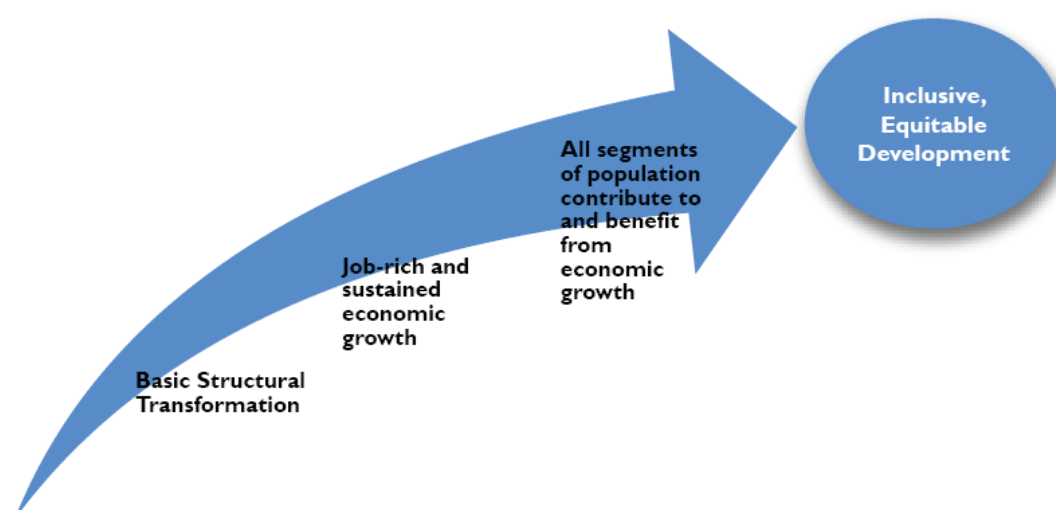
In this context, the economic transformation of the continent seems to be well defined and under way, with four essential and interrelated processes, namely: a declining share of agriculture in GDP and employment; a rural-urban migration that stimulates the process of urbanization; the rise of a labour-intensive industrial and service economy; and a demographic transition from high to lower mortality and fertility rates, associated with better health standards in both rural and urban areas (ECA, 2013b). However, the human and social development impacts underpinning this process require further analysis.

A key component of this framework is the need to address the excluded groups for a balanced transformative agenda. This would provide the basis for redressing country-specific exclusion patterns, through effective policy formulation, both at national and sub-national levels.

As part of this effort, a new paradigm is proposed for the social transformation of Africa, where reducing human exclusion is at the centre of this transformation. The challenge for African countries is therefore to accelerate the path of structural transformation, while addressing the factors that contribute to exclusion.

Key drivers of human exclusion

Exclusion is structural and needs to be prioritized in order to sustain growth and maintain peace. Exclusion also skews development dynamics, economic opportunities and job creation, leaving the economy with a narrow base and higher vulnerability to external shocks. In addition to its economic impact, exclusion – whether based on income, gender, geographical, political or other factors – has critical social costs. It is argued that the drivers of exclusion are often determined by the interaction of a series of contextual factors, as illustrated in figure 2.2:[2]

Figure 2.2: Determinants of Exclusion
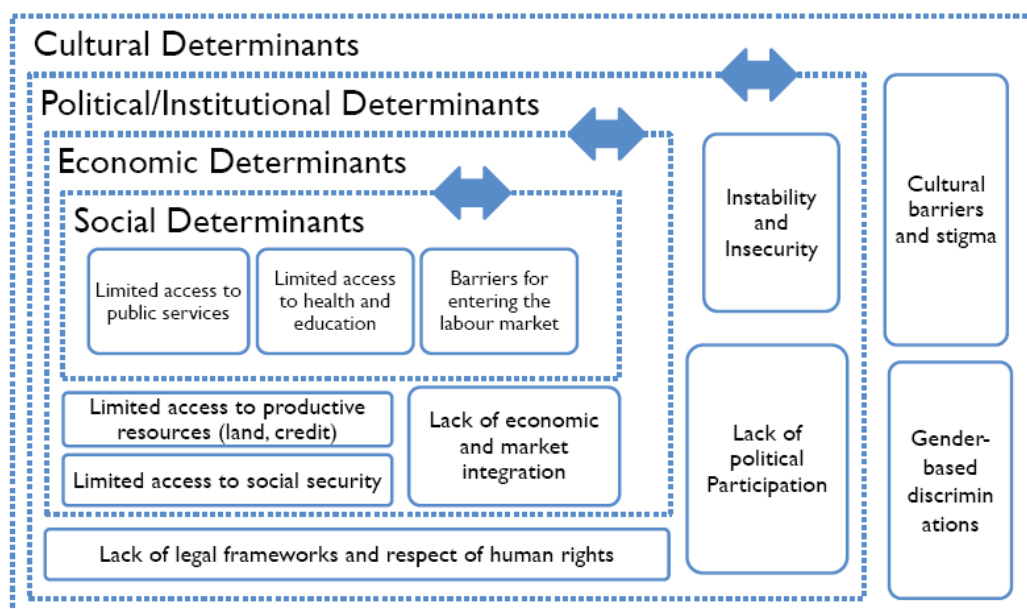
- **Social factors** include elements associated with access to basic social services, including health, education, and social security, among others;

