Chapter 3

Assessing the Prospects of Accelerated Graduation of the LDCs

Alassane Drabo and Patrick Guillaumont[1]

Summary

This chapter provides the first systematic examination of the graduation trends and prospects after the Fourth United Nations Conference on the Least Developed Countries (UN LDC IV) and the adoption of the Istanbul Programme of Action (IPoA). A major statement of the IPoA is 'the aim of enabling half the number of least developed countries to meet the criteria for graduation by 2020'. This goal has been referred to or reiterated in several official UN documents (UN Resolutions of December 2012). While considered at the time of the Istanbul Conference as moderately realistic, it has shown a change in international attitudes towards graduation. Graduation has been considered less as a threat for development of the graduating countries, and more as the signal that these countries were reaching a new phase of development. After Istanbul, the fear of graduation has been dampened by the General Assembly resolution on 'Smooth transition' adopted in December 2012 (and following the report of an ad hoc working group of the General Assembly on this topic).

This chapter shows the implications of the present rules for graduation prospects and questions the consistency of the IPoA graduation goal with these rules.

1. The prospects of graduation depend on the rules and criteria applied. Since the origin of graduation there has been an asymmetry between inclusion and graduation criteria, which was set up for precautionary reasons. The impact of graduation is high. At the 2012 review, among the 49 LDCs under consideration, 26 were no longer meeting the three complementary inclusion criteria. It means that without the present asymmetry the IPoA goal would have already been reached.

2. In order to examine the graduation prospects it should be assumed that the graduation criteria remain unchanged: two criteria need no longer be met (initial rule) or only the income per capita criterion at a higher threshold should be applied (additional 2005 rule). Other results could be obtained with alternative rules.

3. There is an important difference between the economic vulnerability index (EVI) or human asset index (HAI) criteria and the per capita gross national income (GNI) criterion. The former have been relative thresholds designed

by the quartile value of a reference group, the number of which remains approximately the same, while the latter is an absolute threshold, unchanged in constant dollars. This difference has significant implications for eligibility. Graduation prospects have been considered, first, according to the initial rule that two criteria should no longer be met, at least one of which was a relative one; and, second, according to the absolute criterion of only one income per capita. While until now eligibility for graduation has mainly resulted from the application of the initial rule, it is likely to be more driven in the future by the application of the new second rule.

4. The graduation prospects are constrained by the time frame of the graduation process. In order to 'meet the criteria by 2020', a country should be found eligible at two successive triennial reviews, strictly speaking no later than at the 2015 and 2018 reviews! Moreover, any countries meeting the criteria in 2018 cannot effectively be graduated before 2021.

5. Accordingly, the next LDCs likely to meet the graduation criteria in this time frame include, first, the three countries whose graduation has already been decided but is not yet effective (Samoa, Equatorial Guinea, Vanuatu), the three other countries either recommended (Tuvalu) or found eligible the first time (Angola and Kiribati) and those few countries that could be found eligible for the first time in 2015. According to the traditional two criteria rule, it seems that only Solomon Islands could meet two criteria, that is the HAI criterion (assuming the reference group does not shrink) and the GNI per capita (GNIpc) criterion (assuming rapid economic growth). According to the income-only rule, this could be the case of for Timor-Leste and possibly Bhutan, if their growth is sustained. Thus, at the end of the decade, there could be 10 out of the 49 present LDCs that have met the graduation criteria (seven of which having effectively graduated), which equates to around one-quarter instead of the IPoA goal of one-half. Although graduation prospects are substantial, they are likely to significantly lag behind the IPoA goal.

6. In the longer term (and possibly as soon as the 2024 review), several other LDCs can meet the income-only criterion if they achieve a rate of growth corresponding to the 7 per cent target of IPoA. For reasons endogenous to the design of the criteria, the key driver of eligibility for graduation is likely to become the growth of income per capita, if sustained. Economic growth will progressively push LDCs to meet the income-only criterion, while an improvement in the component indicators of HAI and EVI will have little direct impact on graduation likelihood. This results from the fact that HAI and EVI have been until now relative criteria which can be met only through a change in the country situation with respect to the thresholds. An improvement in HAI and EVI as a result of IPoA is instead expected to have an impact on graduation as a factor of higher economic growth.

7. The General Assembly in its December 2012 resolution on 'Follow-up to the Fourth United Nations Conference on the Least Developed Countries' rightly expressed 'serious concern' that, after a decade of steady growth, the LDCs are facing significant challenges in sustaining their economic growth. Of course

the growth of the GNIpc may be influenced by exogenous factors other than the structural features identifying LDCs. Such factors have already been working during the last decade, the main one being the international price of commodities, in particular oil. But some other factors may appear in the next decade, in particular new oil or mineral exports resulting from recent discoveries. Another set of highly important factors is the improvement in domestic as well as international policies, in particular those recommended by the IPoA. Difficult to assess and predict, this has not been considered in this chapter, except through the simulation of the achievement of the 7 per cent IPoA target of economic growth. The rather limited prospects of graduation in the period covered by the IPoA should be an incentive to implement and hopefully reinforce the support measures agreed upon in Istanbul.

8. This chapter has assumed that the graduation rules are roughly unchanged, avoiding consideration of any important changes. However, this chapter underlines the significant impact of the way in which the reference group of countries used for the determination of the HAI and EVI criteria thresholds has been designed. Moreover, following a previous suggestion of the Committee for Development Policy (CDP), some refinement in the present rules has been proposed to combine the two structural handicap indices in a synthetic index, used as an alternative criterion, not without a possible impact on the path of graduation.

3.1 Introduction: the context of prospects

The LDC category, established by the UN in 1971, was from the start meant to comprise low-income countries impeded by structural handicaps from achieving economic growth (in the 2011 CDP formulation 'economic growth' has been replaced with 'sustainable development'). The structural handicaps considered for the identification of the LDCs are deficient human resources and high economic vulnerability. The LDCs are identified by three mandatory complementary criteria for inclusion into the category (CDP and UNDESA 2008; CDP 2012): income level as measured by GNIpc, and two indicators of structural handicaps – HAI and EVI.[2] Poor countries facing these two kinds of handicap simultaneously have been described as 'caught in a trap', and in need of special international attention and support measures (Guillaumont 2009a).

3.1.1 When graduation rules were set up and what they are

Graduation from the list of LDCs, when an LDC no longer fulfils the conditions of membership, was not considered during the first 20 years of the category. The possibility and conditions of graduation were introduced in 1991, and since the list of LDCs has undergone triennial reviews. Three main precautions should be taken before an LDC is recommended for graduation: (i) not only one, but two of the three criteria of inclusion should cease to be met; (ii) margins should be set up between inclusion and graduation thresholds for each criterion; and (iii) a country should be found eligible at two successive triennial reviews. Moreover, since 2004 a country

is only deemed to have graduated three years after the endorsement by the General Assembly of the CDP recommendation. An exception to the initial 'two criteria rule' was introduced in 2005: a country can be found eligible for graduation if its GNIpc is at least twice as high as the ordinary income graduation threshold and deemed sustainable, making income per capita the only criterion for graduation in these cases. While such cases at the introduction of the rule in 2005 were considered exceptional, they appeared later not to be so, as we shall see below. In what follows we refer to these two alternative rules of graduation as the 'two criteria rule' and the 'income-only criterion' or 'income-only rule'.

3.1.2 How graduation rules have been implemented

The history of graduation of the LDCs since 1991 can roughly be divided into two periods. From 1991 to the middle of the 2000 decade, only one country graduated from the category according to the rule prevailing at the time, namely Botswana on 19 December 1994. This modest outcome is mainly due both to the economic trends in LDCs and to the precautionary graduation conditions.

The graduation process has also been impacted by the resistance of eligible countries since the end of the 1990s[3] (CDP 1997, 2000, 2003, 2006; CDP and UNDESA 2008; Guillaumont 2009a). From 1994 and before the Istanbul Conference two countries graduated from the group, Cape Verde on 20 December 2007 and Maldives on 1 January 2011, both on the basis of their high GNIpc and HAI. At the time of UN LDC IV (Istanbul, May 2011) the attitudes towards graduation among LDCs seemed to be changing.

3.1.3 Graduation since UN LDC IV: the meaning of an enabling goal

Samoa, after obtaining a three-year postponement from the General Assembly (A/RES/64/295 of October 2010), graduated in January 2014.

The graduation of Equatorial Guinea, recommended by the CDP in March 2009 and agreed by the Economic and Social Council (ECOSOC) in July 2009 (Resolution 2009/35), has been waiting the decision by the General Assembly for an unusually long time, being repeatedly considered as imminent: having been agreed upon at the end of May 2013 (A/67/L.XX, compilation text agreed ad ref, based on A/67//L.31), the adoption of that resolution was itself postponed to September 2013 at the request of concerned countries; it was then again agreed upon so that the resolution was adopted on 4 December 2013 (A/RES/68/18).

At the last (2012) triennial review, Tuvalu and Vanuatu were found eligible for the third consecutive time and recommended for graduation from the list by the CDP (they had already been found eligible for a second time in 2009, but then were not recommended for graduation by the CDP). Tuvalu's case is still to be examined by ECOSOC, while Vanuatu's recommendation, endorsed by ECOSOC, has taken some time to be examined by the General Assembly. Vanuatu had requested a postponement on the basis of climatic circumstances, as was previously obtained by Maldives and Samoa on the basis of a tsunami. A shorter postponement by one

year, called 'additional preparatory period on an exceptional basis', has finally been granted before the decision on whether to graduate this country is to be taken by the General Assembly. At the same time, Equatorial Guinea was granted an 'additional preparatory period of six months' 'on an exceptional basis', without any explicit reason. Graduation of Vanuatu is now expected at the end of 2017 (and that of Equatorial Guinea in mid-2017).

At the 2012 review, Angola and Kiribati were also found to meet the eligibility criteria for graduation for the first time and might be recommended for graduation at the next triennial review, in 2015, if they are still found eligible (CDP 2009, 2012).

3.1.4 Time frame for a reduction by half

A change of attitude towards graduation has been shown at UN LDC IV with the IPoA, which is often interpreted as including a goal of reduction by half of the number of LDCs by 2020. The exact wording as included in the IPoA is more cautious: it underlines 'the aim of enabling half of the number of least developed countries to meet the criteria for graduation by 2020' (United Nations 2011, §28, see also §1). It should be noted that since 2004 graduation is effective three years after the General Assembly has 'taken note of' the recommendation of the CDP to graduate a country (a recommendation proposed only after the CDP has found the country eligible at two successive triennial reviews, that is meeting the criteria).[4] It follows that after the country has met the graduation criteria and been recommended for graduation by the CDP, it needs at least three more years to achieve an effective graduation.

