

**HANDBOOK OF THE LDC CATEGORY  
(CHAPTERS I & III)**

**Expert Group Meeting on the Refining the Criteria for the Identification of  
Least Developed Countries**

**New York, 26-27 November 2013**

# Chapter 1

## Criteria and procedures for inclusion in and graduation from the least developed country category

### The establishment of the least developed country category and the role of the Committee for Development Policy

The least developed country (LDC) category comprises low-income developing countries which face severe structural impediments to growth. Indicators of such impediments are the high vulnerability of the countries' economies and their low level of human capital. An appreciation of the origins and evolution of the category is important in gaining a better understanding of the concerns that led to its creation. It will also contribute to a better understanding of the particular problems faced by this group of countries and the responses developed by the international community to confront the specific challenges of the LDCs.

#### *Background*

The development of the LDC category has a history dating back to 1964, when its establishment was advocated by developed countries at the first session of the United Nations Conference on Trade and Development (UNCTAD I), held in Geneva. It was presented as an alternative to the idea of a single system of trade preferences for all developing countries. UNCTAD member States agreed to pay “special attention” to what at the time were called the less developed among the developing countries (General Principle Fifteen<sup>1</sup>).

<sup>1</sup> UNCTAD I recommended 15 “General Principles” (and 13 “Special Principles”) for governing international trade relations and trade policies conducive to development. General Principle Fifteen states that “(T)he adoption of international policies and measures for the economic development of the developing countries shall take into account the individual characteristics and different stages of development of the developing countries, special attention being paid to the less developed among them, as an effective means of ensuring sustained growth with equitable opportunity for each developing country” (see Final Act and Report of the United Nations Conference on Trade and Development (Geneva, 1964), Annex A.I.1, United Nations publication, Sales No. 64.II.B.11).

It was not until the second session of UNCTAD (UNCTAD II), held in New Delhi in 1968, that the question of the LDC category was examined in detail. Member States accepted by consensus the idea of an LDC category that would focus on special measures for the most disadvantaged economies. UNCTAD II requested the secretariat of UNCTAD to conceptualize such special measures with regard to all issues within its purview, to pursue its work in identifying the LDCs and to examine various possible approaches to the question of identification.

In 1969, the General Assembly, following up on several pertinent resolutions of the Trade and Development Board (TDB)—the governing body of UNCTAD—acknowledged the need to alleviate the problems of underdevelopment of the LDCs so as to enable them to draw full benefits from the Second United Nations Development Decade.<sup>2</sup> In this context, the Assembly requested the Secretary-General, in consultation with, among others, the Committee for Development Planning (see box I.1), to carry out a comprehensive examination of

#### Box I.1

#### **The Committee for Development Policy**

The Committee for Development Planning was established by Economic and Social Council resolution 1079 (XXXIX) of 28 July 1965 as a subsidiary body of the Council. The aim was to have Committee members share their experiences in development planning and make those experiences available to the United Nations for its use in the formulation and execution of development plans and projections.

Its original terms of reference were modified on 31 July 1998 pursuant to annex I of Council resolution 1998/46, and the Committee was renamed the Committee for Development Policy (CDP). Currently, the Committee provides inputs and independent advice to the Council on emerging cross-sectoral development issues and on international cooperation for development, focusing on medium- and long-term aspects.

The Committee is also responsible for undertaking, once every three years, a review of the list of the least developed countries (LDCs), on the basis of which it advises the Council regarding countries which should be added to the list and those that could be graduated from it.

The annual meeting of the Committee usually takes place in March or April of each year and lasts five working days. During this period, the Committee discusses the agreed topics and drafts its report on the basis of inputs from members. The report is submitted to the Council at its substantive session in July and is also disseminated among the development community.

<sup>2</sup> General Assembly resolution 2564 (XXIV) of 13 December 1969.

the special problems of the LDCs and to recommend special measures for dealing with those problems. At its sixth session in January 1970, the Committee formed a working group to define the methodology for identifying LDCs and to reflect upon special measures for countries so classified.

Subsequently, in December 1970, the General Assembly took the view that the formal identification of LDCs was an urgent matter and invited the Economic and Social Council, the TDB and other relevant bodies to deal with the issue on a priority basis.<sup>3</sup>

In its analysis of the matter, the Committee emphasized that, while developing countries as a group were facing similar problems of underdevelopment, the difference between the poorest and the relatively more advanced among them was quite substantial. The LDCs could not always be expected to benefit fully or automatically from the measures adopted in favour of all developing countries.

LDCs were understood to be those low-income countries facing severe structural handicaps to growth. Thus, the initial criteria for designating a country least developed were a low per capita gross domestic product (GDP) and the presence of structural impediments to growth.

The presence of such impediments was at the time perceived to be reflected in a small share of manufacturing in total GDP (inasmuch as a high degree of industrialization was seen to be the structural characteristic of developed or “advanced” countries), as well as in a low literacy rate (which would be an indication of a country’s low level of human capital development).

Based on these criteria, at its seventh session in 1971, the Committee proposed a tentative list of 25 LDCs<sup>4</sup> and recommended that it be reviewed again in 1975. The Committee’s list was approved by both the Council in its resolution 1628 (LI) of 30 July 1971 and by the General Assembly in its resolution 2768 (XXVI) of 18 November 1971.

Since that time, the eligibility criteria for LDCs have been refined and have evolved into the following three types (see chapter III for further details):

- Gross national income (GNI) per capita;
- A human assets index (HAI);
- An economic vulnerability index (EVI).

<sup>3</sup> General Assembly resolution 2724 (XXV) of 15 December 1970.

<sup>4</sup> Despite the tentative nature of the list, the Committee stressed its belief in the list’s validity and noted that “by any set of classification criteria the countries included in this list would surely be considered as least developed”. See the report of the Committee for Development Planning on its seventh session (22 March-1 April 1971), *Official Records of the Economic and Social Council, Fifty-first session, 1971, Supplement No.7*, para. 69.

In addition, the Committee determined in 1991 that countries with a population exceeding 75 million should not be considered for inclusion in the list of LDCs.

## Principles and approaches underlying the criteria for the identification of least developed countries

The process of categorizing countries as least developed involves specifying the particular characteristics that define LDCs, selecting indicators that best capture such characteristics—and therefore compose the criteria of identification—and applying the criteria. The principles and approaches that guide the Committee in this task are as follows: maintaining the stability of the criteria, using an asymmetric approach between inclusion and graduation criteria, ensuring equitable treatment of countries over time, and applying the criteria in a flexible manner.

As discussed above, the main characteristics of LDCs, as understood by the Committee, imply that indicators composing the criteria used to identify countries belonging to the category should be a **measurement of long-term structural weaknesses**. In its choice of statistical indicators, the Committee attempts to identify those that most closely reflect or capture the features that are of relevance for the classification of an LDC. It also takes into account the robustness of the methodologies underlying the production of such data and their availability. The Committee has taken all the necessary steps to ensure that the criteria are based on the best available methods and information, and has put considerable effort into developing a consistent set of criteria throughout the years.

Notwithstanding the foregoing, the Committee recognized in 1971 that in some instances indicators were “neither wholly reliable, nor sufficient in themselves to provide a complete picture” and that the introduction of refinements “with respect to all countries which are candidates for classification as least developed, must await further statistical development and research”.<sup>5</sup>

The Committee has therefore taken the view that occasional refinements may be introduced into the criteria to take into account new insights from research on economic development, updated information regarding the structural impediments to development and ongoing improvements in, and the availability

<sup>5</sup> Ibid., para. 68.

of, reliable and internationally comparable data. Accordingly, as data availability on development indicators for developing countries continued to advance, a number of improvements have been introduced into the criteria since 1971. However, the underlying principle of identifying LDCs as “low-income countries that face structural handicaps to growth” has essentially remained.

The Committee has furthermore always stressed the importance of maintaining **stability in the criteria** and in the application of the established procedures so as to ensure the credibility of the process and, consequently, of the list itself. In this regard, the Committee, in establishing which indicators to use, selected those that proved to be sufficiently stable over time to minimize the likelihood of easy reversibility of status from LDC to non-LDC and vice versa owing to dramatic fluctuations in any single criterion.

With the establishment of graduation rules in 1991, additional principles were adopted to ensure that graduation takes place only after a country’s development prospects have significantly improved and the graduated country can sustain its development path. There is, therefore, an intentional **asymmetry between the inclusion and graduation criteria** (see table I.1), which can be summarized as follows:

- Thresholds for graduation are established at a higher level than those for inclusion (see chapter III for further discussion);

Table I.1

**Asymmetries between the inclusion and graduation processes**

	<i>INCLUSION</i>	<i>GRADUATION</i>
<b>Criteria:</b>		
Number of criteria to be met	Three	Two <sup>a</sup>
Threshold of criteria	Established at each review	Higher than inclusion
Population threshold	Smaller than 75 million	Not relevant
<b>Eligibility</b>	Determined once	Determined twice (over consecutive reviews)
<b>Timing</b>	Effective immediately	Preparatory period (three years)
<b>Approval by country</b>	Required	Not required

<sup>a</sup> Except in cases where GNI per capita is at least twice the graduation threshold level.