- **Economic factors** take into account access to productive resources – including land and credit – as well as the degree of economic and market integration;

- **Political-institutional factors** encompass government policies and programmes aimed at addressing instability and insecurity, ensuring political participation and access to civil and human rights; and,

- **Cultural factors** define the norms and environment in which a person lives, in terms of traditions or gender-based barriers.[3]

These factors, often a consequence of policies and programmes, can have an impact on the likelihood of an individual to be either included or excluded from the development process. Within this framework, human exclusion can therefore be defined as 'the result of social, economic, political, institutional and cultural barriers that are manifested in deprived human conditions and that limit the capacity of individuals to benefit and contribute to economic growth.'

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2   For more details, see also ECA (2014).

3   Other inhibiting factors, which are not explicitly included in this framework, but are often found to be underlying determinants of exclusion, include the rural-urban divide, disability, ethnicity, HIV/AIDS status, internal and external conflicts, among others.

It is important to highlight the distinction between human exclusion and the commonly-used term - social exclusion. Social exclusion refers to a person or a group's inability to participate in social, economic, political and cultural life and their relationships with others. Human exclusion, on the other hand, refers to the individual's inability to participate and benefit from the growth process itself. To that extent, human inclusion can be considered a stage prior to social inclusion – people need to be part of the growth process, and benefit from it, before they can participate in society.

An individual can be excluded from development in different ways, at different stages of life. A child can be under-nourished, with long-life consequences on his/her physical and cognitive development. As a consequence, their educational and employment prospects will most likely be affected, perpetuating a condition of human exclusion over a life-time. Exclusion from development can also appear later in life, and some groups can be more excluded than others (e.g. young women, migrants, minority groups, elderly etc.), for cultural, social, economic or political factors.

Differential impacts of exclusion on women and men

In each phase of life, women and girls are affected by vulnerabilities to a different extent and in different ways than their male counterparts. This stems from the fact that women and men have different roles in society, different access to and control over resources, and different concerns that can impact their likelihood of being included or excluded from mainstream development.

Some of these differences are intrinsic to gender, while others are the result of cultural biases and social factors. Gender-based discriminations are found to affect women and girls throughout their life cycle. There are large number of studies showing that women and girls generally bear the brunt of unpaid care work; are generally paid lower wages, suffer more than boys the consequences of a truncated education; are more likely to enter into unskilled informal labour; and are more often victims of exploitation, violence or early marriage. All of this may critically affect their future development and ability to participate in social, economic and decision-making processes. The effects, however, can vary across dimensions and stages in life. For instance, it is found that in developing countries, girls who survive early stages of life and reach adulthood have a life expectancy that approaches that of women in developed countries. A gap that will most likely narrow in the future, as mortality declines at younger ages. On the other hand, child malnutrition is higher among boys than girls in most developing countries, although results are not uniform across countries. In India for instance, because of their lower social status, girls are more at risk of malnutrition than boys (Smith and Haddad, 2000).

Early marriage and other traditional practices also have a significant bearing on girls' educational achievements, lowering their social and economic opportunities and life prospects. These differential outcomes – whether based on contextual factors or intrinsic to gender – need to be tackled through targeted interventions, as it is found that policies that do not adequately address such differences tend to perpetrate gender inequalities over time (Hedman, 1996; ECE and World Bank Institute, 2010).

Exclusion in urban and rural areas

Patterns of exclusion are also influenced by the geographical location in which an individual is born and lives. People in rural areas often lack the minimum social and economic infrastructure – including basic social services and decent job opportunities – that would allow them to develop

to their full potential. Globally, Ravallion and others (2007) found that 75 percent of those living in extreme poverty in 2002 resided in rural areas, despite the fact that only 52 percent of the world population was living in such areas. The latest findings also point to higher rural poverty rates in Africa (UN, 2014). While this is true, African cities are also increasingly faced with challenges, including urban congestion, environmental and health hazards, poor infrastructure, social fragmentation, limited access to land as well as increased competition that bars unskilled workers from economic and social opportunities.