It should be noted that, according to the present rules, for a country to actually be graduated by 2020 it should already have been found eligible for the first time in 2012, and, if again found eligible in 2015, recommended for graduation. If the recommendation is rapidly endorsed by ECOSOC and the General Assembly, it could be graduated at best in 2018. This only applies to Angola and Kiribati, the two countries found eligible for the first time in 2012. Meanwhile, with the graduation of Samoa and Equatorial Guinea, probably of Vanuatu in 2017 and possibly of Tuvalu, it would mean that a maximum of 6 among the 48 LDCs of Istanbul (49 since the December 2012 decision of the General Assembly to include South Sudan) would have graduated before 2020, a decrease by one-eighth, far from a reduction by half.

More LDCs can 'meet the graduation criteria by 2020', which means that that they will be found eligible for the first time at the 2015 review and for a second time in 2018, the last triennial review before 2020. They can then be graduated at the earliest in 2023. Even more LDCs could meet the criteria at the 2021 review, although the prospects are limited, as we shall see below. To actually be graduated in 2021, an LDC should have been found eligible for the first time in 2015.

3.1.5 A possible acceleration by voluntary graduation?

The move towards an attitude more favourable to graduation is illustrated by the wish expressed by some LDCs to graduate as soon as possible. This should be

understood as the wish to be soon able to meet the present graduation criteria and so be recommended for graduation.

Another possibility would be for a present LDC to request a graduation even if the criteria are not yet met. Such a case has not yet occurred. Is it conceivable? Since a country may refuse to be included as an LDC when found eligible, it seems difficult to argue that an LDC cannot leave the category if it wants to do so. Why might it? From such a 'voluntary graduation' the country might expect to receive the benefits from a good performance signal, worth more than the lost benefits of LDC membership. At the same time it would not reveal a high perception of the benefits of the category.

3.1.6 Smooth transition more clearly addressed

Concurrently, a concern about 'smooth transition' has been raised, first reflected by the CDP in 2000, strongly and recently illustrated by the UN General Assembly Ad Hoc working group on this issue (UNGA, A/67/92); its report, adopted in July 2012, has resulted in a resolution of the United Nations General Assembly in December 2012 (A/C.2/67/L.51) (UN General Assembly 2012a). This resolution can be seen as a post-Istanbul complement of the previous 2004 resolution 59/209 of the General Assembly on the smooth transition strategy for countries graduating from the list of LDCs. The need for a new resolution had risen both from the fear and resistance of the countries recommended or found eligible for graduation during the previous years and from the perspective of an acceleration of the number of graduations, as stated in the IPoA.

We shall not examine here the content of this resolution, which includes a set of propositions to make the transition smooth in order to avoid a 'disruption' in the development path of countries losing the benefits of the LDC status. It does not directly affect the graduation prospects examined in this paper, except possibly by dampening the resistance of eligible countries to their graduation.

Let us note that paragraph 23 of this resolution invited development partners 'to consider least developed country indicators, gross national income per capita, the human assets index and the economic vulnerability index as part of their criteria for allocating official development assistance'. This part of the resolution, following the recommendation of the ad hoc committee (UN General Assembly 2012b), and suggestions made by members of the LDC IV Monitor previously or at the ad hoc committee, is significant to make the LDCs' graduation smoother, but also as a more general principle of aid allocation: by taking into account structural handicaps, aid allocation would become more equitable.

The resolution also decided that the General Assembly should take note of the decisions of ECOSOC regarding graduation at its first session 'following the adoption of such decisions by the Council' (paragraph 10). This is intended to avoid delays such as those recorded for Equatorial Guinea in recent years.

3.1.7 Graduation prospects: rules assumed not to be changed

The aim of this paper is to assess the prospects of graduation since the Istanbul Conference, with a special focus on methodology. The meaning of an accelerated

graduation from the LDCs category would have to be examined with regard to the rationale of the category. If LDCs are countries 'caught in a trap', when will they be considered as 'out of the trap' and ready to develop without needing special support measures? Which factors can lead to an accelerated graduation?

The prospects of graduation depend on the rules applied. It is to be recalled that there is an asymmetry between inclusion and graduation criteria, which was set up for precautionary reasons. Its impact is high. At the 2012 review, among the 49 LDCs under consideration, 26 were no longer meeting the inclusion criteria (the three complementary criteria). This means that, without the existing asymmetry in the inclusion/graduation criteria, the IPoA goal would have already been reached.

In order to examine these prospects, we make the assumption that the graduation criteria remain unchanged: two criteria are no longer to be met (initial and general rule) or only the income per capita criterion at a higher threshold should be applied (income-only rule added in 2005). There is indeed an important difference between the EVI or HAI criteria and the GNIpc criterion. The former have been relative thresholds designed by the quartile value of a reference group, while the latter was an absolute threshold in constant dollars. Since this difference has significant implications for eligibility, the following Sections, 3.2 and 3.3, consider the graduation prospects, first, according to the two criteria rule (two criteria should no longer to be met, at least one of which is a relative one) and second, according to the income-only rule or criterion. In this second part, we return to the rationale of the category by focusing on the 'expected natural income level per capita', the income level the country could reach in a given future year if its structural handicap remains the same.

3.2 Graduation prospects according to the 'two criteria' principle

According to the two criteria rule, a country is eligible for graduation if it reaches the graduation threshold for at least two criteria: for HAI and EVI this is a threshold of 10 per cent above the inclusion threshold, and for GNIpc this is a threshold of 20 per cent above the absolute level used by the World Bank to separate low-income and middle-income countries (LICs and MICs). HAI and EVI are composite indices, which are scaled, relatively to the maximum and the minimum (or two normal bounds) of a reference group which converts them to relative indicators, while the World Bank GNIpc low-income threshold is an absolute level remaining constant in real terms over time. This means that at least one, and possibly two, of the criteria met to satisfy this rule should be a relative one (more details in Guillaumont 2009a).

3.2.1 Importance of the reference group

An LDC's likelihood of meeting a relative graduation criterion depends on the size of the reference group and on the location of the threshold set up to identify LDCs. The reference group has traditionally included all LDCs and other LICs and the threshold for inclusion has traditionally been put at the (better) quartile of the reference group. The higher the number of countries which are not LDCs, the lower the probability for an LDC to be in the better quartile.

A risk of endogenous graduation…

More and more former non-LDC LICs have become MICs since 2000.[5] As a consequence, the reference group has been shrinking over time (from a maximum of 67 in 2000 to a minimum of 60 in 2009),[6] making the attainment of the graduation threshold easier. If there were no longer LICs or LDCs, the reference group would become the group of LDCs itself. Then, with around one-quarter not reaching the inclusion threshold, a proportion a little smaller (due to the margin between inclusion and graduation thresholds), but still significant, would reach the graduation threshold whatever the evolution of HAI and EVI for the whole set of countries. With graduation occurring, it would correspond to a renewed set of LDCs. In this way, the probability of reaching the graduation threshold would remain unchanged for a decreasing number of non-graduated LDCs. It would result in an endogenous process of graduation, whatever the rate of improvement in the indicators on which HAI and EVI rely.[7]

…is avoided by an enlargement of the reference group

It would not be logical that, with the reduction of the number of non-LDC LICs, the reference group be reduced to the only group of LDCs. This would not be consistent with the concept of LDCs as poor countries suffering the most from structural handicaps. From the beginning the purpose was to differentiate between LDCs and other developing countries. For this reason, the CDP extended the design of the group at the 2012 review, where there were only three non-LDC LICs. The reference group then included all the LDCs and 'all other developing countries whose per capita income in any of the three years used to determine average incomes (i.e. 2008–2010) was less than 20 per cent above the low-income threshold determined by the Word Bank' (CDP 2012). This extension led to the inclusion of nine additional countries, without which the reference group (according to its previous definition) would have fallen to 51 (instead of 60 in 2009) and made it probable that the relative graduation criteria would become higher, as explained above. Without this extension, with a reference group of 51 countries, the new quartile thresholds (then between the 12th and the 13th ranks) would have led Bangladesh to meet the EVI graduation criterion and Solomon Islands to meet the HAI graduation criterion. However, it would have not made these two countries eligible since they were not meeting another graduation criterion.[8]

Retaining in 2015 the same principle as in 2012 for the extension of the reference group would probably not avoid this group continuing to shrink, since some of the nine added countries will have durably crossed the line located 20 per cent above the low-income threshold. This would raise again the question of a revision in the design of the reference group. It could be done for instance by including all developing countries with a per capita income lower than the average of the ordinary graduation threshold and the income-only threshold, that is 0.5(120 per cent+240 per cent)=180 per cent of the inclusion criterion, with a resulting reference group staying around 60 countries.[9] Or, if the present number of 60 countries is considered adequate to maintain the same reference over time, the reference group can simply include all LDCs and the number of other developing countries, ranked by increasing order of income per capita, which are needed to reach 60.[10]

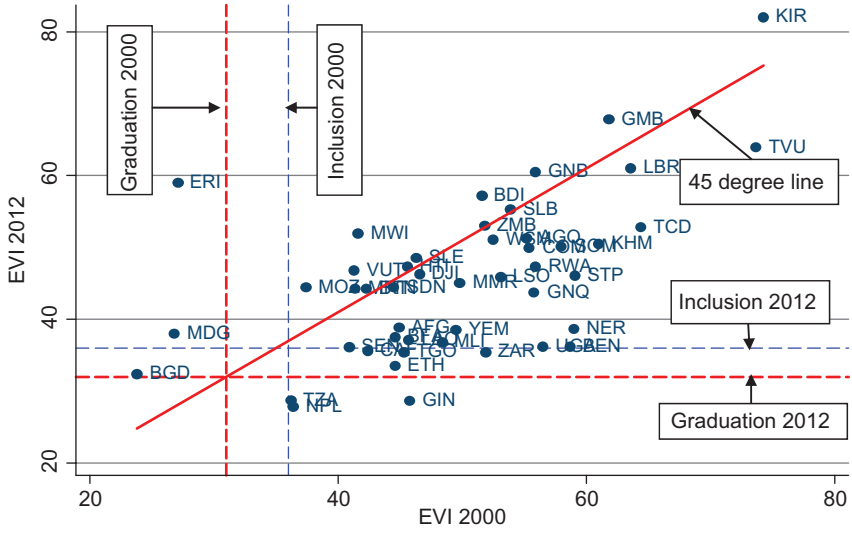
To assess the prospect of graduation with regard to the two criteria rule, and measure the progress towards the graduation threshold, we carried out two kinds of empirical exercise. The first aims at giving a global view on the evolution of the positions of LDCs with regard to each of the two relative criteria, HAI and EVI, making it possible to test an 'endogenous' eligibility. The other exercise aims at giving a country-by-country view on the evolution of the relative position with respect to the three criteria, and so for each country, in order to give evidence of the trends towards eligibility to graduate.