- In order to be eligible for graduation, a country must cease to meet not just one, but two out of the three inclusion criteria. (If the criteria were applied symmetrically, ceasing to meet one single criterion would be enough for a country to be considered eligible for graduation.);
- Eligibility for inclusion is ascertained once, whereas eligibility for graduation has to be observed over two consecutive triennial reviews;
- Inclusion is immediate, while graduation takes place only after three years, in order to give the country time to prepare itself for a smooth transition from the list (see below for further details);
- Inclusion requires approval from the country concerned, whereas graduation does not (see table I.1).

The Committee pays due consideration to ensuring **equal treatment** of countries over time. This implies that countries in a similar position vis-à-vis the criteria from one review to the other should be treated equally.

**Flexibility** is another guiding principle in the application of the criteria. The Committee believes that the criteria should not be used mechanically, particularly in situations where country indicators are very close to the inclusion or graduation thresholds (referred to as “borderline cases”). In these cases, a combination of the structural handicap criteria (as captured by the HAI and the EVI) could be applied in order to take into account some degree of substitutability among the criteria and the possible combined impact of the structural handicaps.<sup>6</sup> In this regard, the Committee opposes the view that the fulfilment of both structural handicap criteria be made compulsory for graduation. For instance, a high EVI does not *in itself* prevent a country from achieving a steady development path, as evidenced in the case of countries with a high EVI that nonetheless sustain and increase GNI per capita and maintain high levels of HAI.

In addition, the Committee may consider a country eligible for graduation if its GNI increases to a sufficiently high level—defined as at least twice the graduation threshold level—even if that country has not satisfied the graduation thresholds for both the HAI and the EVI. Higher levels of GNI per capita often indicate greater availability of resources for the implementation of those policies

<sup>6</sup> See the report of the Committee for Development Policy on the tenth session (17-20 March 2008), *Official Records of the Economic and Social Council, 2008, Supplement No. 13 (E/2008/33)*, chapter IV, para. 26.

required to improve a country's human assets and confront existing economic vulnerabilities. The Committee stresses, however, that the sustainability of the GNI level must be taken into consideration.<sup>7</sup> This approach was applied to Equatorial Guinea, which at the 2006 review had a GNI per capita of about \$3,400—the highest among the LDCs, and almost four times the graduation threshold (see chapter III, figure III.1)—thus placing it among the higher middle-income group of countries. Equatorial Guinea was therefore found eligible for graduation on account of its per capita GNI, despite the fact that it met neither the HAI nor the EVI thresholds for graduation.<sup>8</sup>

## Inclusion, graduation and smooth transition

### *Triennial review*

The Committee for Development Policy (CDP) is responsible for undertaking, once every three years, a review of the list of LDCs, on the basis of which it advises the Economic and Social Council with regard to countries that should be added to or those that could be graduated from the list.

The triennial review of the list of the LDCs begins with an analysis of the economic and social conditions in all low-income countries by an expert group meeting consisting of CDP members. The group of experts reviews the most recent available data and the preliminary results of the application of the criteria. Subsequently, it prepares a preliminary list of countries identified for inclusion and graduation for review by the Committee at its relevant annual plenary meeting.

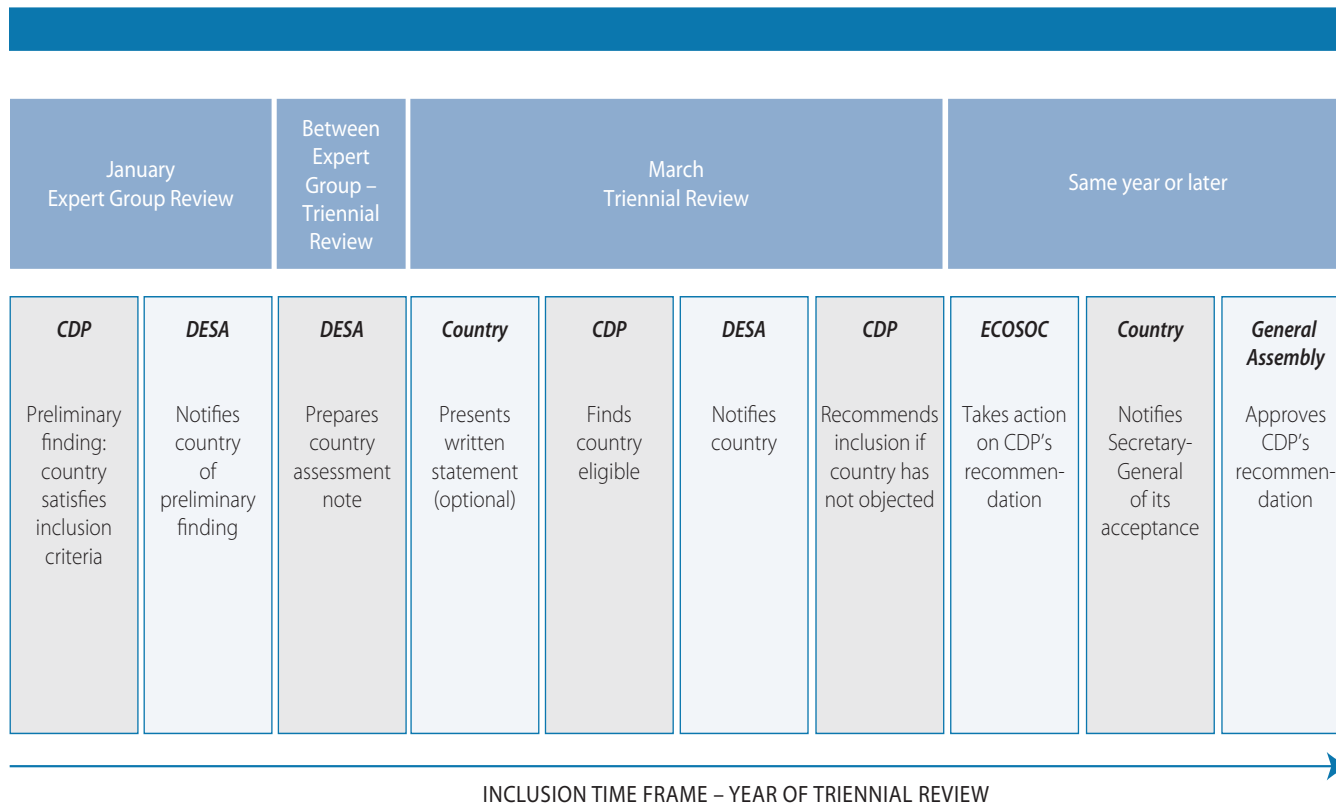
The Committee will determine threshold levels for each of the three criteria with a view to identifying the countries to be added to or graduated from the LDC category (see chapter III for details). As mentioned above, to be added to the category, a country must satisfy the inclusion threshold levels in respect of all three criteria. A country will be eligible for graduation when it no longer meets the

<sup>7</sup> See the report of the Committee for Development Policy on the seventh session (14–18 March 2005), *Official Records of the Economic and Social Council, 2005, Supplement No. 33 (E/2005/33)*, para. 14.

<sup>8</sup> The Committee also noted that the level of the HAI in Equatorial Guinea had improved since the previous review, becoming closer to the graduation threshold: 56 for a graduation threshold of 64 in 2006, compared to 47 for a graduation threshold of 61 in 2003. See the report of the Committee for Development Policy on the eighth session (20–24 March 2006), *Official Records of the Economic and Social Council, 2006, Supplement No. 13 (E/2006/33)*.



Figure I.1  
Inclusion time frame



Source: Report of the Committee for Development Policy on the ninth session, *op. cit.*

graduation thresholds for two of the criteria, or when its GNI per capita exceeds at least twice the graduation threshold and the likelihood that the level will remain sustainable is deemed high. Inclusion to and graduation from the list of the LDCs take place in accordance with the guidelines recommended by the CDP in the report on its ninth session in 2007,<sup>9</sup> which were endorsed by the Economic and Social Council.<sup>10</sup> Procedures regarding the graduation process are also described in General Assembly resolution 59/209 of 20 December 2004 (see annex 1). These guidelines and procedures are reviewed in the sections below.