The Index seeks therefore to address the differential impacts of exclusion based on gender and location. This will allow capturing inequalities within countries and social groups that would otherwise remain unaccounted for. The findings should guide policy targeting and development planning processes at the local level and on different population clusters.

Chapter III. African Social Development Index

The new paradigm for inclusive development is based on the premise that exclusion can have different manifestations at different stages of a person's life. The risk of being excluded indeed is not static but rather dynamic, and countries need to define policies that address the various patterns of exclusion over the individual's life cycle, to avoid the incremental consequences of being excluded.

As discussed in the previous chapter, exclusion is likely to be transmitted from one stage of life to another, with incremental impacts over the entire life-cycle of the individual. For instance, numerous studies have shown that malnutrition suffered during childhood can have irreversible consequences on the physical and cognitive development of the child, affecting his/her educational achievements and productivity later in life (ECA, 2013). At the same time, a low level of skills limits the individual's ability to access a productive job – which provides the means of subsistence for them and their families.

Earlier studies also show that the contribution an individual can bring to the economy through employment goes beyond the individual himself, as there are important spill-over effects on social and political participation that transcend economic gains (Pieters, 2013). This is particularly important for Africa where countries can reap the benefits of a large demographic dividend, which can be turned into a skilled and productive workforce, with large contributions to the economy.

Hence, for each phase of life, a key dimension of well-being has been identified, in which individuals from that specific age group are more likely to be excluded, affecting their overall participation and contribution to development (see table 3.1).

Table 3.1: Exclusion Throughout the life Cycle

Period	Stage in the life Cycle	Dimensions
Birth to 27 days	Birth	Survival
28 days to 5 years	Early childhood	Health/Nutrition
6-14 years	Formative years	Quality education
15+	Entering the labour market	Productive employment
25+	Productive life	Means of subsistence
60+	Old age	Living a decent life

To make this framework operational, each dimension is associated with one proxy indicator that best captures the aspects of exclusion identified in the model (Figure 3.1).[4]

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4   A detailed methodological note is presented in annex 1.

Figure 3.1: Indicators of Human Exclusion Using a Life-Cycle Approach
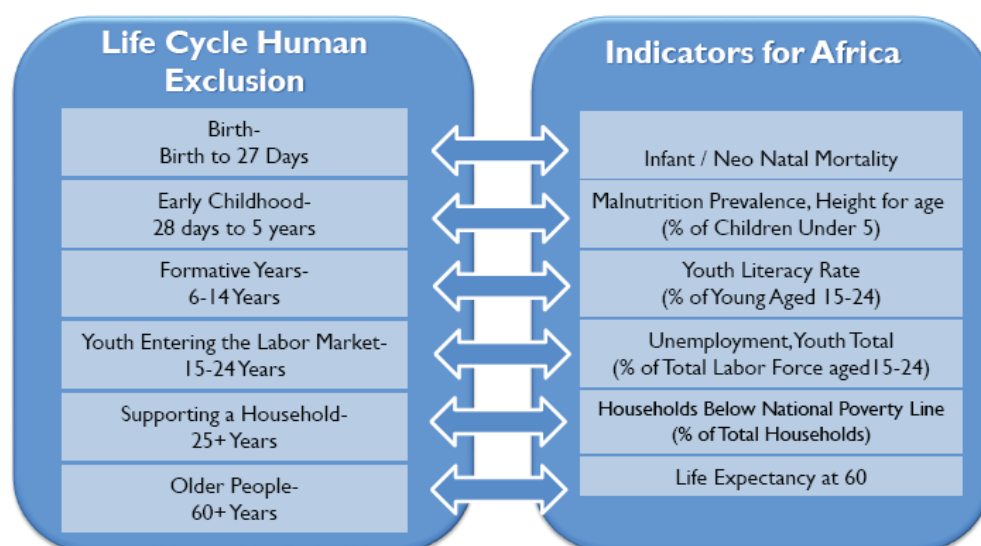
The value of each indicator ranges between 0 and 1 and the aggregate value of the Index lies between 0 and 6. The higher the value, the higher the extent of human exclusion.

The Index goes further to measure the differential impacts of exclusion based on gender and location. This allows capturing inequalities within countries and social groups that would otherwise remain unaccounted for. These findings should guide development-planning processes and improve policy targeting at the local level and on different population clusters.[5]

Selection of indicators

The selection of indicators is the result of a strong consultative process, involving key experts from member States, regional institutions and development partners. The final selection was based on three main criteria: relevance of dimensions and indicators in the African context; readily available data, possibly at various tiers of administration; and "impact" rather than "output" indicators.