3.2.2 How are relative positions globally changing?

The first exercise, considering all LDCs, and successively for each criterion, consists of comparing the position of the countries with respect to graduation thresholds at different review years. We choose 2000 and 2012 as review years, since the EVI criterion was introduced in 2000, so that the comparison will be relevant. However, the composition of EVI (more than that of HAI) has changed during this period, in particular at the 2006 and 2012 reviews (see Guillaumont 2009a, 2013). In particular it should be noted that the definition of EVI changed slightly in 2012 by reducing by half the weight given to the small size population indicator and adding a new component reflecting the population in low coastal areas. For that reason, we also compared the evolution from 2006 to 2012 of an EVI corresponding to the (unchanged) definition of the 2006 and 2009 reviews, that is using an EVI calculated in 2012 on the basis of the 2006–09 definition.

Figures 3.1 and 3.2 present the results for EVI, Figure 3.3 for HAI. The thick red dashed lines represent the graduation thresholds for both years, while the thin blue dashed

Figure 3.1 Positions of LDCs with regard to EVI 2012 and EVI 2000



Note: The 45 degree line has been drawn from the intersection of the graduation threshold lines. It does not go through the inclusion thresholds intersection since the margins between the graduation and the inclusion thresholds have changed

Figure 3.2 Positions of LDCs with regard to EVI 2012 and EVI 2006, both calculated according to the 2006 method

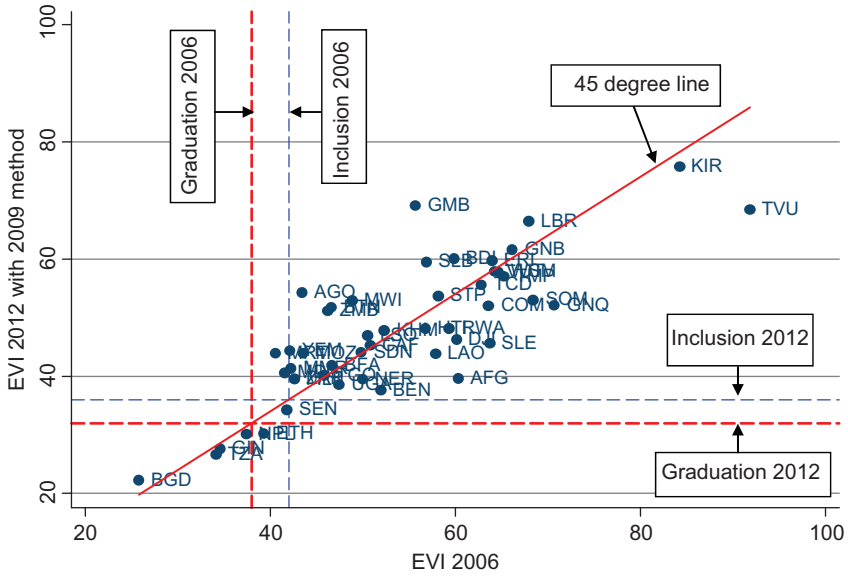
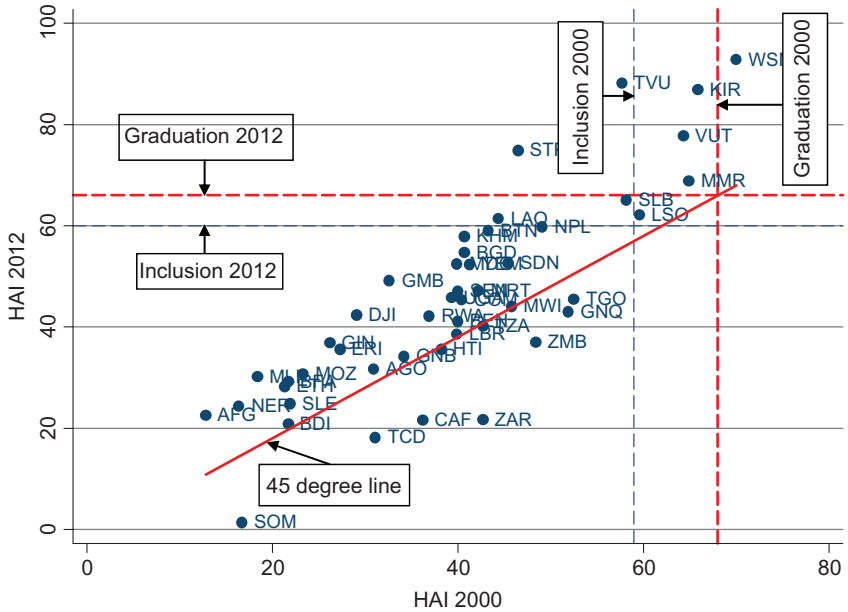


Figure 3.3 Positions of LDCs with regard to graduation thresholds of HAI (APQLI) in 2000 and 2012



Note: The 45 degree line has been drawn from the intersection of the graduation threshold lines. It does not go through the inclusion thresholds intersection since the margins between the graduation and the inclusion thresholds have changed

lines represent the inclusion thresholds. In Figure 3.2 the thick black horizontal line represents the graduation threshold of EVI for the year 2006 applied to 2012.

In Figure 3.1, a relative progress towards the graduation threshold between 2000 and 2012 does not appear clearly. None of the countries that met the EVI graduation threshold in 2000, Eritrea, Madagascar and Bangladesh, met it in 2012, while three other countries that did not fulfil this criterion in 2000, Tanzania, Nepal and Guinea, did it in 2012. On the other hand, a majority of LDCs have come closer to the graduation threshold, as shown by their position with respect to the 45 degree line, and four of them remain between the inclusion and the graduation thresholds. Do these results come from the change in the definition of EVI, or from the structural change of countries?

A partial answer is given in Figure 3.2, where the 2006 positions are compared with the 2012 ones, using for 2012 the same 2006–09 definition of EVI. In this shorter period the picture seems better. All four countries that met the graduation criteria in 2006 (Bangladesh, Tanzania, Guinea and Nepal) met it in 2012, while Ethiopia met it in 2012 without having met it in 2006. On the other hand, the whole distribution of countries on both sides of the 45 degree line appears rather balanced, showing a smaller number of LDCs achieving structural progress with regard to EVI than in Figure 3.1. Comparing the countries meeting the EVI graduation criterion with the 2012 threshold and with the 2006 threshold also shows that one more country (Senegal) would have met the criterion if the threshold had stayed at the same level. Figure 3.1 also suggests that the addition of nine new countries to the list of reference countries has avoided an effect of what we previously have called endogenous graduation for this criterion, since without this addition the horizontal dashed graduation/inclusion threshold line would have been positioned higher. Finally, it seems from the analysis that the 2011–12 changes in the EVI have affected the stability of the positions of LDCs with regard to the EVI graduation threshold.

With regard to the HAI criterion, the results obtained are shown in Figure 3.3. Since the changes brought into the composition of HAI (still named APQLI, Augmented Physical Quality of Life Index, in 2000) have been less significant than for EVI, the comparison from 2000 to 2012 is easier. Consistently with the fact that most of the countries found eligible to graduate during the last decade have been so on the basis of their HAI[11] (besides the GNIpc), a relative improvement clearly appears for this indicator. A larger number of LDCs (six) reached the graduation threshold in 2012 than in 2000 (one): Samoa, reaching it in 2000, was joined in 2012 by Tuvalu, Kiribati, Vanuatu, São Tomé and Príncipe, and Myanmar. It cannot be said with certainty that this improvement in their location on the graph would not have been possible without a real progress in their human assets. It may also have been enhanced be the endogenous effect of the reduction in the reference group, or, although less likely, by the small changes introduced in the measurement of the index components.

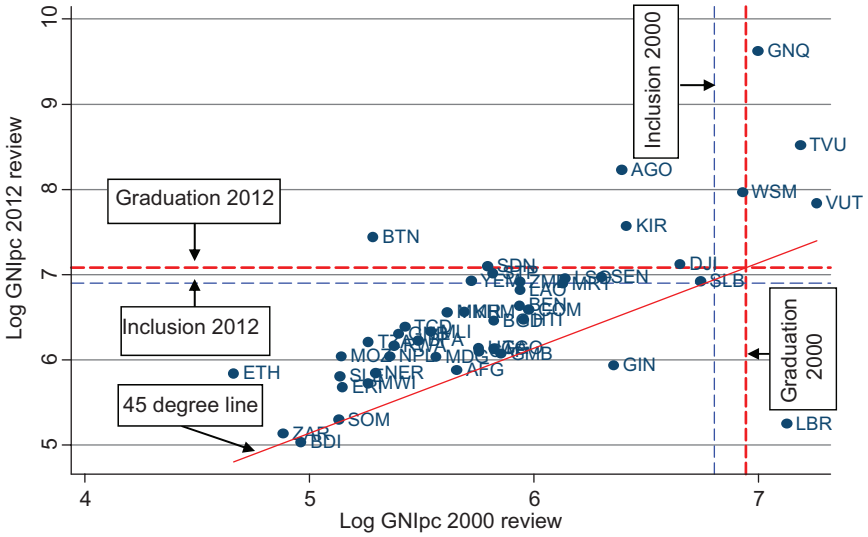
With respect to the GNIpc criterion, an absolute level not changing in real terms over time, the results are of course clearer. They show a global move towards the graduation threshold (i.e. the increased low-income upper threshold) between 2000 and 2012 (as presented in Figure 3.4). Nine countries fulfilled the graduation

threshold in 2012, compared with only four in 2000. Only one country (Liberia) met the threshold in 2000 without meeting it in 2012. Most of the LDCs (exceptions are Guinea and Liberia) are above the 45 degree line, which shows an increase in the level of GNIpc. A higher proportion of LDCs are close to the income graduation threshold in 2012 than were in 2000.