### ***Procedures for inclusion in the list of least developed countries***

After the expert group meeting has identified a country for inclusion in the list, the United Nations Department of Economic and Social Affairs (DESA) notifies the Government of that country of this conclusion and informs it that the finding will be considered by the Committee at its forthcoming triennial review. DESA will subsequently prepare a **country assessment note** for presentation to the Committee (see figure I.1).

The **country assessment note** will corroborate the basis of the group's finding of eligibility by means of statistical evidence and will incorporate other relevant information. Particular consideration will be given to the reasons for the recent deterioration of economic and social conditions in the country in order to determine whether that deterioration is due to structural or transitory factors.

On receipt of the assessment note, the country may submit a written statement to the CDP, expressing its views on its possible inclusion in the list, including any objections to such inclusion.

If the Committee, at its triennial review, confirms the country's eligibility for inclusion, DESA will once again notify the country of this finding. If the country does not express a formal objection to inclusion in the list, the Committee will make an appropriate recommendation in its report to the Council. If the country has expressed a formal objection to DESA, the finding of eligibility as well as the country's objection will be recorded in the report and no recommendation for inclusion will be made.

<sup>9</sup> Report of the Committee for Development Policy on the ninth session (19-23 March 2007), *Official Records of the Economic and Social Council, 2007, Supplement No. 33* (E/2007/33).

<sup>10</sup> Economic and Social Council resolution 2007/34 of 27 July 2007.

Once the Council endorses the recommendation for inclusion—and after the country has subsequently notified the Secretary-General of its acceptance—the country will be formally added to the list as soon as the General Assembly has taken note of the recommendation.

### *Countries included in the list of the least developed countries*

Over the 35 years since the establishment of the category, the number of least developed countries has doubled, from 25 in 1971 to 49 in 2008 (see figure I.2).

Three countries—Ghana, Papua New Guinea and Zimbabwe—were considered by the CDP to be eligible for LDC status, but declined to be included in the list. They either questioned the validity or accuracy of the data presented by the CDP, arguing that the indicators had not captured the relevant aspects of their respective economies, or they emphasized an improvement in the socio-economic conditions of the country since the time of the CDP recommendation.

### ***Procedures for graduation and smooth transition***


















With regard to meeting the criteria for graduation, each LDC is considered by the CDP in its triennial review. In its report, the Committee will notify the Council of *all* LDCs that meet the graduation criteria, and those countries that are confirmed eligible for the second consecutive time are recommended for graduation.

As in the inclusion process, DESA will inform the country concerned of the findings of eligibility for graduation after the first review (see figure I.3). Subsequently, UNCTAD will prepare a **vulnerability profile** of that country.<sup>11</sup>

The vulnerability profile aims at giving an overall background of the country's economic and development situation. In addition, it will compare the values of the indicators used in the CDP criteria with relevant national statistics. It will further assess other vulnerabilities that the country is facing which are not covered by the EVI, as well as other structural features of the country that are of relevance for the graduation decision (e.g., possible concentration of export of services, high transportation costs due to geographic dispersion in the case of archipelago countries, current impacts of climate change).

<sup>11</sup> The concept of a vulnerability profile was defined by the Committee in 1999. See the report of the Committee for Development Policy on the first session (26-30 April 1999), *Official Records of the Economic and Social Council, 1999, Supplement No. 13 (E/1999/33)*, chapter III, section F.

Figure I.2  
LDC category timeline as of July 2008

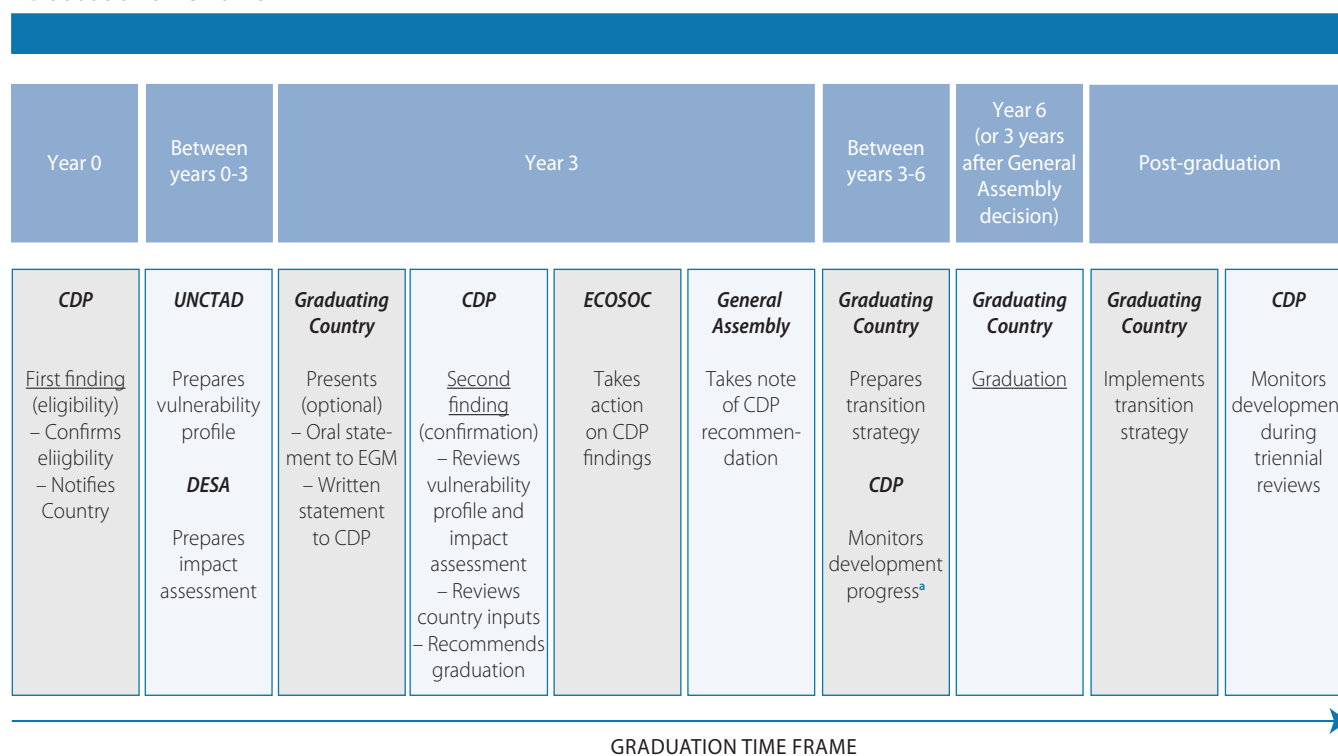
<b>2011</b>		<b><i>Maldives</i></b>
<b>2010</b>		<b><i>Samoa</i></b>
<b>2007</b>		<b>Cape Verde</b>
<b>2003</b>		Timor-Leste
<b>2000</b>		Senegal
<b>1994</b>		<b>Botswana</b>
		Angola, Eritrea
<b>1991</b>		Cambodia, Democratic Republic of the Congo, Madagascar, Solomon Islands, Zambia
<b>1990</b>		Liberia
<b>1988</b>		Mozambique
<b>1987</b>		Myanmar
<b>1986</b>		Kiribati, Mauritania, Tuvalu
<b>1985</b>		Vanuatu
<b>1982</b>		Djibouti, Equatorial Guinea, Sao Tome and Principe, Sierra Leone, Togo
<b>1977</b>		<b>Cape Verde</b> , Comoros
<b>1975</b>		Bangladesh, Central African Republic, Gambia
<b>1971</b>		Afghanistan, Benin, Bhutan, <b>Botswana</b> , Burkina Faso, Burundi, Chad, Ethiopia, Guinea, Haiti, Lao People's Democratic Republic, Lesotho, Malawi, Maldives, Mali, Nepal, Niger, Rwanda, Samoa, Sikkim, <sup>a</sup> Somalia, Sudan, Uganda, United Republic of Tanzania, Yemen

Source: Report of the Committee for Development Policy, various issues.

Note: Countries in bold have already graduated from the list; those in bold italics are scheduled for graduation.

<sup>a</sup> At the time, a protectorate of India.

Figure I.3  
Graduation time frame



Source: Report of the Committee for Development Policy on the ninth session, op. cit.

<sup>a</sup> Pursuant to Economic and Social Council resolution 2008/12 of 23 July 2008.

The vulnerability profile is not the only complementary information to be made available for the CDP. DESA will prepare, in cooperation with UNCTAD, an **ex ante impact assessment** of the likely consequences of graduation for the country's economic growth and development. In other words, the report will identify those potential risk factors, or gains, that the country may face after graduation. On the assumption that DESA can draw on the full cooperation of the country concerned as well as its development partners, the impact assessment will focus on the expected implications of a loss of LDC status, in particular with regard to development financing, international trade and technical assistance.