While the selected indicators may not capture the full dimension of exclusion in each phase of life, they were chosen as the best proxy indicators based on available data and empirical evidence on exclusion in Africa. The methodological foundations of the Index are detailed in annex 1.

Key features of the Index[6]

The Index has a number of key features that distinguishes it from other indicators:

- Developed on the basis of a request from and in consultation with member States;

- Uses national and sub-national data, and so does not rank countries;

- Intuitive and simple to comprehend and compute;

5   The application of the Index in Africa is currently led by national implementation teams, including experts from key line ministries and national statistical offices. The data utilized to compute the Index is based on national statistics – mainly censuses, household and demographic/health surveys – and results are produced by the national implementation teams, with technical support from ECA.

6   For a brief description of selected social development indicators, see annex 2.

- Only indicator to measure human exclusion;

- Follows a life-cycle approach;

- Anchored on Africa's development priorities.

Implementation strategy

The application of the Index is currently led by national teams put in place in each implementing country, with representatives drawn from key ministries, including ministries of planning, ministries of economy and finance and ministries in charge of social affairs, as well as national statistical offices. Five countries (Cameroon, Kenya, Morocco, Senegal and Zambia) have piloted the Index in Africa, and the roll-out phase started in 2015, with five sub-regional capacity building workshops, covering a total of 45 countries and 8 regional economic communities. The training of senior officials from relevant ministries will help to strengthen national ownership and sustainability of the project. Sub0-regional reports on the Index, with consolidated national findings, are being developed and will be produced on a regular base, depending on the availability of relevant and up-to-date statistics in each country.

Conclusion and way forward

Preliminary results of the Index have pointed to the need for African countries to refocus their development agendas in order to address human exclusion more effectively and deal with both its underlying and structural drivers. Exclusion is a multidimensional phenomenon and addressing it is a long-term process, particularly when its causes are rooted in historical and cultural norms. Inclusive policies can help to expand opportunities and build human capital, ensuring effective integration of all members of society in the development process.

While each individual, based on age, gender or location, may face particular challenges, inclusive policies should be based on a thorough understanding of the social, economic, political and cultural factors that underpin exclusion, to ensure that the structural causes thereof are addressed throughout the individual's life-cycle. This requires a mix of targeted and comprehensive interventions, to ensure that both group-based vulnerabilities and individual rights to social and economic integration are addressed effectively.

Exclusion is clearly a major hindrance to social and human development in Africa, and it is widely recognized that people's living conditions will improve little without a more inclusive approach to development. Further, ignoring exclusion can be a recipe for social unrest and a threat to peace and security in the region.

In this context, the Index provides an important policy tool for member States to identify policy gaps and formulate appropriate interventions to bridge the gap between the haves and the have-nots. Through its disaggregation by social groups and across dimensions, the Index can deepen analysis and understanding of human exclusion, helping to identify the key drivers of exclusion in each country. Additionally, the application of the Index at the sub-national level is critical in capturing within-country inequalities, reorienting key policy options and placing inclusive policies at the centre of national and sub-national planning.

Achieving inclusive development is not simply about increasing the size of national economies, but also about learning and shaping enduring opportunities that take the rights of individuals into consideration. Global and regional frameworks, such as the 2030 Agenda for Sustainable Development and Agenda 2063, reflect the aspiration of the people to move beyond economic growth and place the human and social dimensions at the centre of the development process.

Piloting the Index in five African countries has allowed the tool to be tested and further refined, making it more responsive to the needs of member States. A policy-mapping framework has been developed as part of the follow-up strategy, to assess the effectiveness and type of social policies that can contribute to reducing human exclusion. This exercise will be a major step forward in using the Index for development planning and improved policy targeting. It will also ensure the critical buy-in of African member States and the involvement of other relevant stakeholders, including development partners, non-State actors and regional strategic institutions concerned with social protection and social development policies.

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Annex 1: Methodological note on the African Social Development Index

Theoretically, the Index seeks to measure the distance between people who are able to participate in development and those who are excluded from development processes. Hence, the "distance" between the included/excluded groups may be measured as follows:

$$[dExv] = \frac{\alpha P_x^v}{1 - \alpha P_x^v}$$

where (P^v) measures the degree of exclusion of an individual for a specific dimension of development or vulnerability [v], such as the prevalence of children undernourished or the proportion of individuals below the poverty line, in a particular population group [x].