As a result, all the graduation eligibilities have been obtained from the GNIpc and the HAI (Maldives, Tuvalu, Samoa, Vanuatu, etc.). It should be recalled that the evolution observed in the position with respect to the relative HAI and EVI criteria should not be taken as a measure of the real change in the level of human assets or of economic vulnerability (a measure requiring the setting up of a homogeneous series of these two indices, as is done in Cariolle and Guillaumont 2011 and in Korachais 2011). It is an evolution with regard to moving thresholds, determined from the definition of the indicators prevailing at each review. Drawing from the previous graphs, it is possible to identify which countries, besides those meeting two criteria of graduation, are closer to graduating by no longer reaching at least two inclusion criteria. It seems that there are only two, Lesotho and Solomon Islands. Senegal, no longer an LIC, is very close to the EVI inclusion threshold. It should be noted that we found Solomon Islands likely to meet the HAI graduation criterion, depending on the definition of the reference group.

The chance of those countries to move forward in the direction of graduation and cross the thresholds should also be assessed with regard to the trend they show in their relative position.

Figure 3.4 Positions of LDCs with regard to log of GNIpc 2012 and log of GNIpc 2000 reviews



Note: The 45 degree line has been drawn from the intersection of the graduation threshold lines. It does not go through the inclusion thresholds intersection since the margins between the graduation and the inclusion thresholds have changed

3.2.3 Country evolutions with regard to the set of criteria: resulting LDC groups

In a second empirical exercise, we present for each country on a graph its position with respect to the graduation and inclusion thresholds over the last five triennial reviews.[12] For each country, and each criterion indicator, we transform its value into the relative deviation with respect to the inclusion threshold as follows:

$$RelativeX_{it} = \frac{100 * (absoluteX_{it} - inclusion_t)}{inclusion_t}$$

where $relativeX_{it}$ and $absoluteX_{it}$ are respectively the relative and absolute values of variable X (EVI, HAI or GNIpc country level value, inclusion and graduation thresholds) of LDC i at time t (2000, 2003, 2006, 2009 or 2012). Here *inclusion* represents the inclusion threshold of the indicator considered. Since an increase in the index is an improvement for HAI and the reverse can be said for EVI,[13] the difference (100 – EVI) is instead used with regard to this criterion and to make the interpretation easier. Thus, all inclusion thresholds are represented on a horizontal line at zero on the vertical scale; a country does not fulfil the inclusion criterion if its relative value is below this line. All the graduation thresholds before 2003 are represented by a horizontal line scaled at 15 (since before 2003 the margin between the inclusion and graduation thresholds was 15 per cent for all three criteria), while from 2003 the horizontal line representing the graduation thresholds of EVI and HAI is 10, and that of GNIpc is 20 (according to the respective margins of 10 per cent and 20 per cent applied from this time). The country meets the graduation criterion if its relative value is above the horizontal line representing the graduation threshold. Similarly, the horizontal line scaled at 140 is the graduation threshold applied with the income-only rule (according to which, countries reaching 2.4 times the GNIpc inclusion threshold may be considered as eligible for graduation). All the GNIpc above 140 are brought back to 140 to make the graph readable, meaning that above 140, the graph does not indicate actual scores.

It is worth noting that the evolution of EVI is affected by the changes in the index definition; an example is given by Bangladesh, where for 2012 we can observe seemingly an increase of vulnerability on its graph as well as a decrease of the positive deviation of EVI from the graduation threshold, clearly due to the change in the EVI definition. So, the evolution of the relative indicator used does not measure structural change per se, as can be done with the retrospective EVI calculated at Ferdi over a long period (Cariolle and Guillaumont 2011). But it shows to what extent a country is becoming closer to the current graduation criteria. It should be underlined that in this paper we only consider the evolution of countries with regard to moving HAI and EVI criteria and thresholds, not their structural transformation per se, as we do elsewhere (Guillaumont et al. forthcoming; Guillaumont 2013; Cariolle et al. 2014). Of course, the IPoA can be expected to accelerate or induce such a transformation, but its possible and relative impact on the various LDCs cannot be assessed in this chapter: it is as if the assumption was made that this impact does not differ among LDCs.

Box 3.1 EVI move towards the graduation threshold: a Bangladesh puzzle

At the 2009 review of the list of the LDCs, Bangladesh had the LDC lowest level of EVI (23.2), putting it quite beyond (−39 per cent) the graduation criterion (set at 38). This deviation from the graduation threshold had been increasing during the previous years (being respectively −10.6 and −32.2 at the 2003 and 2006 reviews), which could be seen as progress towards graduation through declining structural economic vulnerability. But at the 2012 review the size of the deviation suddenly decreased, with an EVI estimated at 32.4 for a threshold of 32, meaning that Bangladesh was no longer meeting the graduation threshold (deviation of +1.25 per cent), while Nepal, Guinea and Tanzania, less well ranked than Bangladesh in 2009, were still meeting the graduation criterion.

The lower level of the graduation threshold (32 instead of 38 in 2006 and 2009) has contributed to the deterioration of the position of those countries that have reached the threshold in 2009, including those (quoted above) still meeting it in 2012. But it cannot explain the dramatic change in the ranks. This change results from the revision in the definition of EVI that occurred between 2009 and 2012.

While between these two reviews (2009 and 2012) the 'official' or 'review' EVI increased from 23.2 to 32.4 (+9.2), the EVI, re-estimated on the basis of an unchanged definition, decreased: on the basis of the 2006–09 definition, with new data, it moved from 22.1 to 19.1 (−3.0); on the basis of the 2012 review definition, still with new data, it moved from 34.1 to 32 (−2.1), suggesting that some structural progress with regard to vulnerability has been going on.

Which kind of change in the definition of EVI resulted in the increase of the official EVI? The major change is in the composition or weighting of EVI, namely the reduction by half of the 25 per cent weight given in 2006–09 to the population size, a major factor of Bangladesh's low EVI, with the lost 12.5 per cent having been allocated to a new component, the share of population located in low coastal areas, which is significant in this country. Between the 2009 and 2012 reviews, this change accounts for an increase by 8.8, nearly one hundred per cent of the increase by 9.2 in the Bangladesh official EVI. But it is not enough to explain the difference between the increase in the official EVI and the decrease of EVI with an unchanged definition (by 2.1 to 3.0), due to an improvement in its components. The missing factor is a change in the way in which each component has been measured and updated, the impact of which (on official EVI) has also been significant (by more than +3).

The source of the difference between the change in the review EVI and in an EVI with constant definition is even better illustrated in a longer period, from the 2006 to the 2012 review: while the review EVI increased from 25.8

(*continued*)

(*continued*)

to 32.4 (+6.6), the unchanged EVI decreased from 23.5 to 19.1 (−4.4), on the basis of the 2006–09 review definition, giving evidence of structural progress. The change in the composition (or weighting) of the review EVI contributed by 8.4, more (by 1.8) than the official increase of 6.6. The change in the way in which some components have been calculated had another positive impact on the review EVI: in particular, the index of natural shock was calculated in 2006–09 from the homeless indicator and in 2012 from the broader indicator of the share of population victims of natural disaster; also important are the change in the calculation of the remoteness indicator, and to a smaller extent the change in length of the period on which the export instability has been calculated. All these changes in the method of measurement of the EVI components contributed to increasing the EVI by 4.5. But some updating of data when the retrospective EVIs were calculated had a small impact in the opposite direction (by −1.9). Taken together, these three factors (8.4+4.5–1.9=11) explain the gap between the increase by 6.6 of the review EVI and the decrease by 4.4 of the EVI calculated on the basis of the 2006 definition, a decrease which only results from the improvement of the EVI components. Similar results are obtained using the 2012 definition for the retrospective EVI.

Only the evolution of an EVI calculated through a constant definition (involving both the same weighting and the same measurement of components), as is done in the Ferdi retrospective EVIs, may reflect a structural economic change, a change which did occur in Bangladesh, although modestly (calculations made at Ferdi with Joël Cariolle).

The detailed country results obtained from this exercise, here summarised in two tables and eight figures, each of which represents an LDC, are available upon request. LDCs can be divided into several separate groups according to the trend towards graduation. Tables 3.1 and 3.2 present these different sub-groups, the former classifying a positive trend in six groups, the latter classifying negative trends in two groups. Each group among these eight is illustrated by a figure related to one country.

Countries presenting a positive trend towards graduation criteria are presented in Table 3.1. The first column includes six LDCs for which positive trends have led to eligibility for graduation, according either to the two criteria rule (four countries) or to the income-only rule (two countries). The other five columns classify those 12 LDCs that, without becoming eligible for graduation, have shown evidence of positive trends towards graduation criteria (GNI/HAI, GNI/EVI, EVI/HAI, GNI/EVI/HAI). Depending on the initial level of the corresponding indicators, these countries present more or less good prospects for graduation. Figures 3.5–3.10, respectively giving the evolution in Vanuatu, Angola, Lesotho, Benin, Bangladesh and Laos, illustrate each case of a positive trend towards graduation.[14]

On the other hand, 30 LDCs show negative trends towards two or three graduation criteria. As shown in Table 3.2, this group includes LDCs presenting a positive trend

Table 3.1 Countries with positive trends towards graduation criteria (2000–12)

Eligibility	Income-only rule (three LDCs)	HAI and GNI (ten LDCs)	EVI and GNI (one LDC)	EVI and HAI (two LDCs)	The three criteria (two LDCs)
Already eligible	***Equatorial Guinea*** Angola	***Samoa*** ***Vanuatu*** Tuvalu Kiribati			
Not yet eligible	Timor-Leste	Bhutan Cambodia Lesotho São Tomé Príncipe Solomon Islands Yemen	Benin	Bangladesh Nepal	Laos Senegal

Note: In bold italics are countries whose graduation has been already decided; in italics only is a country for which graduation has been recommended by the CDP but not decided

for only one criterion (with a negative trend for the other two) and those without any positive trend (three negative trends), respectively 17 and 13 countries. The two groups (or columns) of Table 3.2 are respectively illustrated below by Figures 3.11 and 3.12, giving the evolution in Djibouti and Burundi.