Countries that have been found eligible for the first time will be provided with the vulnerability profile and the ex ante impact assessment in the year prior to the next triennial review. These countries will then be given an opportunity to make an oral presentation at the expert group meeting that precedes that triennial review. Countries may also submit a written statement to the plenary of the Committee.

When a country meets the graduation criteria for the second consecutive time, the Committee—after considering all relevant quantitative and qualitative information at its disposal—may recommend the country for graduation in its report to the Council. If the Council endorses the recommendation, graduation will take effect three years after the General Assembly takes note of the recommendation. For example, in the case of Cape Verde, the General Assembly took note of the recommendation for graduation on 20 December 2004; consequently, the country's graduation became effective on 20 December 2007.

During the three-year period before graduation takes effect, the country concerned may prepare a **transition strategy** in cooperation with its development partners. This strategy—to be implemented after the country has officially graduated—aims at ensuring that the phasing out of support measures resulting from its change of status will not disrupt the country's continued development efforts in the spirit of General Assembly resolution 59/209. Moreover, in accordance with Economic and Social Council resolution 2008/12 of 23 July 2008, the Committee will monitor the development progress of those countries whose graduation has not become effective and include its findings in its annual report to the Council.

General Assembly resolution 59/209 states that the CDP will continue to monitor the development progress in countries that graduate. Guidelines on

how to monitor such progress were established in 2008.<sup>12</sup> The main purpose of the monitoring provision is to identify any signs of reversal in the development progress of the country concerned during the post-graduation period and bring them to the attention of the Council as early as possible. The monitoring will be carried out by DESA on the basis of an evaluation of a relatively small set of variables beyond the country's performance under the CDP criteria. The findings of this exercise will be summarized in a short report to the CDP. The Committee will report to the Council on the findings of the monitoring exercise as a complement to the triennial review of the list of LDCs.

### ***Countries graduating from the list of the least developed countries***

Botswana was considered eligible for graduation in 1991 and again in 1994, when its graduation became effective. In 2004, the Council endorsed the Committee's recommendation that Cape Verde and the Maldives be graduated from the LDC category and recommended that the General Assembly take note of the recommendation.<sup>13</sup> The graduation of both countries would normally have become effective in December 2007.<sup>14</sup> However, in November 2005, the General Assembly—in view of the damage caused to the Maldives by the Indian Ocean tsunami of 26 December 2004—decided to defer the country's graduation by three years. Thus, the Maldives is anticipated to graduate in January 2011 (see figure I.2 above).<sup>15</sup>

In 2006, the Committee recommended that Samoa be graduated from the list.<sup>16</sup> In July 2007, the Council endorsed the recommendation and transmitted its decision to the General Assembly.<sup>17</sup> On 17 December 2010, three years following the resolution of the General Assembly on the graduation of Samoa,<sup>18</sup> graduation will become effective for that country.

<sup>12</sup> Report of the Committee for Development Policy on the tenth session, op. cit.

<sup>13</sup> Economic and Social Council resolution 2004/67 of 5 November 2006.

<sup>14</sup> Economic and Social Council resolution 2004/66 of 5 November 2006 and General Assembly resolutions 59/209 and 59/210 of 20 December 2004.

<sup>15</sup> General Assembly resolution 60/33 of 30 November 2005.

<sup>16</sup> Report of the Committee for Development Policy on the eighth session, op. cit.

<sup>17</sup> Economic and Social Council resolution 2007/35 of 27 July 2007.

<sup>18</sup> General Assembly resolution 62/97 of 17 December 2007.

## Chapter III

# Methodology and statistical indicators

This chapter presents a description of the variables and methodology employed to calculate indicators and composite indices that are used to designate low-income countries as least developed. As discussed in chapter I, the Committee for Development Policy (CDP) defines the category of the least developed countries (LDCs) as comprising those low-income countries suffering from structural handicaps to economic development. These handicaps are manifested in a low level of human resource development and a high level of structural economic vulnerability. Currently, the identification of LDCs depends on predetermined threshold values of three main criteria that identify the structural handicaps:

- (a) Gross national income (GNI) per capita;
- (b) The human assets index (HAI);
- (c) The economic vulnerability index (EVI).

At its twenty-seventh session in 1991, the Committee for Development Planning decided that, in addition to these three criteria, low-income countries with a population of more than 75 million were not eligible to be considered for inclusion in the list of LDCs.<sup>1</sup> In the Committee's view, countries with larger populations often have an advantage in terms of the potential supply of human capital, besides offering potentially larger domestic markets. The population cap, however, is not a consideration applied to countries that were included in the list prior to 1991 or to those whose population exceeded 75 million after joining the category.<sup>2</sup>

Both the HAI and the EVI are constructed as composite indices of selected indicators. Indicators are proxies for the phenomena to be measured and assessed. Some indicators may capture what they are supposed to measure better

<sup>1</sup> See report of the Committee for Development Planning on the twenty-seventh session (22-26 April 1991), *Official Records of the Economic and Social Council, 1991, Supplement No. 11 (E/1991/32)*.

<sup>2</sup> In addition to being a condition that determines a country's eligibility for least developed status, population size is also a component of the EVI.



than others, primarily for reasons of data availability. In addition, as stated in paragraph 227 of the report of the Committee on its twenty-seventh session, “[i]ndicators should be robust so as to minimize the likelihood of easy reversibility from least developed to non-least developed status and vice-versa, as a result of dramatic fluctuations in one or another single indicator, and should introduce a dynamic element that would serve as a reliable basis for deciding whether countries should be added to, or removed from, the list of least developed countries”.<sup>3</sup>

In selecting the specific indicators to be included in the indices that compose the criteria, the Committee meticulously considers the quality and relevance of the pertinent data, the robustness of its underlying methodology with respect to data collection and treatment, and the availability of the data with regard to frequency and coverage. Furthermore, in this selection process, the Committee consults with the relevant international organizations and agencies that produce data, thereby allowing a careful assessment of the quality and reliability of the indicators employed. Additionally, the data compilation methods are reviewed regularly by an expert group of the CDP.

A database with the relevant statistical information is made available to the Committee at each triennial review. The methods and techniques used to compile the relevant data and construct the composite indices are described below. Data sources and definitions are available in annex IV. Updated information will be posted at <http://www.un.org/esa/policy/devplan> as it becomes available.

## Applying the criteria: the 2006 triennial review

### *Countries included in the review of least developed country status*

The countries to which the above criteria are applied comprise those classified as LDCs at the time of the review (even if no longer a low-income country) as well as other developing countries classified by the World Bank as low-income countries in any one year of the relevant three-year reference period considered at the triennial review.

In the case of the 2006 review, the World Bank thresholds for low-income countries were \$755 (2000), \$745 (2001) and \$735 (2002), which corresponded, respectively, to the World Bank’s assessment in years 2002-2004 and the classification used in the Bank’s corresponding fiscal years. Income data were

<sup>3</sup> Official Records of the Economic and Social Council, 1991, op. cit.

collected for 132 developing countries. Of these, 65 were retained for further review (50 already in the LDC category in 2006 and 15 low-income countries not previously classified as least developed).

Low-income countries whose populations are above 75 million are not eligible for inclusion in the list of LDCs. As mentioned above, the population cut-off does not apply to countries that were on the list in 1991 when this rule was introduced. Thus, Bangladesh and Ethiopia—both LDCs which did not meet the graduation criteria—remained on the list after the 2006 review, while other low-income countries with populations greater than 75 million (India, Indonesia, Nigeria, Pakistan and Viet Nam) were not considered eligible for inclusion in the LDC category, although they were still included in the review for establishing the relevant thresholds (see below).

## Indicators, data sources and methods

### *Gross national income per capita*

GNI per capita can provide an indication of the income position of a country vis-à-vis other developing countries (since LDCs are understood to be low-income countries suffering from structural impediments to development). It also gives a rough idea of the productive capacity of an economy and its ability to provide requisite services.

The CDP uses GNI per capita expressed in current United States dollars, calculated according to the World Bank Atlas method, which is defined in such a way as to reduce the effects of short-term fluctuations in inflation and real exchange rates on GNI (see box III.I). The Committee does not adopt a dollar-valued measure of GNI based on purchasing power parity (PPP) estimates, as for many low-income countries published PPP estimates are not based on any direct statistical observations, and for countries with direct estimates, these often are not adequately updated.