If $\alpha P_x^v > 0.5$, the formula will establish a maximum value of 1, as more than 50 percent of the population excluded would represent a disproportional situation (normalization).

In the case where the indicator $(P^{\breve{v}})$ measures the degree of inclusion (or "non-exclusion"), for instance the proportion of people NOT affected by a specific vulnerability (αP_x^v) ; as is the case of literacy rate, the indicator is transformed by applying:

$$\alpha P_x^v = 1 - (\alpha P_x^v)$$

Hence the "distance" in the level of exclusion can be calculated by applying the inverse equation:

$$[dExv] = \frac{1 - \alpha P_x^v}{\alpha P_x^v}$$

Similarly, if $Px_v < 0.5$, the formula will establish a maximum value of 1.

After normalization, the level of human exclusion will result in a score that will range between $(0 > dEx^v \leq 1)$, indicating the proportional distance between those participating in the specific dimensions of development and those excluded from those processes. In the case of indicators where there is no national comparative value, such as the case of mortality rates and life expectancy, a comparable reference is applied to estimate the distance to a desired or expected situation, as follows:

$$[dEx^v] = \frac{P_x^v - P_x^r}{P_x^v}$$

where [r] is a reference value established as a comparative parameter for a given population *(P)* and age group [x].

In case the indicator presents a situation of "inclusion", such as life expectancy at 60, the following reverse equation should be applied:

$$[dEx^v] = \frac{P_x^r - P_x^v}{P_x^v}$$

Table A.1: Neonatal mortality

Indicator	Neonatal mortality
Dimension of exclusion:	SURVIVAL The number of infants who do not survive the neonatal period, or 28 days of life, can be used to gauge survival or access to life. It is estimated that roughly 45 percent of deaths among children under-five occur during this period[7]. This situation is often a reflection of exclusion from and the quality of health facilities (WHO, 2002). The measurement of exclusion in this area is computed using national neonatal mortality rates at national levels, as compared to the average neonatal mortality rate in lower middle-income countries.
Definition:	Number of children who die between 0 and 27 days, expressed per 1,000 live births (WHO)
Formula :	$$[dEx^{Nm}] = \frac{Nm^n_{0-28} - Nm^r_{0-28}}{Nm^n_{0-28}}$$ $[dEx^{lm}]$: Degree of exclusion from basic health services Nm^r_{0-28} : Reference value for neonatal mortality, given by the average value of lower middle income countries[2] Im^n_{0-1} : National estimates of child mortality
Computation:	National, rural / urban, male / female
	Applying the formula; $$[dEx^{Nm}] = \frac{Nm^n_{0-28} - Nm^r_{0-28}}{Nm^n_{0-28}} \text{ (*)}$$ In Excel, use the following condition IF: IF $Nm^n_{0-28} < Nm^r_{0-28}$ give the value 0 IF NOT apply the formula (*)
	Sub-national level
	The procedure is as follows: We determine the minimum value of mortality at the sub-national level, i.e. taken among all sub-regions within the country in a given year. This becomes our new reference value, and referred to as $min(Nm^{Sub}_{0-28})$ OR $min(Nm^{Sub}_{0-28}) = Nm^{SubRef}_{0-28}$ Hence, the new formula becomes: $$[dEx^{Nm}]_i = \frac{Nm^{Subi}_{0-28} - min(Nm^{Sub}_{0-28})(**)}{Nm^{Subi}_{0-28}}$$ Where: $min(Nm^{Sub}_{0-28})$ is the minimum reference value for infant mortality at the sub-national level. And Nm^{Subi}_{0-28} is the sub-national estimates of child mortality $[0-1]$ year for each sub-region i. In Excel, use the following condition IF : IF $Nm^{Sub}_{0-28} < Nm^{SubRef}_{0-28}$, give the value 0 IF NOT, apply the formula (*)

Table A.2: Child stuntin

Indicator	Child stunting
Dimension of exclusion:	NUTRITION The second dimension of exclusion is the diminished capacity of children to meet their basic nutritional needs. The life-long consequences of early child malnutrition have been widely documented, and its prevalence indicates, among others, exclusion from the adequate delivery of health services (ECA, 2013a).
Definition:	Percentage of children under five who are stunted – i.e. whose height for age is more than two standard deviations below the median for the international reference population aged 0-59 months (WHO).
Formula:	$$[dEx^{ChM}] = \frac{ChM^n_{28d-59m}}{1-ChM^n_{28d-59m}}$$ $[dEx^{ChM}]$: Degree of exclusion from health/nutrition $ChM^n_{28d-59m}$: Proportion of children between 28 days and 59 months suffering from chronic malnutrition at the national level
Computation:	National/sub-national, rural/urban, women/men:
	In Excel, use the following condition IF: IF $ChM^n_{28d-59m}$ f 50 , give the value 1 IF NOT, apply the formula (*): $$[dEx^{ChM}] = \frac{ChM^n_{28d-59m}}{1-ChM^n_{28d-59m}} \; (*)$$