Figure 3.5 Relative evolution of Vanuatu's position with respect to the graduation and inclusion thresholds over the last five triennial reviews

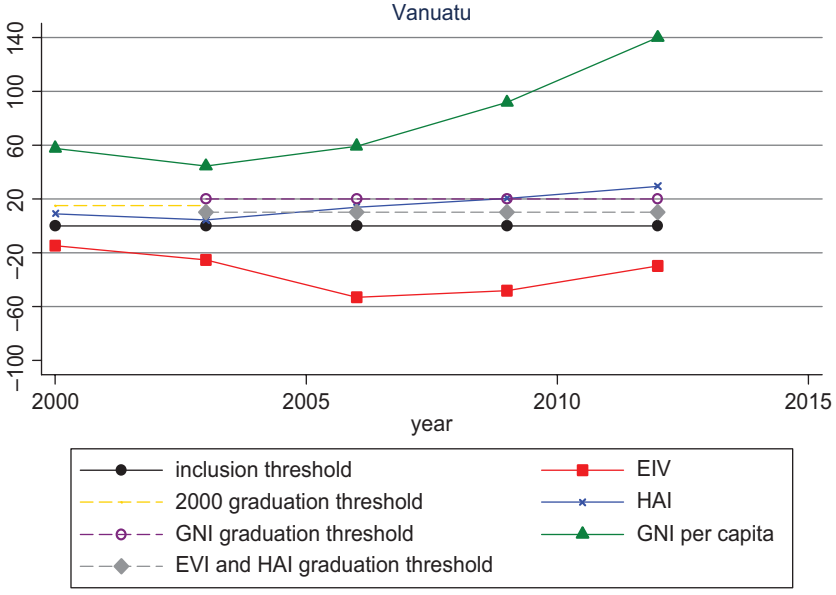
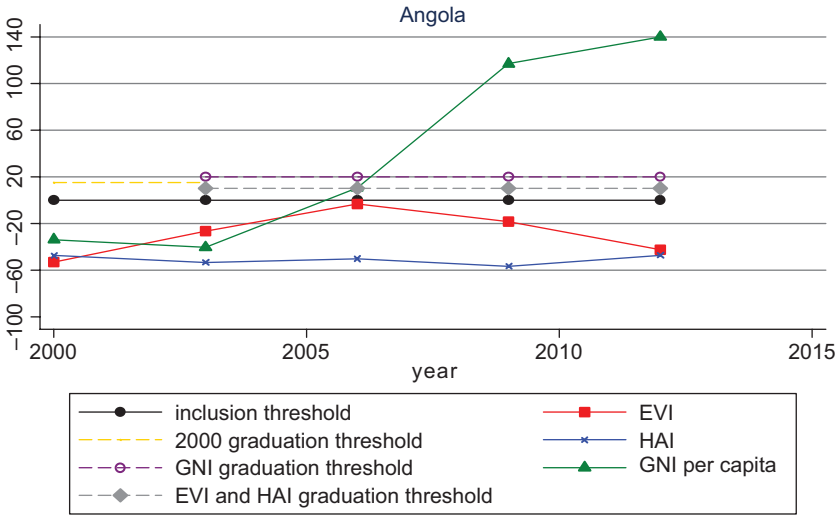


Figure 3.6 Relative evolution of Angola's position with respect to the graduation and inclusion thresholds over the last five triennial reviews



Looking again at Table 3.1, it can be seen that, among the 18 countries having shown a positive trend for two criteria, two-thirds of them (12) have registered this trend both for GNIpc and for the HAI (see for instance Figure 3.5 for Vanuatu). It is the case for all six LDCs already found eligible, with the two exceptions of oil exporters (Equatorial Guinea and Angola, both having already met the income-only criterion discussed below; see for instance Figure 3.6 for Angola).

Figure 3.7 Relative evolution of Lesotho's position with respect to the graduation and inclusion thresholds over the last five triennial reviews

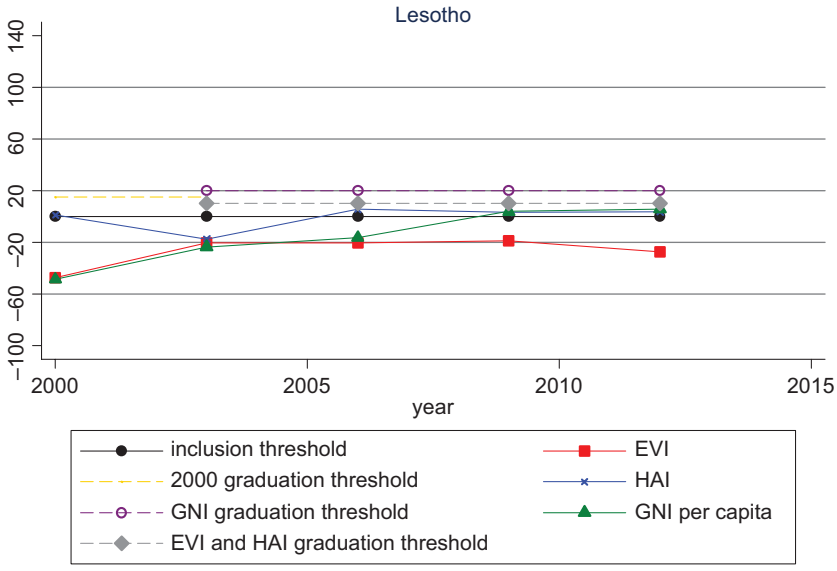
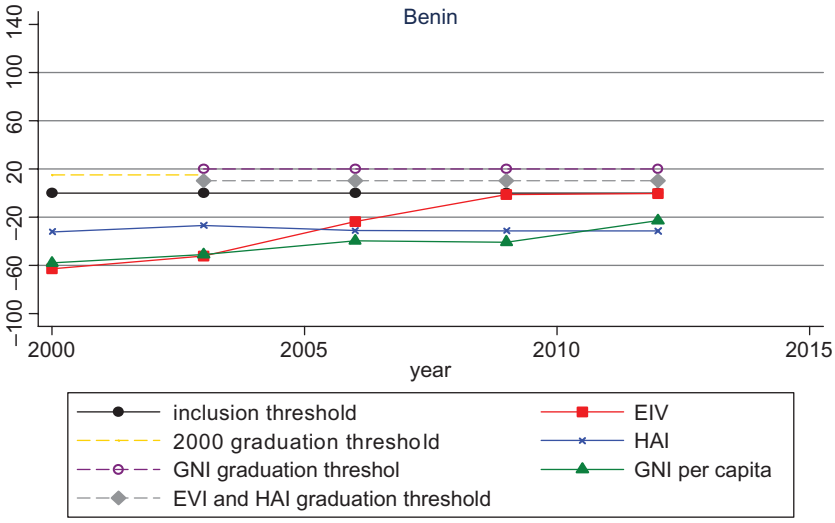


Figure 3.8 Relative evolution of Benin's position with respect to the graduation and inclusion thresholds over the last five triennial reviews



Among the 17 countries with negative trends towards two graduation criteria and a positive trend towards one criterion, as presented in the first column of Table 3.2, 12 have such a positive trend for the EVI, four for the GNIpc and only one for HAI.

On the whole, putting aside oil exporters, there seems to be a stronger link between progress towards the GNIpc and HAI criteria than between progress towards the

Figure 3.9 Relative evolution of Bangladesh's position with respect to the graduation and inclusion thresholds over the last five triennial reviews

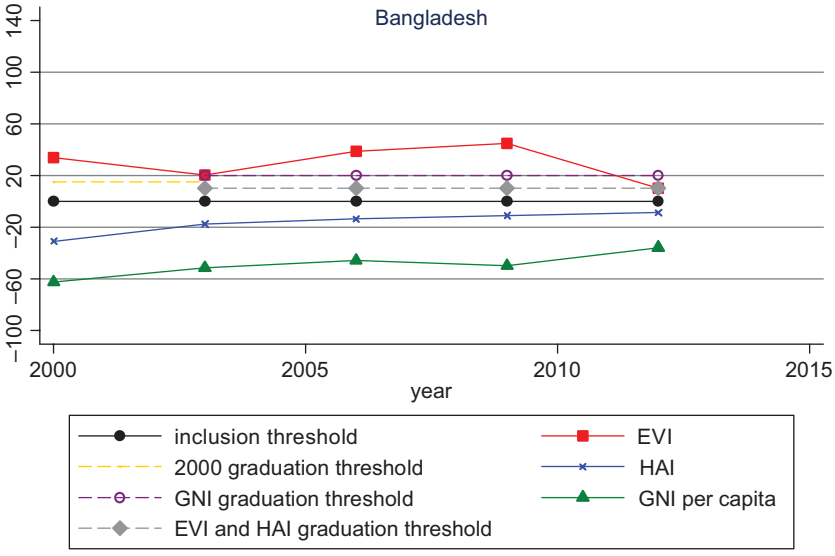
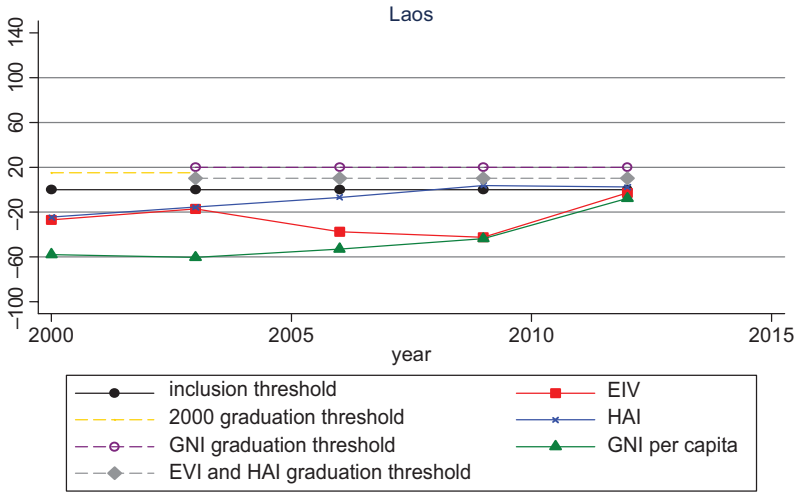


Figure 3.10 Relative evolution of Laos's position with respect to the graduation and inclusion thresholds over the last five triennial reviews



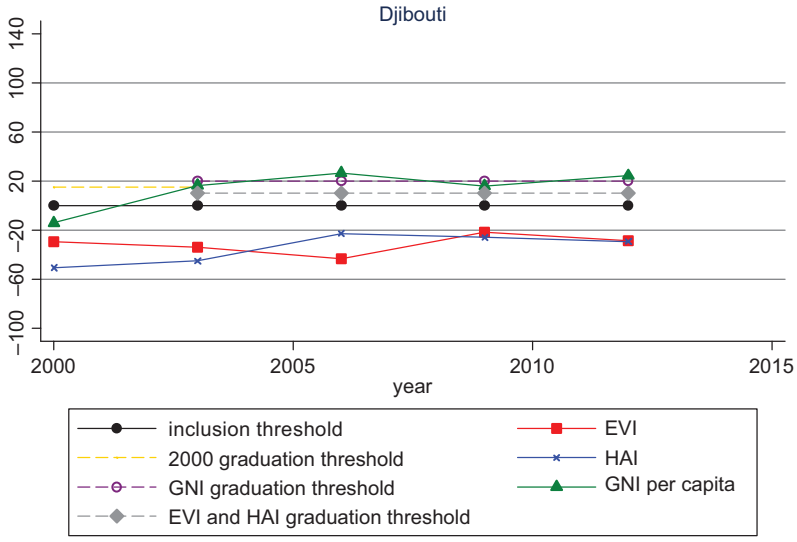
GNIpc and EVI criteria, and there is little prospect of graduation without an increase in the GNIpc, which may be the main driver of graduation.