### *GNI inclusion and graduation thresholds*

The threshold for *inclusion* is based on a three-year average of the level of GNI per capita, which the World Bank defines for identifying low-income countries. The threshold for *graduation* is set at a higher level. For the 2006 triennial review, the threshold for graduation was \$900, about 20 per cent above the \$745 threshold

## Box III.1

**The Atlas method**

The Atlas method defines the conversion factor for translating data in national currency units into United States dollars as the average of the current nominal exchange rate and the weighted average of exchange rates in the previous two periods adjusted for the difference between the rate of inflation in the country (measured in terms of its GDP deflator) and the international inflation rate (measured by the change in the special drawing right (SDR) deflator). The latter reflects the change in the GDP deflator of those economies whose currencies constitute the SDR, the weights being the amount of each country's currency in one unit of SDR. These economies are France, Germany, Japan, the United Kingdom of Great Britain and Northern Ireland and the United States of America through 2000, and the euro zone, Japan, the United Kingdom and the United States from 2001 onwards.

The formula used to calculate the Atlas Conversion Factor for year  $t$  can be written as follows:

$$e_t^* = \frac{1}{3} \left[ e_{t-2} \left( \frac{p_t}{p_{t-2}} \div \frac{p^{s\$}_t}{p^{s\$}_{t-2}} \right) + e_{t-1} \left( \frac{p_t}{p_{t-1}} \div \frac{p^{s\$}_t}{p^{s\$}_{t-1}} \right) + e_t \right]$$

where:

$e_t$  is the average annual exchange rate for year  $t$  (the value of national currency expressed in United States dollars)

$p_t$  is the GDP deflator for year  $t$ , and

$p^{s\$}_t$  is the SDR deflator in United States dollar terms for year  $t$ .

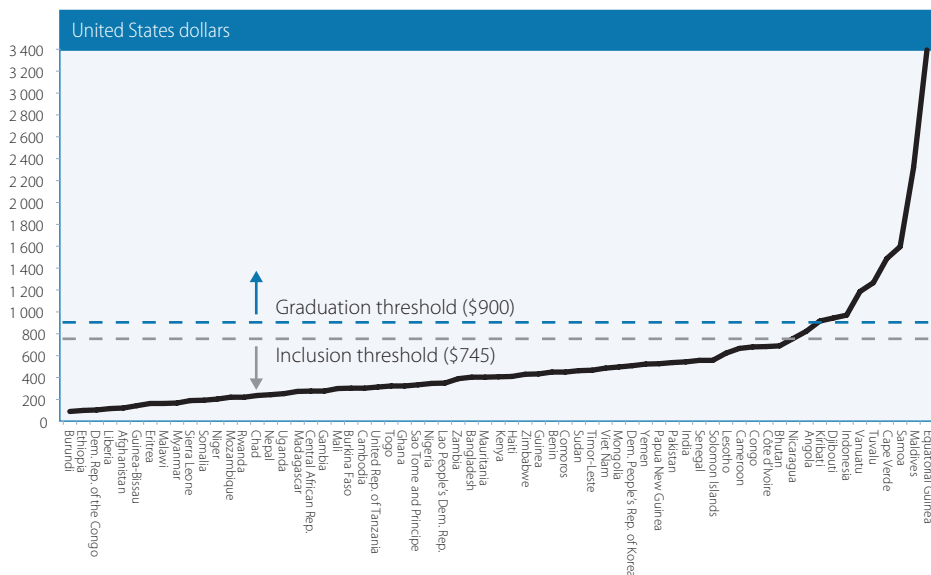
Additional details on the concept, methodology and results of the World Bank Atlas method are available from <http://go.worldbank.org/HZIRZKLIC0>.

**Source:** World Bank, available from <http://go.worldbank.org/HZIRZKLIC0> (accessed on 25 August 2008).

for inclusion (see figure III.I). This margin is admittedly arbitrary, but one which the CDP judged large enough to allow for possible short-term income fluctuations in GNI owing to exogenous and temporary shocks or short-term exchange-rate shifts, thereby avoiding the likelihood of a country's having to be reconsidered for inclusion shortly after its graduation.

As mentioned in chapter I, a level of GNI per capita that is at least twice the graduation threshold makes a country eligible for graduation even if the country does not meet either one of the two other criteria (EVI or HAI). For

Figure III.1  
**Average gross national income per capita, 2006 triennial review**



**Source:** Annex table A.1. (Updates will be made available at <http://www.un.org/esa/policy/devplan>.)

instance, Equatorial Guinea was found eligible for graduation for the first time in 2006 owing to its relatively high GNI per capita of about \$3,400, the highest among LDCs (see figure III.I).

### Calculating the composite indices: the human assets index and the economic vulnerability index

Both the HAI and the EVI are relative indicators. They reflect averages of component indices (see sections on the HAI and EVI below) measured from 0 to 100 and based on minimum and maximum values in a set of reference countries. This reference set is composed of a larger sample of 132 developing countries and not only of the countries under review (65 in the case of the 2006 review). Values are ranked in order of magnitude. In order to prevent the presence of outliers in the reference set from influencing the HAI and the EVI (these being relative indices), bounds are imposed, thus allowing for better comparison of values in the distribution. Values are then converted into indices using the procedure described in box III.2.

## Box III.2

**Methodology applied in the calculation of the HAI and the EVI**

The following technique is used to develop smooth index number series to facilitate aggregation and comparison of data from different sources: the original data is transformed into indices ranging from 0 to 100, based on minimum and maximum values in a set of reference countries. A similar methodology is applied for the Human Development Index of the United Nations Development Programme (UNDP).

The scaling between minimum and maximum values, however, raises the question of possible distortions arising in cases where distributions are skewed or have long tails. In these cases, the ranking of countries could be unduly bunched and would obscure the extent of the differences among the majority of countries. Therefore, to minimize these problems, bounds are imposed on the extreme outliers to allow for better comparison of values in the distribution. The bounds are numbers used to define the low and high end of the distribution of the index number series before application of the "max-min" procedure. Accordingly, the bounds replace the actual country data in the calculation of the index concerned. For instance, in the case of population, a minimum bound of 150,000 persons and a maximum bound of 100,000,000 persons were imposed on countries with populations below or above those levels, respectively, in the 2006 review (see table below). Thus, countries with populations smaller than the lower bound had the value of that variable replaced by 150,000, while 100,000,000 was used for those countries with populations above the upper bound.

**Bounds used in the 2006 triennial review**

<i>Index/Variable</i>	<i>Upper bound</i>	<i>Lower bound</i>
<b>HAI</b>		
Prevalence of undernourishment in the population (percentage)	65.000	2.500
Under-five mortality (per 1,000 live births)	240.000	10.000
Literacy rate (percentage)	99.800	15.000
Secondary enrolment rate (percentage)	100.000	5.700
<b>EVI</b>		
Population (millions)	100.000	0.150
Remoteness (index)	0.900	0.100
Merchandise export concentration (index)	0.950	0.100
Share of agriculture, forestry and fisheries in GDP (percentage)	60.000	0.000
Homelessness due to natural disasters (percentage)	0.002	20.340
Instability of agricultural production (index)	20.000	1.500
Instability of exports of goods and services (index)	35.000	3.000

Source: UN/DESA.

**Box III.2** (cont'd)

The index numbers are derived by subtracting the minimum value in the distribution from each observed value in the series and expressing the result as a percentage of the difference between the maximum (max) and minimum (min) values in the distribution as indicated by the following formula:

$$I = [(V - \min) / (\max - \min)] \times 100$$

where:

V is the observed value in the series, and

I is the new, rescaled, index-number representation with a value ranging from 0 to 100.

The indices are defined in such a way that the higher the value of the component variables of the HAI, the better the human assets score (and vice versa). In contrast, higher values of the EVI components indicate the presence of increased vulnerability (and vice versa).

Some adjustment in the formula is needed in the case of certain components. For instance, if the max-min procedure described above were applied to such variables as under-five mortality and population, the procedure would generate indices whose values would be the opposite of what they were supposed to reflect in the HAI and EVI indicators. A higher index value for under-five mortality (one of the component variables in the HAI) should contribute to a lower HAI score since this would indicate, *ceteris paribus*, the existence of lower human assets in that country. Thus, if unadjusted, countries with high child mortality rates would yield relatively high index number values and high HAI scores (indicating a high level of human assets). Similarly, countries with large populations (a proxy for economic size) would yield high index number values and high EVI scores (indicating high vulnerability), which is not the case, as countries with larger populations usually have relatively greater resilience to shocks. In such cases, the following variant of the max-min procedure is used:

$$II = [(\max - V) / (\max - \min)] \times 100, \text{ or}$$

$$II = 100 - I$$

where:

V is the observed value in the series, and

II is the rescaled index number representation with values ranging from 0 to 100.

Redefining the relevant components in this manner now gives the desired result of countries with the highest child mortality rates having relatively lower index numbers and lower HAI scores. Similarly, countries with larger populations would have lower index values and lower EVI scores.