Table A.3: Literacy rate (15-24 years)

Indicator	Literacy rate (15-24 years old)
Dimension of exclusion:	EDUCATION A third manifestation of exclusion in the life cycle may be associated with access to quality education, which provides the means for larger opportunities later in life. Literacy rates observed after educational years (15-24 years) provide a good proxy for the effectiveness of educational efforts, at the impact level.
Definition:	Percentage of population between 15 and 24 years of age who can read and write (UNESCO)
Formula :	$$[dEx^{Lr}] = \frac{1-Lr^{\%}_{15-24}}{Lr^{\%}_{15-24}}$$ $[dEx^{Lr}]$: Degree of exclusion from access to quality education $Lr^{\%}_{15-24}$: Literacy rate among 15-24 years old
Computation :	National and sub-national :
	In Excel, use the following condition IF: IF α $Lr^{\%}_{15-24}$ p 50 give the value 1 IF NOT apply the formula (*): $$[dEx^{Lr}] = \frac{1-Lr^{\%}_{15-24}}{Lr^{\%}_{15-24}} \; (*)$$

Table A.4: Youth unemployment (15-24 years old)

Indicator	Youth unemployment (15-24 years old):
Dimension of exclusion:	ACCESS TO LABOUR MARKET Another form of exclusion faced by individuals when they complete their educational cycles is reflected in their capacity to access decent job opportunities. The school-to-employment transition is often determined by the capacity of an economy to generate job opportunities for this key age group.
Definition:	Share of the youth labour force who is without work but available for and seeking employment (ILO definition).[8]
Formula :	$$[dEx^{Yu}] = \frac{Yu^n_{15-24}}{1 - Yu^n_{15-24}}$$ $[dEx^{Yu}]$:Degree of exclusion from access to the labor market Yu^n_{15-24} : Proportion of individuals aged 15-24yearswho are unemployed, measured at national level
Computation :	National and sub-national
	In Excel, use the following condition IF: IF Yu^n_{15-24} f 50, give the value 1 IF NOT, apply the formula (*): $$[dEx^{Yu}] = \frac{Yu^n_{15-24}}{1 - Yu^n_{15-24}} \quad (*)$$

Table A.5: National-based poverty

Indicator	National-based poverty
Dimension:	MEANS OF SUBSISTENCE A major form of exclusion during adulthood can be reflected in the inability of an individual to ensure the basic needs for them and their families to live a decent life. This is reflected in the level of poverty, based on consumption, calorie in-take or income (according to the poverty threshold set at national level).
Definition :	Proportion of population below the national poverty line
Formula :	$$[dEx^{Np}] = \frac{Np^n_h}{1 - Np^n_h}$$ $[dEx^{Np}]$: Degree of exclusion from basic means of subsistence Np^n_h : Proportion of population living below the national poverty line
Computation :	National and sub-national
	In Excel, use the following condition IF: IF Np^n_h f 50 give the value 1 IF NOT apply the formula (*): $$[dEx^{Np}] = \frac{Np^n_h}{1 - Np^n_h} \quad (*)$$

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8   Definitions of unemployment and youth age group differ across countries.

Table A.6: Life expectancy at 60

Indicator	Life expectancy at 60
Dimension:	A key form of inclusion in later stages of life deals with the ability of the elderly to remain socially integrated and live a decent life. In this regard, life expectancy at 60 may be a good proxy of their quality of life and a reflection of the social security provided to them by the State. The measurement of exclusion in this area is computed using national life expectancy at 60, as compared to the average life expectancy at 60 in lower middle-income countries.
Definition:	Average number of years that a person of that age can be expected to live, assuming that age-specific mortality levels remain constant. (WHO)
Formula :	$$dEx^{Le}] = \frac{Le_{60}^{Ref} - Le_{60}^{n}}{Le_{60}^{Ref}}$$ $[dEx^{Lr}]$: Degree of exclusion from surviving at old age Le_{60}^{Ref} : Reference value of life expectancy at 60 years Le_{60}^{n} : National average life expectancy at 60 years
Computation :	National level
	Applying the formula: $$dEx^{Le}] = \frac{Le_{60}^{Ref} - Le_{60}^{n}}{Le_{60}^{Ref}} \; (*)$$ In Excel, use the following condition IF IF $Le_{60}^{Ref} \; p \; Le_{60}^{n}$ give the value 0 IF NOT apply the formula (*):
	Sub-national level

Indicator	Life expectancy at 60

The methodology used here to determine not the scores of the Index, but the values of life expectancy at 60 at sub-national levels, is drawn from UNDP (2009)[9]. This method requires two sets of data:

(a) national life expectancy at 60 years of age, and

(b) the proportion of population that is above national life expectancy at 60 years of age.