In the near future, it seems that few countries are likely to graduate from the two criteria rule, due to the inertia of the relative position of the LDCs with respect to the HAI and EVI criteria. This does not mean that HAI and EVI are not important for graduation. The progress in their absolute level is the key of income growth, except in

Table 3.2 Countries with negative trends towards graduation criteria (2000–12)

Positive trends in only one criterion (17 LDCs)	All trends are negative (13 LDCs)
Djibouti (GNI)	Burundi
Mauritania (GNI)	Chad
Sudan (GNI)	Comoros
Zambia (GNI)	Eritrea
Madagascar (HAI)	Guinea Bissau
Afghanistan (EVI)	Haiti
Burkina Faso (EVI)	Liberia
Central African Republic (EVI)	Malawi
Democratic Republic of the Congo (EVI)	Mozambique
Ethiopia (EVI)	Myanmar
Gambia (EVI)	Rwanda
Guinea (EVI)	Sierra Leone
Mali (EVI)	Somalia
Niger (EVI)	
Togo (EVI)	
Uganda (EVI)	
Tanzania (EVI)	

Figure 3.11 Relative evolution of Djibouti's position with respect to the graduation and inclusion thresholds over the last five triennial reviews

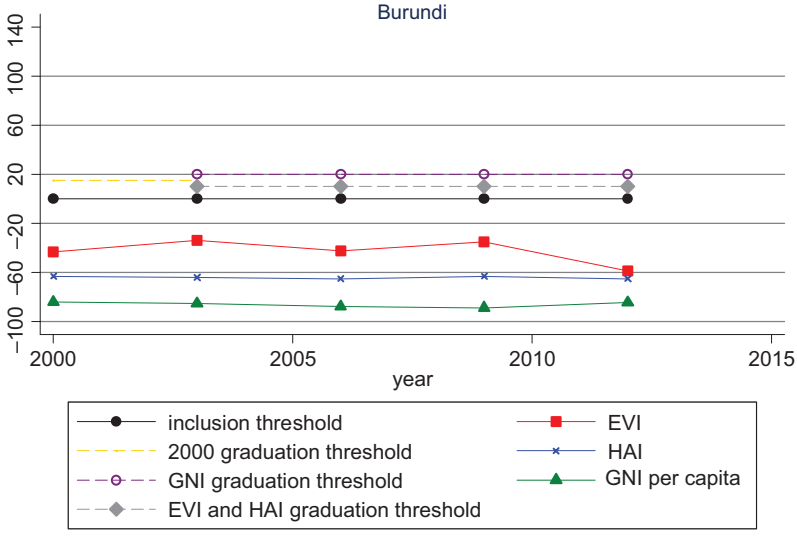


the case of rapid oil export growth. EVI and HAI should continuously be monitored, using retrospective indices measured on an unchanged basis. There is therefore a need for an integrated approach to graduation prospects.

3.2.4 Implications for graduation prospects

Caveats should be brought to the interpretation and conclusions of the previous tables. The focus has been put on the trends, but the impact of these trends for the

Figure 3.12 Relative evolution of Burundi's position with respect to the graduation and inclusion thresholds over the last five triennial reviews



likelihood to graduate depend on the level already reached. A positive trend gives a relevant indication of this likelihood if the country is already close to the graduation threshold for the criterion considered. We are then led to return to the results of the beginning of this section.

Few LDCs both are close to two graduation thresholds and show evidence of positive trends towards them. Those countries close to the EVI threshold are still rather far from the HAI or the income threshold: Nepal, Guinea and Tanzania already meet the graduation threshold, Ethiopia, Togo, Democratic Republic of the Congo and Central African Republic, located between the inclusion and the graduation thresholds, are all far from the former group except Nepal, which is close to the HAI inclusion threshold and shows a positive trend for the two indicators.

The association between the income and HAI criteria has been a more successful factor of graduation: it has led to the eligibility of six countries, graduation of which has been decided in four cases (Cape Verde, Maldives, Samoa, Vanuatu), the other two being Tuvalu and Kiribati. It is not sure whether this will be as effective in the near future: it may only concern Solomon Islands and Lesotho. Besides the two oil exporters, the LDCs meeting the graduation criteria have essentially been countries benefiting from a relatively high level of human capital, which in turn has supported their economic growth.

On the whole, during the next decade the potential of graduation on the basis of the initial two criteria rule seems limited and it will fundamentally depend on the principle applied for designing the reference group. With the group number remaining unchanged, the probability of graduation on the basis of this rule will be low. It will of course increase if the group is allowed to progressively shrink as a result of the income growth of non-LDCs and of the graduation of some LDCs from the category, which will then become more and more endogenous.

Briefly stated, with the number of the reference group maintained at around 60 countries, as in 2012, and with the normal length of the process leading to fully meet the criteria, one cannot expect more than very few countries to graduate through the ordinary two criteria rule: only those already found eligible the first time in 2012, plus one to three others.

Are there more countries likely 'to meet the criteria' thanks to the income-only rule?

3.3 Graduation prospects according to the income-only rule

According to the income-only criterion introduced in 2005, eligibility for graduation is possible when a country reaches twice the ordinary income graduation threshold, that is to say when its income per capita is at least 240 per cent of the inclusion threshold, which is the threshold used by the World Bank to identify LICs.

It is accordingly possible to look for the LDCs likely to reach such a level at the coming reviews, or before 2020. Which countries are likely to meet this income-only criterion in order to be recommended for graduation in the reviews before 2020 (2015, 2018)?

3.3.1 Assuming that each LDC is growing as in the 2000s

To identify these countries, we need to make an assumption about growth prospects. To do that, we first suppose they maintain their rates of economic growth of the past decade during the next one. In addition, supposing the rate of growth of GNI to be similar to that of the gross domestic product (GDP), we first estimate the rate of growth of the per capita GDP from 2001 to 2011 by the ordinary least-squares method and from data of the online *World Development Indicators*. Using these growth rates, we then extrapolate the GNIpc from the latest available data. The results obtained are summarised in Table 3.3. They show that seven LDCs are likely to reach 2.4 times the level of the low-income threshold before 2020, including four ones already graduating. Eleven LDCs are expected to reach this threshold in 2030.

A variant of this analysis is to consider the situation in which the previous average (extrapolated) growth rate of each LDC per annum is uniformly increased by 1 per cent. This might be considered as a result of the implementation of IPoA, uniform for all LDCs. Table 3.3 also presents the results of this analysis. They are similar to the previous figures for 2020, but four additional countries are likely to reach 2.4 times the low-income threshold in 2030 (three of them in 2024).

An alternative approach to this analysis is to assess in how many years each LDC is likely to reach the threshold, according to the present level of income per capita and the estimated rate of growth. Table 3.4 shows the results of this exercise. Based only on the income rule and the above assumptions, the number of LDCs not meeting this graduation criterion will decrease by half just before 2050. Those countries that have registered very low or even negative rates of growth during the last decade will not be able to meet the income-only criterion during this century, unless their economic growth is boosted.

3.3.2 Assuming IPoA fully effective: each LDC is growing at the 7 per cent target rate

One of the objectives of the IPoA is the achievement of 'sustained, equitable and inclusive economic growth in least developed countries, to at least at the level of 7 per cent per annum, by strengthening their productive capacity in all sectors through structural transformation and overcoming their marginalization through their effective integration into the global economy, including through regional integration' (United Nations 2011: 6) (see Box 3.1). What does 7 per cent mean? In the context of this sentence it seems to refer to the growth of the GDP. Of course, a goal of 7 per cent of GDP per capita would be very different since LDCs still have high population growth rates.