Despite the fact that upper and lower limit values are based on a larger reference set, it is important to stress that the objective of the exercise is to identify low-income countries with structural handicaps to development. Thus, thresholds for inclusion and graduation are determined on the basis of the HAI and EVI values calculated for countries under review only, that is to say, low-income countries and any other countries that, although no longer low income, are still on the LDC list. In the case of the 2006 review, this implies that thresholds were determined based on the value of indicators for 65 countries, 8 of which were no longer low-income countries but were still on the LDC list at the time of the review (Angola, Cape Verde, Djibouti, Kiribati, Maldives, Samoa, Tuvalu and Vanuatu).

The CDP uses quartile distributions to establish the thresholds for inclusion. As in the case of GNI per capita, graduation benchmarks are established at a higher value for HAI (and at a lower value in the case of EVI) than the inclusion benchmark in order to minimize unwarranted changes and to lend stability to the list. Thus, to be included in the list of LDCs a low-income country should be in any of the three bottom quartiles of the HAI distribution and in any of the three upper quartiles of the EVI distribution. The quartile rule reinforces the relative nature of the LDC category: first in relation to all developing countries (the boundaries being obtained from the larger sample of developing countries, as mentioned above) and second in relation to distribution of values of the countries included in the review (on the basis of which the quartiles are calculated).

It is worth noting that the component indicators of both indices (discussed in the following two sections) are weighted and arithmetically averaged in a simple and transparent, although admittedly arbitrary, way. All HAI components carry the same weight, and the index therefore reflects the simple average of its components. The EVI also reflects a simple average of its two main components, the exposure index and the shock index.

The simplicity of equal weights was compared with the theoretical and conceptual advantage of weighting schemes based on factor analysis and growth regressions. An exercise was carried out to simulate the impact of different weights on the ranking of countries on the EVI. It was concluded that different plausible weights did not materially change the final result and did not justify the amount of statistical and econometric work that would be required to derive alternative weights.<sup>4</sup>

<sup>4</sup> See report of the Committee for Development Policy on the second session (3-7 April 2000), *Official Records of the Economic and Social Council, 2000, Supplement No. 13 (E/2000/33)*, p. 23. See also Patrick Guillaumont "EVI and its use: design of an economic vulnerability index and its use for international development policy" CERDI, Etudes et Documents, E.2007.15. August 2007, available from <http://publi.cerdi.org/ed/2007/2007.15.pdf>.

## ***Human assets index***

The HAI provides information on the level of development of human capital. Accordingly, it focuses on achievements in health and education as an indication of the capacity countries have to take advantage of opportunities for development. The HAI is a combination of four indicators related both to the level of health and nutrition and to the level of education.<sup>5</sup> As mentioned above, all indicators carry equal weight in the calculation of the HAI, which is thus an average of its four components.

The HAI has two indicators of health and nutrition:

- (a) The percentage of population that is undernourished;
- (b) The rate of mortality for children aged five years and under;

and two for education:

- (a) The gross secondary school enrolment ratio;
- (b) The adult literacy rate.

The CDP considers these the best possible indicators for conveying information on human capital given existing limitations on the availability of data for low-income countries. Undernourishment compromises one's health status and educational achievement, and has an important negative impact on productivity. Similarly, the mortality rate for children aged five years and under is a measure of child survival and reflects the social, economic and environmental conditions in which children (and others in society) live, including health care.<sup>6</sup> It therefore provides complementary information on the health status of the population as a whole of any given country. Furthermore, for low-income countries, differences in life expectancy of the population tend to be strongly influenced by differences in the levels of child mortality rates.

The CDP recognizes that the mortality rate for children aged five and under gives an incomplete picture of the overall status of the population. For instance, to better reflect the impact of HIV/AIDS, which has been spreading

<sup>5</sup> The HAI is preferred to the Human Development Index (HDI) because it takes a broader view of the human asset situation, as it includes four instead of two aspects of human development. Nutrition and secondary education are not considered in the HDI. In addition, the HDI includes GNI per capita (measured in purchasing power parity terms), which the CDP treats as a separate criterion.

<sup>6</sup> United Nations Development Group, *Indicators for Monitoring the Millennium Development Goals: Definitions, Rationale, Concepts and Sources* (United Nations publication, Sales No. E.03.XVIII.18).



quickly in low-income countries and has had a negative impact on the availability of human resources, the CDP would have preferred to have an indicator of life expectancy as an alternative to under-five child mortality. However, such data is neither systematically available nor reliable for the majority of low-income countries.<sup>7</sup>

A low level of education is a major obstacle to development as it implies an overall shortage of skills for the organization and functioning of the economy and reflects a low capacity to absorb technological advances. Achievements in education are measured by the adult literacy rate and gross secondary enrolment ratio. The adult literacy rate indicates the size of the base available for enlarging the trained and skilled human resources needed for development.<sup>8</sup> The gross secondary enrolment ratio complements that information by providing an indication of the share of population with a certain level of skills. Gross secondary enrolment is the chosen indicator—despite problems with high drop-out rates in some countries—owing to the severe limitations in terms of data availability and reliability regarding the average years of schooling of the active population or the expected years of education at birth, which would have been the preferred indicators.<sup>9</sup> Gross primary school enrolment is not used because it is reflected in the adult literacy rate and is usually inflated by the inclusion of repeats and older students in various age groups.

The original data for each variable are converted into index numbers using the max-min procedure and rescaled to remove significant outliers as described in box III.2. Data definitions and sources are further described in Annex IV.

### *HAI inclusion and graduation thresholds*

The HAI threshold for inclusion is determined by the index number corresponding to the third quartile in the distribution of HAI results for all LDCs and low-income countries under review. It is worth recalling that the third quartile of a set of numbers is the value at which 75 per cent of the numbers fall below it and 25

<sup>7</sup> See report of the Committee for Development Policy on the tenth session (17-20 March 2008), *Official Records of the Economic and Social Council, 2008, Supplement No. 13*, (E/2008/33) paragraph 8.

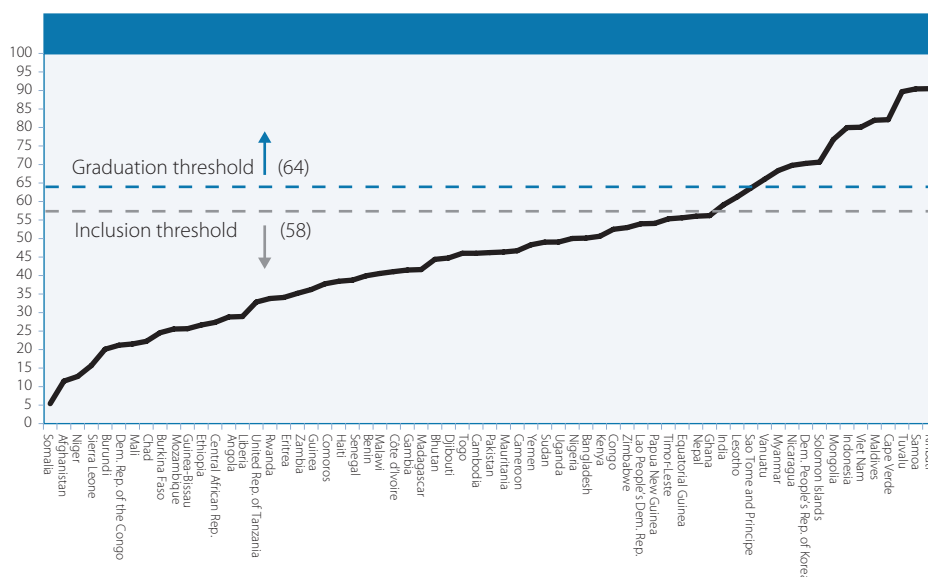
<sup>8</sup> See report of the Committee for Development Planning on the seventh session (22 March-1 April 1971), *Official Records of the Economic and Social Council Fifty-first session. Supplement No. 7*.

<sup>9</sup> See report of the Committee for Development Policy on the fourth session (8-12 April 2002), *Official Records of the Economic and Social Council, 2002, Supplement No. 13* (E/2002/33), paragraph 134.

per cent above, when the numbers are arranged in ascending (increasing) order. Countries with HAI values lower than the threshold meet the HAI criterion for inclusion in the list of LDCs.

The establishment of the threshold is straightforward when the number of countries in the reference set is divisible by four. If this is not the case, the quartile can no longer be expressed as an integer. In the case of the 2006 review, the reference set was composed of 65 countries. Accordingly, the third quartile fell between the forty-ninth position (Ghana, with an HAI estimated at 56.2) and the fiftieth position (India, with an HAI estimated at 59.1). The HAI threshold for inclusion was determined to be within that range and was established at 58 (roughly reflecting an average of both values) or lower. The threshold for graduation was established at 10 per cent above the inclusion threshold,<sup>10</sup> which corresponds to an HAI index of 64 or higher (see figure III.2).