Therefore, the computation entails the following:

- Determine the proportion of population aged 60 and older in a given year and for each subregion (for this, we will need demographic data disaggregated at sub-national level). We call this Xdi;

- Determine the median (m) of this proportion, for a given year.

Then, apply the following criteria:

- If Xdi > m, then Lei = Len*[1 + (Xdi / 100)]

- If Xdi < m, then Lei = Len*[1 - (Xdi / 100)]

- If Xdi= m, then Lei = Len

Once the life expectancy at 60 has been determined for each subregion, the formula for computing the Index for Indicator 6 at sub-national level is the following:

- We determine the maximum value of life expectancy at sub-national level, which becomes our new reference value, in a given year. It is called $Max\left(Le_{60}^{Sub}\right)$ and the new formula becomes:

$$[dEx^{Le}]_i = \frac{Max\left(Le_{60}^{Sub}\right) - Le_{60}^{Sub_i}}{Max(Le_{60}^{Sub_i})} \quad (*)$$

where $Max\left(Le_{60}^{Sub}\right) = Le_{60}^{SubRef}$ is the maximum reference value of life expectancy at 60 at the sub national level

and $Le_{60}^{Sub_i}$: are the sub-national estimates of life expectancy at 60 for each subregion i.

In Excel, use the following condition IF:

IF $Le_{60}^{SubRef} \text{ p } Le_{60}^{Sub_i}$, give the value 0

IF NOT, apply the formula (*).

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9   http://www.asia-pacific.undp.org/content/rbap/en/home/library/human_development/sub-national-hdi-bhutan-case.html.

Aggregation of the Index

In order to assess the overall degree of human exclusion throughout the life cycle, we aggregate the levels of exclusion in each of the six dimensions. Using a simple arithmetic sum, the overall level of exclusion can therefore be defined as:

$$HEx^v = dEx^{Nm} + dEx^{ChM} + dEx^{Lr} + dEx^{Yu} + dEx^{Np} + dEx^{Le}$$

As each indicator has a value ranging between 0 and 1, the overall score will take a value between $0 < |HEx^v| < 6$, reflecting the degree of exclusion of an individual throughout his or her life cycle. The total value of the Index will therefore represent an absolute value of exclusion, reflecting the likelihood of an individual to be excluded from the six dimensions of development described above. In the case of missing values in one of the dimensions, an expansion factor will be applied to facilitate the computation of the index. Missing information for two or more dimensions will not allow proper assessment of exclusion, hence the need to eliminate the country concerned from the exercise.

Estimations at sub-national levels and across time

The same conceptual and methodology frameworks can be applied to assess levels of exclusion at sub-national levels and over different periods of time. Data can be used at different tiers of government to estimate exclusion across subregions. The approach can also be used with longitudinal data sets to identify the drivers of exclusion across time and for each subregion. The outcomes of this exercise will provide critical information on the drivers of exclusion and the type of policies that have contributed to reduce or increase exclusion over time and across subregions.

Exclusion between subgroups of population

Similarly, the Index can be applied across gender as well as urban and rural settings. Maintaining the same decomposition in six dimensions, this method allows for a cross-sectional analysis of exclusion between groups, helping identify the gaps and the factors of exclusion for each subgroup of population, as described in the report.

Annex 2: Review of social development and exclusion indices

For a very long time, per capita GDP was used as the sole indicator of economic growth in most countries and regions in the world. In 1990, UNDP made a major breakthrough in the measurement of human development with the publication of its first Human Development Report (UNDP, 1990). The Human Development Index (HDI) was introduced on the assumption that economic growth, using traditional income-based measures such as GDP per capita, is not sufficient to reflect progress in human and social development. The Index comprises three main dimensions of well-being, namely, life expectancy at birth, educational attainment and real GDP per capita. UNDP has since refined some of these components and developed supplementary measures, such as the Gender-related Development Index and the Gender Empowerment Measure, which reflect the degree of gender equality and women's empowerment in development across countries.[10]

While the HDI has had much resonance in the development discourse over the years, some people believe that the HDI indicators are still too broad and that they fail to capture critical aspects of development, such as inequalities, vulnerability or environmental issues. Others have questioned the implications of arithmetically folding the three component indicators of the HDI into a single index, a method that presumably masks the trade-offs between the various components of the same index (Desai, 1991; McGillivray, 1991; Sen, 1993). However, the simplicity of the Index has been vital in positioning it as arguably the most popular development index globally.