To assess the relevance of this goal, we first identified countries on track to reach the income graduation criterion if their average GDP growth rate was 7 per cent per year. We assume that they keep their population growth rate of the last decade and calculate the per capita growth rate as the difference between 7 per cent per year and their population growth rate. We then extrapolate the GNIpc from the latest available data (2011). In effect, we assume that the LDCs would benefit from the implementation of

Table 3.3 Countries likely to meet the income-only graduation threshold at the next six reviews if they keep the last decade's growth rate of GNI or grow at the 7 per cent target of IPoA

Review year	2015	2018	2021	2024	2027	2030
List of countries likely to reach the income-only graduation threshold if their per capita growth rates remain those of 2001–10	Angola Bhutan Equatorial Guinea Samoa Timor-Leste Tuvalu Vanuatu (7 countries)	**Idem as 2015**[a] (7 countries)	**Idem as 2018** (7 countries)	**Idem as 2021** (7 countries)	**Idem as 2024+4** Cambodia Lao People's Democratic Republic (PDR) São Tomé and Príncipe Sudan (11 countries)	**Idem as 2027** (11 countries)
List of countries likely to reach the income-only graduation threshold if their economic growth rates increase by 1 per cent, compared with those of 2001–10	**Idem as above** (7 countries)	**Idem as above** (7 countries)	**Idem as above** (7 countries)	**Idem as above+3** Lao PDR São Tomé and Príncipe Sudan (10 countries)	**Idem as above** (11 countries)	**Idem as above+4** Afghanistan Djibouti Lesotho Zambia (15 countries)
List of countries likely to reach the income-only graduation threshold if their economic growth rates were 7 per cent	**Idem as above+1** Kiribati (8 countries)	**Idem as 2015** (8 countries)	**Idem as 2018** (8 countries)	**Idem as 2021+4** Djibouti Lesotho São Tomé and Príncipe Sudan (12 countries)	**Idem as 2024+1** Lao PDR (13 countries)	**Idem as 2027+1** Zambia (14 countries)
List of countries likely to reach the income-only graduation threshold if their per capita economic growth rates were 7 per cent	**Idem as above** (8 countries)	**Idem as 2015** (8 countries)	**Idem as 2018+3** Djibouti São Tomé and Príncipe Sudan (11 countries)	**Idem as 2021+6** Lao PDR Lesotho Senegal Solomon Islands Yemen Zambia (17 countries)	**Idem as 2024+1** Mauritania (18 countries)	**Idem as 2027+6** Bangladesh Benin Cambodia Chad Comoros Haiti (24 countries)

Box 3.2 Not confusing goals and means: income growth and structural transformation

The IPoA clearly states that the goal is sustained growth which can be obtained by the strengthening of productive capacity through structural transformation. Whatever the usual reservations about the meaning of income growth, it is a notion rather clearly measured. Structural transformation is more ambiguous and its content has to be adapted to the specific situations of countries. The valuable transformation is that which leads to a sustained growth. When growth has been sustained and is lasting enough to lead to a significant level of income, some structural change has probably occurred. Is it necessarily sustainable in the future? Obviously, never. Economic history shows many declines of prosperous nations. But the countries having experienced sustained growth had the means to adapt themselves to new situations, in particular by reducing the two structural handicaps featuring LDCs, and first by enhancing their human capital. While the IPoA gives orientations for structural transformation, the choice of the precise transformation likely to promote growth in a given country can only be the country's choice. The most useful monitoring of the structural transformation should refer to the evolution of the indicators on which the two structural handicap criteria rely: EVI and HAI.

the IPoA all the more if their previous growth was low. The results are presented in the third row of Table 3.3. Only one additional country (Kiribati) reaches the income criterion threshold by 2021 as compared with the previous assumption.

Let us now suppose that the 7 per cent target refers to the per capita GDP growth rate, which is a very high rate indeed, reached during the previous decade by only the two oil exporters (Angola and Equatorial Guinea). The results obtained are of course better; they are summarised in the fourth and last row of Table 3.3. Eleven LDCs are likely to reach the income criterion threshold by 2021, and 20 by 2030.

3.3.3 Back to the rationale of the category: the structural likelihood to graduate

The LDCs have traditionally been defined as LICs suffering from structural handicaps to growth (more recently to sustainable development). As such, they are the countries which are the most likely to stay poor. Their 'least development' can be expressed in a synthetic measure, the natural expected income, obtained from the combination of the indices corresponding to the three criteria: present level of income per capita, human capital and economic vulnerability. As explained in Guillaumont (2009a),[15] the expected natural per capita income is the per capita income that could be expected if each country's structural handicaps remained unchanged, and all other factors affecting growth were identical across all countries. More precisely, it is the future per capita income calculated from its present level, and from the present levels of human

Table 3.4 Year (before 2050) at which each LDC is likely to meet the GNIpc graduation threshold, assuming its rate of growth is that of 2000–10

Country	Year of reaching graduation threshold
Equatorial Guinea	Already reached
Samoa	Already reached
Angola	Already reached
Vanuatu	Already reached
Timor-Leste	Already reached
Tuvalu	Already reached
Bhutan	2014
Lao PDR	2025
Sudan	2027
São Tomé and Príncipe	2027
Cambodia	2027
Afghanistan	2032
Zambia	2035
Chad	2036
Bangladesh	2037
Lesotho	2037
Mauritania	2039
Djibouti	2039
Ethiopia	2040
Solomon Islands	2041
Rwanda	2042
Guinea	2045
Mozambique	2048
Uganda	2048
Tanzania	2049

capital and economic vulnerability. The calculation is based on the assumptions that the relative levels of human capital and economic vulnerability remain roughly unchanged during the estimation period, that their marginal impacts on growth also remain the same and that all other factors affecting growth are identical for all countries. Countries can be ranked by their risk of having a per capita income below a certain level in a given future for reasons not depending on their present and future policy. The reverse order corresponds to a ranking in a structural probability to be graduated in x years. The advantages of this approach come from its ability to take into account the three structural features/criteria identifying the LDCs, and to lead to ranking LDCs in 2020 (or later) according to this index.

This method should not be seen as assuming that there is no impact of the IPoA on the rate of growth. As the previous methods applied a reliance on extrapolation of past growth, possibly increased by a given and uniform rate, it only supposes that the impact of growth is the same among LDCs. (On the other hand, relying on a uniform projected rate of growth supposes a differentiated impact.)

Assuming each LDC is growing at its expected structural or natural rate

Methodologically, as is done in Guillaumont (2009a), economic growth is regressed on the logarithmic forms of initial per capita income level (Y_0), the EVI and the complement to 100 of the HAI (100–HAI), as follows:

$$growth(Y) = \alpha \log(Yo) + \beta \log(EVI) + \delta \log(100 - HAI) + \varepsilon$$

The logarithmic specification is used to capture interaction between the two handicaps, as assumed by the identification through complementarity criteria (mutual reinforcement of handicaps). The estimated coefficients obtained (assumed unchanged) are used for the projection of a virtual future ('natural') income from the latest value of the three variables (present income and handicaps assumed unchanged).

In Guillaumont (2009a) a cross-sectional estimation of the coefficients over the period 1970–2000 was used for the projection to 2025. The ranking obtained was consistent with ongoing graduation.

Here, we make new estimations of the impact of the structural handicaps (and convergence factor) on per capita income growth, with the same specification of the criteria variables. Unlike Guillaumont (2009a), generalised method of moments (GMM) estimations on a panel of five-year periods over 1970–2010 are used. Table 3.5 presents the results of the regression. The coefficients of the logarithmic form of initial GNIpc, 100–HAI and EVI are negative and significant, still consistent with the previous findings of Guillaumont (2009a). The sample of 73 countries includes 29 LDCs.

This result underlines the important role played by HAI and EVI in economic growth, and the existence of conditional economic convergence among developing countries (including LDCs) when these variables are taken into account.

Table 3.5 GMM estimation of growth impact of structural handicap (HAI and EVI)

Dependent variables	GNI per capita growth rate
Log of initial GNIpc	–0.025***
	(3.22)
Log of (100–HAI)	–0.032***
	(3.80)
Log of EVI	–0.010*
	(1.96)
Constant	0.328***
	(3.93)
Observations	382
Countries	73
AR(1)	0.000
AR(2)	0.874
Hansen OID *p* value	0.153

Note: Absolute *t* statistics in parentheses.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 3.6 2020 expected natural income ranking

Country	2020 ranking	Country	2020 ranking
Equatorial Guinea	1	Chad	25
Tuvalu	2	Mali	26
Angola	3	Guinea-Bissau	27
Samoa	4	Burkina Faso	28
Vanuatu	5	United Republic of Tanzania	29
Timor-Leste	6	Rwanda	30
Kiribati	7	Uganda	31
Bhutan	8	Togo	32
Djibouti	9	Central African Republic	33
Sudan	10	Gambia	34
São Tomé and Príncipe	11	Nepal	35
Senegal	12	Mozambique	36
Lesotho	13	Madagascar	37
Yemen	14	Guinea	38
Solomon Islands	15	Afghanistan	39
Zambia	16	Niger	40
Mauritania	17	Ethiopia	41
Lao People's Democratic Republic	18	Sierra Leone	42
Benin	19	Malawi	43
Comoros	20	Eritrea	44
Cambodia	21	Somalia	45
Myanmar	22	Liberia	46
Haiti	23	Democratic Republic of the Congo	47
Bangladesh	24	Burundi	48

The growth of per capita income to 2020 and 2030 is then simulated, starting from the level of the criteria variables used in the 2012 review, except for EVI, which is recalculated according to the method of 2006–09 and is more appropriate for this exercise.[16] The results are presented in Table 3.6. They are close to those of Guillaumont (2009a), except for new oil exporters.

The half of LDCs likely to be the closer to graduation at the end of the next decade

Let us first look at the ten countries which are most likely to graduate: the four presently graduating countries (Samoa, Equatorial Guinea, Vanuatu and Tuvalu), two other LDCs already found eligible for the first time in 2012 (Angola and Kiribati) and four other ones (Timor Leste, Bhutan, Djibouti and Sudan); half of these latter six not yet graduating being oil exporters. Half of the 48 Istanbul LDCs which are the most likely to graduate for structural reasons include these 10 previous countries and 14 other ones of various kinds (including 4 island and 2 landlocked countries, 3 mineral and 3 manufactures exporters). Among the other half of the countries, some may catch up the top group as a result of rapidly increasing exports of fuels or

minerals recently discovered (such as Mozambique). This underlines once again that the present exercise is illustrative of the factors at work, and is not at all a prevision. It is clear that graduation prospects are first determined by those structural variables featuring the LDCs, but also dependent on new exogenous factors not captured in the criteria indicators, on the respective quality of policies implemented by the countries and on the benefits they will be able to draw from international support measures.

3.4 A step further: revising or simply refining the graduation criteria?

It is always possible to revise the graduation criteria so that they will be met in 2020 by half of the countries that were still LDCs at the time of the Istanbul conference. But, of course, if a revision is needed, it should be consistent with the principles of the category, and be equitable over time with regard to the previous practices of graduation. It will, moreover, possibly make graduation easier.

The previous and purely illustrative exercise (Section 3.3) invites us to stick to the principles of the category by simultaneously considering the present level of income per capita and the two kinds of structural handicaps to growth. The expected natural income could be used as a revised income-only criterion, with an appropriate threshold to be determined. Since it would not be acceptable to rely on an econometric estimation, as it would be both debatable and politically not transparent, another composite index averaging the three indicators of low income per capita, low human capital and economic vulnerability, as presented in *Caught in a Trap* (Guillaumont 2009a), could also be used, all the more because this index would be available for a larger number of countries than the group of LDCs. But to some extent it would blur the meaning of the category, or would involve a revision of the inclusion criteria as well.