Figure III.2  
Human assets index: 2006 triennial review





The criteria used to designate countries as least developed may be periodically reviewed and fine tuned by the Committee of Development Policy in order to reflect recent insights by economic theory and advances in data availability.

Updated information on the criteria and related methodology will be posted at [http://www.un.org/en/development/desa/policy/cdp/ldc\\_info.shtml](http://www.un.org/en/development/desa/policy/cdp/ldc_info.shtml) as it becomes available.

Data sources and definitions are available at [http://www.un.org/en/development/desa/policy/cdp/ldc/ldc\\_definitions.shtml](http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_definitions.shtml)

The text below replaces pp. 48-54 of the *Handbook on the Least Developed Country Category: Inclusion, Graduation and Special Support Measures* (United Nations publication, Sales No. E.07.II.A.9).

## ***Economic vulnerability index***

In 1999, the Committee recognized that vulnerability should explicitly be taken into account in the criteria used to identify LDCs, owing to the possible negative and long-lasting effects shocks can have on growth and development. Due to the inadequacy of existing indices,<sup>1</sup> it was necessary to construct an EVI in order to express information on the magnitude of countries' economic vulnerability. The Committee also argued that the usefulness of the index would depend upon the reliability of the statistics and the relative simplicity of computations.

The EVI attempts to capture the relative risk posed to a country's development by exogenous shocks. Impact depends on the magnitude and frequency of such shocks, on the structural characteristics of the country concerned—which affect the degree to which it is exposed to such shocks – and the country's capacity to react to shocks (i.e., its resilience).

To an extent, all countries are vulnerable to some specific adverse shocks. Thus, if vulnerability is to be used as an explicit criterion in designating countries as LDCs, there is a need to focus on those sources of vulnerability that (a) accentuate or perpetuate underdevelopment, (b) are not the result of misguided policies but instead

<sup>1</sup> See report of the Committee for Development Policy on the first session (26-30 April 1999). *Official Records of the Economic and Social Council, 1999, Supplement No. 13* (E/1999/33), Annex I.

are such that they limit policymakers' capacity to respond to shocks, and (c) are beyond a country's control.

Accordingly, the EVI is composed of eight indicators<sup>2</sup>:

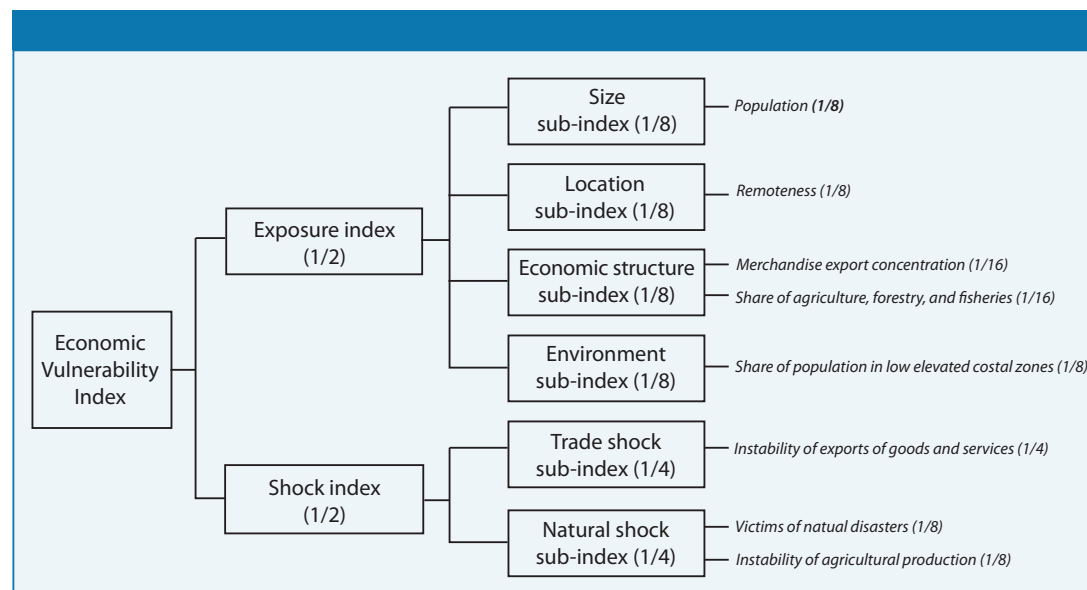
- (a) Population size;
- (b) Remoteness;
- (c) Merchandise export concentration;
- (d) Share of agriculture, forestry and fisheries in gross domestic product (GDP);
- (e) Share of population living in low-elevated coastal zones;
- (f) Victims of natural disasters;
- (g) Instability of agricultural production;
- (h) Instability of exports of goods and services.

The indicators are grouped into two components: an exposure component (measured by the exposure index) and a shock component (measured by the shock index). The EVI is calculated as the simple, unweighted, average of these two indices (see figure III.3).

Figure III.3

**Composition of the Economic Vulnerability Index (EVI)**

Numbers in parenthesis indicate the weight in the overall EVI.



<sup>2</sup> See also the report of the Committee for Development Policy on the thirteenth session (21-25 March 2011). *Official Records of the Economic and Social Council, 2011, Supplement No. 13 (E/2011/33)*.

## *The exposure index (A)*

The exposure index is composed of indicators (a) to (d) above.

### *Size sub-index*

#### *Population (indicator (a))*

Exposure is measured by the size of the country (proxied by the logarithm of the size of its population). Larger countries are often more resilient to shocks and have a more diversified economy owing to the presence of economies of scale supported by a relatively large domestic market. Smaller size is often associated with a persistent lack of structural diversification and dependence on external markets. Additionally, small economies experience higher exposure to natural shocks, and most small, low-income countries are situated in regions that are prone to natural disasters.

### *Location sub-index*

#### *Remoteness (indicator (b))*

Location is also a factor that has a bearing on exposure and resilience, as countries situated far from major world markets (and those that are landlocked) face a series of structural handicaps, such as high transportation costs and isolation, which render them less able to respond to shocks in an effective way. Countries isolated from main markets have difficulty in diversifying their economies, even in the current era of globalization and the Internet. Remoteness is a structural obstacle to trade and growth and a possible source of vulnerability when shocks occur. It is also considered one of the main handicaps of many low-income small island developing States (SIDS).

For the purposes of identifying LDCs, remoteness is defined as the (merchandise) trade-weighted average of the distance from world markets. It should be noted that a simple index of the average physical distance from world markets is not appropriate for capturing country-specific remoteness. It involves the use of identical weights for all trade partners, regardless of their respective export destinations, and thus only indicates a potential average distance to world markets. In this regard, it does not allow one to differentiate between one country whose neighbour has a significant weight in world markets from a country which is located between two or several large markets. A more useful definition of remoteness requires the use of weights that reflect the distance to a minimum fraction of the world market. Said fraction was established at 50 per cent by the CDP.

To calculate the trade-weighted average distance of an LDC from world markets, two sets of data are required: the bilateral physical distance between the exporting country and its trading partners (importers), and the market share of each trading partner in world markets.

First, a trade-weighted distance between the country considered and each potential trading partner is calculated as the product of the physical distance and the market share of the trading partner in the world markets. Then, the trade-weighted

bilateral distances are added up until the cumulative market share of importing countries reaches 50 per cent of the world market. A linear programming procedure is employed to find a set of trading partners whose cumulative trade-weighted distance represents the minimum of all possible combinations of countries whose combined share in the world market is 50 per cent or greater.

Once the average minimum distances are calculated, an adjustment coefficient is applied to take into account the particular situation of landlocked countries. These countries, facing higher barriers to trade, often confront relatively higher transport costs for a given distance. Relying on a number of empirical studies of the transport costs to or from landlocked countries, an adjustment coefficient of 15 per cent was chosen and applied to the distance. An index of this distance, transformed into logarithms, is then calculated using the max-min procedure described in box III.2.

### *The economic structure sub- index*

Exposure arising from the particular characteristics of the productive structure of an economy is revealed in the composition of both GDP and exports. The structural index measures the degree of merchandise export concentration and the share of agriculture, forestry and fisheries in the economy. Both components carry an equal weight in the calculation of this sub-index (see figure III.3).

#### *Merchandise export concentration (indicator (c))*

Export concentration increases a country's exposure to trade shocks. As currently applied, export concentration excludes services. This is largely due to methodological differences in terms of both data collection and reporting, and in classification that does not allow for goods and services to be merged into a new export concentration index.

The numbers represent Herfindahl-Hirschmann indices derived from applying the following formula to the product categories of the Standard International Trade Classification (SITC) at the three-digit level:<sup>3</sup>

$$H_j = \frac{\sqrt{\sum_{i=1}^n \left( \frac{x_i}{X_j} \right)^2} - \sqrt{\frac{1}{n}}}{1 - \sqrt{\frac{1}{n}}}$$

where:

$j$  is the country index;

$x_i$  is the value of exports of commodity  $i$ ;

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<sup>3</sup> For source and definition, see annex IV.