At the Millennium Summit in 2000, global leaders made another breakthrough with the adoption of the Millennium Development Goals as a major global framework to help countries monitor and accelerate progress towards economic and social outcomes by the year 2015. Each of the eight internationally agreed goals includes a list of quantifiable and time-bound targets and indicators for monitoring progress in the areas of poverty (Goal 1), universal primary education (Goal 2), gender equality (Goal 3), child and maternal mortality, health and major diseases (Goals 4, 5 and 6), environmental sustainability (Goal 7) and global partnership for development (Goal 8). Since their adoption, the Goals have become one of the most important frameworks for development cooperation worldwide, catalysing efforts among all regions and countries and setting up the path for the development agenda beyond 2015.

A number of institutions and countries have developed and used a range of other tools and indicators to track specific social development outcomes:

- Economist Intelligence Unit (EIU, 2005) developed a "quality of life" index in 2005, based on a methodology that links the results of subjective life-satisfaction surveys to the objective determinants of the quality of life across 111 countries. The model comprises nine factors: health, material well-being, political stability and security, family relations, community life, climate change, job security, political freedom and gender equality - the first three being the most important according to their weights (EIU, 2006).

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10 Both introduced by UNDP in 1995, these two measures are considered to be "gender-sensitive extensions of the HDI". While the Gender-related Development Index takes into account existing gender gaps in the Human Development Index, the Gender Empowerment Measure is based on estimates of women's economic income, participation in high-paying positions and access to professional and parliamentary positions (Klasen, 2006).

- ILO decent work indicators (ILO, 2012) are based on 10 substantive elements of decent work, including equal opportunities at work, adequate earning, productive work, social security and social dialogue. Elements of social inclusion exist, but refer to the legal framework underpinning employment conditions and opportunities.

- OECD social indicators (OECD, 2011) have been recently developed to assess social progress among OECD countries in four broad policy areas, including self-sufficiency, equity, health status and social cohesion. The latter is particularly important in terms of exclusion, as it measures the extent to which people participate in their communities, or trust others. Equity includes the ability to access social services and economic opportunities, while self-sufficiency comprises indicators such as employment and student performance.

- European Union indicators of social inclusion (Atkinson and others, 2004) are a series of measures, clustered in five key dimensions, which measure poverty, inequality, employment, education and health outcomes among EU countries.

- Multidimensional Poverty Index (MPI, 2010)[11] was developed by the Oxford Poverty and Human Development Initiative and UNDP. It is a composite index based on a combination of income and non-income based measures, following an approach pioneered by Townsend (1979) and later by Sen (1985). It has been so far applied to 91 countries globally, and is being considered as one of the metrics in the application and monitoring of the new sustainable development goals and Agenda 2030.

Two additional indices are particularly important, as they have been developed specifically for Africa:

- Ibrahim Index of African Governance (Mo Ibrahim, 2012) measures African national governance against 88 criteria, divided into four overarching categories: (a) Safety and rule of law; (b) Participation and human rights; (c) Sustainable economic opportunity; and (d) Human development. The index aims to capture the quality of services provided to citizens by African governments.

- African Gender Development Index was developed by ECA as a multidimensional and region-specific tool to assess the status and progress towards gender equality and women's empowerment in Africa (ECA, 2012). The second phase of the Index – which was first piloted in 12 countries in 2009 – was carried out in 14 countries in 2012. The Index is based on a quantitative assessment of gender gaps in the social, economic and political spheres of life – through the Gender Status Index. The second component of the African Gender Development Index is the African Women's Progress Scoreboard, which provides a qualitative evaluation of governments' efforts to implement global and regional commitments affecting women and their rights.

Despite the wide array of development indicators available, the approach used in the ASDI is novel, insofar as it seeks to capture the impacts of exclusion throughout the life cycle, assessing the effects of being excluded from early childhood to old age in six key dimensions of development. Its computation across time and for different subgroups, both at the national and sub-national levels, makes it possible to capture inequalities within and between countries and groups of population.

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11   http://hdr.undp.org/en/content/multidimensional-poverty-index-mpi.