A minor revision, applicable, if needed, only to graduation and fitting the rationale of the category, is possible, and has been already considered by the CDP. The CDP agreed in 2005 to consider simultaneously two structural handicaps (HAI and EVI) in such a way as to take into account some degree of substitutability among the criteria and the possible combined impact of the handicaps as captured by the HAI and EVI (CDP 2005). Actually, in 2006, before recommending Samoa for graduation, the CDP noted that the average of the two indices, (100 –)HAI and EVI, was 'at a level similar to that of Cape Verde, whose graduation has been decided by the General Assembly'.

This previous additional information can become a more formal graduation rule, added to the present ones: let us, as is done and discussed in Guillaumont (2009a), define the 'structural handicap index' (SHI) as the combined level of 100–HAI and EVI; then we can determine thresholds from the reference group of countries in the same way that it is done for each of the two present HAI and EVI indices. The SHI index can be calculated as an arithmetic average, which supposes a perfect substitutability between the two handicaps, or as a reverse geometric average, supposing a limited substitutability, which is closer to the rationale of the category (it means that the handicaps interact to make growth more difficult).

We have applied these two measures of SHI to the figures of the 2012 review, with a graduation threshold put at the quartile level (implicit inclusion threshold) less 10 per cent. The list of LDCs meeting this alternative graduation threshold includes only one more country with the arithmetic average, Nepal, and two countries with the reverse geometric average (Nepal and São Tomé and Príncipe). It should be noted that with the arithmetic average of Tuvalu and Kiribati would not have been eligible, whereas it would have been so with the geometric average, as Kiribati shows a much higher SHI than Tuvalu. Regarding the prospects, the LDCs that are the closest to the threshold would be São Tomé and Príncipe, Lao People's Democratic Republic (PDR), Mozambique and Tuvalu with the arithmetic average, and Mozambique with the geometric average. Next on the list and just above the implicit inclusion threshold is Bangladesh,[17] as well as Lao People's Democratic Republic with the geometric average. Thus a simply revised or refined additional rule of graduation, incorporating two indicators, income per capita and SHI, the latter involving a partial substitutability between HAI and EVI, would remain consistent with the previous practice as well as the principles, and at the same time would open up some new prospects of graduation.

3.5 Conclusion

The IPoA set up a goal of enabling half of the number of LDCs to meet the graduation criteria in 2020, a goal recalled by two resolutions of the UN General Assembly in December 2012, the first one on 'Smooth transition for countries graduating from the list of least developed countries' (A/C.2/67/L.51) (UN General Assembly 2012a), the second one on 'Follow-up to the Fourth United Nations Conference on the Least Developed Countries' (A/C.2/67/L.53). Although graduation prospects are substantial, they are likely to significantly lag behind the IPoA goal. The first reason for this is the time needed for a country to 'meet the criteria', since this country should be found eligible at two successive triennial reviews, strictly speaking no later than at the 2015 and 2018 reviews! It should be noted that a country meeting the criteria in 2018 cannot effectively be graduated before 2021. A second reason is that LDCs likely to meet the graduation criteria in this time frame include the three countries whose graduation has already been decided but is not yet effective (Samoa, Equatorial Guinea, Vanuatu), the three others recommended (Tuvalu) or found eligible for a first time (Angola and Kiribati) and those few countries that could be found eligible for the first time in 2015. According to the traditional two criteria rule, it seems that only Solomon Islands could meet the HAI criterion (assuming the reference group does not shrink) and the GNIpc criterion (assuming a rapid economic growth); according to the income-only rule, it could be the case of Timor-Leste and possibly Bhutan, if their growth is sustained (also possibly joined by Kiribati, which already meets the HAI criterion). At the end of the decade, there could be 10 out of the 49 present LDCs that have met the graduation criteria (seven of which having effectively graduated), which amounts to around one-quarter instead of the IPoA goal of one-half.

In the longer term, and possibly as soon as the 2024 review, several other LDCs can meet the income-only criterion if they achieve a rate of growth corresponding to

the 7 per cent target of IPoA. For reasons endogenous to the design of the criteria, and under the assumption that the size of the reference group is unchanged, the key driver of the eligibility to graduate would likely to be the growth of income per capita, if sustained. Economic growth will progressively push LDCs to meet the income-only criterion, while an improvement in the component indicators of HAI and EVI would have little direct impact on the likelihood of graduation, due to the working of these relative criteria, as explained above (it involves a change in the country situation with respect to the criteria thresholds, determined from a reference group maintained at a quasi-constant number). An improvement in HAI and EVI is instead expected to have an impact on graduation as a factor of higher economic growth.

With regard to the last decade's trend of economic growth, only 7 countries among the 48 LDCs of Istanbul, including only one in Africa, are likely to have met in 2020 the only income-only criterion, and only one more country if in all the LDCs the GDP will be growing at the 7 per cent target rate of the IPoA. The General Assembly, in its December 2012 resolution on 'Follow-up to the Fourth United Nations Conference on the Least Developed Countries' (A/C2./67/L.53: 3), expressed '*serious concern* that after a decade of welcome, steady economic growth, least developed countries faced significant challenges in sustaining economic growth, and their economies were projected to grow by an average of 4.1 per cent in 2012, considerably below the annual 7 per cent set out in the Istanbul Programme of Action'.

Of course, the growth of the GNIpc may be influenced by exogenous factors other than the structural features identifying LDCs. Such factors have already been working during the last decade and are reflected in the various approaches of this chapter, the main one of which being the international price of commodities, in particular oil. But some other factors may appear in the next decade, in particular new oil or mineral exports, as a result of recent discoveries. Another set of highly important factors is the improvement in policies. Difficult to assess and predict, this factor could not be considered in this chapter.

Nor was a significant change in the graduation rules considered. We have however drawn attention to the implications of the composition of the reference group of countries used to determine the eligibility thresholds, as well as to the simultaneous consideration of HAI and EVI in a composite index of structural handicaps.

The rather limited prospects of graduation in the period covered by the IPoA should be an incentive to implement and, hopefully, reinforce the support measures agreed upon in Istanbul.

Notes

1 This paper is intended to be used both as a contribution to the first report of the LDC IV Monitor and as an input to Guillaumont forthcoming. Preliminary drafts were presented at the LDC IV Monitor meetings in Dhaka (September 2012), Dar es Salaam (February 2013) and London (June 2013), where the authors benefited from useful comments, supplemented by new relevant comments from Ana Cortez, Christophe Bellman, Olav Bjerkholt, Lisa Borgatti and Hoseana Lunogelo. All are

acknowledged, without being responsible for any opinion expressed or possible errors in the present paper.

2 HAI is a composite index relying on four indicators reflecting health and educational status. EVI is a composite index relying on eight indicators reflecting both the size of natural and external recurrent shocks and the structural exposure to these shocks (see UN DESA; CDP website, CDP 2008, 2012; Guillaumont 2009a, 2009b, 2011).

3 Initially Vanuatu, followed by Maldives, Cape Verde (to a lesser extent), then Samoa, Equatorial Guinea (see the history of this process in Guillaumont 2009a). More recently, Vanuatu has again shown resistance.

4 This interpretation of 'to meet the criteria' is consistent with the traditional wording of the CDP about the graduation process. While, for inclusion, three complementary quantitative criteria are to be met (see above) and, for graduation, the thresholds of quantitative criteria are to be met, and they are to be met twice, which is also a graduation criterion. For that reason the CDP in 2005 made a clear distinction between the fact that a country is eligible a first time, and the fact that it 'qualifies' when it meets the graduation thresholds of the quantitative criteria at the next triennial review: it then fully meets the graduation criteria.

5 More LDCs have become MICs as well.

6 After expanding from the 1991 first triennial review, where the number was only 58, to the year 2000. It was 65 for the 2003 and 2006 reviews (cf Guillaumont, 2009a: 54).

7 More precisely, for the countries in the better quartile of the distribution.

8 In 2015, still with the definition of the reference group prevailing until 2009, the reference group would become even smaller, at least by the graduation of Samoa (and of Equatorial Guinea at mid-year).

9 Retaining in 2015 the principle adopted in 2012 for the extension of the reference group would probably lead to the exclusion of four or five non-LDC MICs which were in 2012 (according to the average for 2008–10) above or very close to the low-income threshold increased by 20 per cent (India, Papua New Guinea, Ghana, Cameroon, Nigeria), reducing the group to no more than 54 countries. In that case the inclusion threshold would be between the 13th and 14th ranks. Supposing that all countries improve their HAI and their EVI at the same rate, Solomon Islands and Bangladesh would reach the graduation threshold for HAI and EVI respectively. This would be without implications for the eligibility of Bangladesh, but with a possible eligibility for Solomon Islands, if their economic growth is high enough to make them reach the ordinary income graduation threshold.

10 Another solution considered by the Expert Group Meeting preparing the 2015 review of the CDP is to transform the relative thresholds into absolute thresholds fixed at their present level.

11 Exceptions are the two oil-exporting LDCs: Equatorial Guinea and Angola.

12 This exercise is close to graphs set up at UNCTAD and recently updated (2013, forthcoming), but slightly different from them since here all the indicator values are presented on the same graph, normalised with respect to the inclusion thresholds and expressed in the same direction.

13 See note 2 above for the definition of HAI and EVI.

14 As noted in Box 3.1, the increase of Bangladesh in 2012, following previous decreases in 2006 and 2009, is essentially due to the change in the definition of EVI in 2012. More important for the graduation prospects of Bangladesh is the upward trend in the level of HAI with regard to the (inclusion or) graduation threshold. However, meeting the HAI graduation threshold in the future would involve Bangladesh continuing to improve its HAI level faster than the other countries of the reference group. It would then make the 'atypical approach of graduation' proposed by Bhattacharya and Borgatti (2012) achievable on the basis of the two relative criteria.

15 Guillaumont (2009a), *Caught in a trap*, Chapter 9.

16 The use of the 2006–09 definition instead of the 2012 one is legitimate because the new component added (low coastal area population) is intended to reflect a risk for long-term and sustainable development, but would weaken the relationship of EVI with growth, as estimated in the past and still relevant for the next two decades.

17 Using this additional rule would make it more feasible for Bangladesh to implement the 'atypical approach' suggested by Bhattacharya and Borgatti (2012) to become rapidly eligible by accelerating the improvement of human capital.

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