$x_j = \sum_{i=1}^n x_i$  is the value of total exports of country  $j$ ; and

$n$  is the number of products at the three-digit SITC level.

*Share of agriculture, forestry and fisheries in gross domestic product  
(indicator (d))*

Turning to the other component of the structural index, a larger share of agriculture, forestry and fisheries in GDP implies higher exposure to shocks both in relation to terms of trade and to natural disasters. The statistical series used is “agriculture, hunting, forestry and fishing as percentages of GDP” generated from national accounts value added at current prices (in United States dollars). It should be noted here that tourism is another activity that can be adversely affected by natural shocks, but it is not defined in the national accounts as a separate industry or sector.

*Share of population living in low elevated coastal zones (indicator (e))*

The indicator measures the share of the population in a country that lives in low elevated coastal zones, defined as areas contiguous to the coast below a certain elevation threshold. The indicator will be applied for the first time in the 2012 review. The indicator intends to capture vulnerability to coastal impacts (including sea level rise and storm surges) associated with climate change.

### *The shock index (B)*

The shock index comprises 50 per cent of the EVI. Two main sources of exogenous shocks are considered: those related to natural or weather-related phenomena, such as earthquakes, volcanic eruptions, droughts or cyclones, and those emanating from the external economic environment—specifically through trade—such as sharp slumps in external demand, terms of trade shocks, etc. Thus, the shock index is constructed as the average of the *natural shock index* and the *trade shock index*.

Financial shocks are not explicitly considered, as most LDCs have only limited access to private capital flows and rely on official development assistance (ODA). These flows are largely dominated by grants or contracted at concessional terms of below-market interest rates and long maturity periods which cushion recipient countries against international interest rate shocks. While ODA flows can be volatile, creating numerous difficulties for recipient countries, increased access to official financing is precisely one of the potential benefits of belonging to the category. A problem of endogeneity would therefore be introduced if eligibility to the LDC status were to be defined by using quantitative indicators related to ODA. Additionally, the CDP does not understand vulnerability to volatility of financial flows to be structural in nature, but rather related to a country’s overall economic policies.

### *The natural shock index*

Natural disasters have a negative impact on economic development and are an important source of vulnerability for low-income countries. Countries are affected by a wide

range of natural shocks whose nature, frequency and impact vary greatly and are hard to predict. Even if data were readily available and reliable, it would be difficult to meaningfully combine relevant information on a wide variety of natural phenomena into a single index. Alternative proxy measures are therefore used.

The *natural shock index* is defined as the simple average of two components: victims of natural disasters (indicator (f)), and the instability of agricultural production (indicator (g)). Both are presented as index numbers. These two proxy indicators are found to be complementary, reflecting natural shocks in a comprehensive manner.

*Victims of natural disasters (indicator (f))*

This indicator conveys information on the share of the population that has been a victim of natural disasters. To account for the fluctuations of disasters over time, the indicator is computed using multi-year averages. Victims of natural disasters are defined as people killed or affected (i.e., people requiring immediate food, water, shelter, sanitation or medical assistance). It covers weather and climate-related disasters (such as floods, landslides, storms, droughts and extreme temperatures) as well as geophysical disasters (such as earthquakes or volcanoes). The indicator reflects vulnerability to natural shocks, in particular the human impact of natural disasters associated with these shocks.

The “victims” indicator replaces the indicator “homelessness caused by natural disasters”, which was used in the 2006 and 2009 reviews and did not cover the impacts of droughts and extreme temperatures.

*Instability of agricultural production (indicator (g))*

The other component of the natural shock index measures the instability of agricultural production against its trend value. While the trend value reflects factors which may be permanent in nature (such as availability and quality of arable land) as well as economic policies, fluctuation around that trend may capture, among other things, the occurrence of natural shocks and their impact. Of course, this method of estimating trends can give rise to certain problems.<sup>4</sup>

The trend equation estimated for each country is expressed as follows:

$$\log Y_t = \alpha + \beta \log Y_{t-1} + \gamma t + e_t$$

where:

$Y_t$  is the agricultural production index,

$t$  is the time variable (each year in the sample period), and

$\gamma_t$  is the trend.

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<sup>4</sup> For details, see Patrick Guillaumont, *Moving Out of the Trap: the Least Developed Countries. Vol.1. Rationale of a Category*, op.cit., chapter VI. See also report of the Committee for Development Policy on the second session (3-7 April 2000) *Official Records of the Economic and Social Council, 2000, Supplement No. 13 (E/2000/33)*, annex I.



The standard error of the regression is used as the measure of agricultural instability for each country and is expressed as:

$$S = \sqrt{\sum_t e_t^2 / (N-1)}$$

### **Trade shock index**

#### *Instability of exports of goods and services (indicator (h))*

For low-income countries, particularly for countries heavily dependent on agricultural exports or the provision of tourism services, instability of export proceeds is a source of vulnerability. This instability largely results from structural factors such as fluctuations in world demand and other reasons not necessarily associated with the domestic policy of the country concerned (such as climatic events or changes in policies of major importing markets).

The trade shock index is measured by an index number series representing the instability of exports of goods and services (in current United States dollars expressed as index numbers), deflated by an index of import unit values. The result approximates a measure commonly referred to as the purchasing power of exports, which is an indicator of the country's capacity to import goods and services from current export earnings.

The instability index is calculated, as above for agricultural instability, by a regression of a trend equation for exports (deflated by import unit values) and using the standard error of the regression as the indicator of instability. The trend equation is expressed as follows:

$$\log X_t = \alpha + \beta \log X_{t-1} + \gamma t + e_t$$

where:

$X_t$  is the value of exports of goods and services deflated by import unit values,

$t$  is the time variable (each year in the sample period),

$\gamma_t$  is the trend,

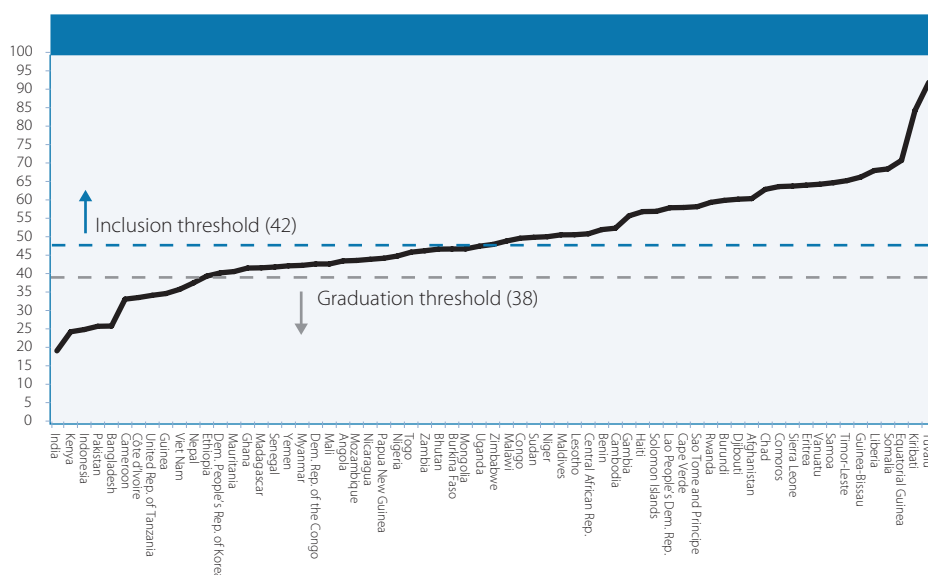
and the standard error given by:

$$S = \sqrt{\sum_t e_t^2 / (N-1)}$$

### *EVI inclusion and graduation thresholds*

As in the case of the HAI, once the various components of the EVI have been calculated and aggregated into the composite index, threshold values for inclusion in and graduation from the category are established. The EVI threshold for inclusion is the value of the index corresponding to the first quartile in the distribution of the EVI for all countries reviewed. In the case of the 2006 review, which comprised a total number of countries indivisible by 4 (see section above on HAI inclusion and graduation thresholds), the first quartile fell between the sixteenth (Madagascar, whose EVI equalled 41.6) and the seventeenth (Senegal, whose EVI equalled 41.8), and the threshold for inclusion was established at 42 or above. The threshold for graduation was established at 10 per cent below the inclusion threshold and corresponded to an EVI index of 38 or lower (see figure III.4).

Figure III.4  
Economic vulnerability index: 2006 triennial review



Source: Annex table A.3. (Updates will be made available at <http://www.un.org/esa/policy/devplan/>.)