Commonwealth Youth Development Index

Methodology Report

April 2013

Commonwealth Youth Development Index Background

The objective of the Commonwealth Youth Development Index (YDI) is to help drive the Commonwealth Plan of Action for Youth Empowerment (PAYE) by providing a reliable and informative tool that aggregates key available data on youth development. Since 1998, the Commonwealth Secretariat has made steps towards to achieving these aims through promoting the development a YDI as part of the PAYE. Also recognising the significant need for better measurement and monitoring of youth development, the United Nations Department of Economic and Social Affairs (UNDESA) via the 'World Programme for Action on Youth' has also commissioned research into the feasibility of a proposed YDI. Since 2005, several Commonwealth member states have developed their own youth development indices measuring differences in youth development at the sub-national level.[1] While these indices represent comprehensive and comparable data within nation states, they do not enable a cross country comparison of relative levels of youth development.

In 2012, the Commonwealth Secretariat convened a two day Technical Advisory Committee meeting which mapped out key conceptual basis for domains of Youth Development and strategising of future development. In July 2012, the Institute for Economics and Peace (IEP) was commissioned to aggregate relevant data and develop the methodology for the first Commonwealth Youth Development Index. On October of 2012 IEP presented an inception report summarising key domains and initial data availability scoping which was distributed for feedback to the Commonwealth Technical Advisory Committee. The inception report and the research informing this final report has been based on the conceptual foundations of the expert consultations of the WPAY[2] and the Commonwealth Technical Advisory Committee.

This YDI Report thus follows a long process of consultation with the Commonwealth Secretariat Youth Development Index Technical Advisory Committee, the Commonwealth Secretariat Youth Affairs Division and researchers at the Institute for Economics and Peace. This document contains detailed information on the methodology of the YDI.

For more information on the results and findings of the YDI, please refer to the YDI Report.

---

[1] There are Nigerian, Indian and Cypriot case studies developed and presented at the March 2012 technical meeting.

[2] UNDESA. (2012). Quantitative indicators for the World Programme of Action for Youth Report of the expert group, (December 2011), 12–13.

CONTENTS

COMMONWEALTH YOUTH PROGRAMME

METHODOLOGY OVERVIEW

The Commonwealth Youth Development Index (YDI) is designed to measure youth development in 171 countries and the 54 Commonwealth states based on the following five domains:

- **Domain 1: Education**
- **Domain 2: Health and Wellbeing**
- **Domain 3: Employment**
- **Domain 4: Political Participation**
- **Domain 5: Civic Participation**

These domains were decided and agreed upon through consultation with the Commonwealth Secretariat Technical Advisory Committee and the Institute of Economics and Peace (IEP). To be able to gauge youth development within each country within these domains, 15 indicators have been sourced that measure an aspect of one of the five domains as shown in **Tables 1** to **5**. Wherever possible, the data used is consistent across countries and is available in major existing databases.

Table 1: Domain 1 – Education

Code	Full Indicator Description	Source	Latest Year	Global Coverage
D1.1	Mean Years of Schooling	United Nations Development Program, Human Development Report	2011	174 Countries
D1.2	Education Spending as % GDP	World Bank	2010	158 Countries
D1.3	Youth Literacy (15-29)	World Bank	2010	172 Countries

Table 2: Domain 2 – Health and Wellbeing

Code	Full Indicator Description	Source	Latest Year	Global Coverage
D2.1	Youth Mortality Rate 15 - 29	World Health Organisation	2012	177 Countries
D2.2	Cannabis Use	United Nations Office on Drugs and Crime	Non standardised	98 Countries
D2.3	Teenage Pregnancy Rates	World Bank	2012	171 Countries
D2.4	HIV Prevalence 15-24	UNAIDS and World Health Organisation	2012	140 Countries
D2.5	Tobacco Use	Centers for Disease Control and Prevention, Global Youth Tobacco Survey	2012	150 Countries

Table 3: Domain 3 – Employment

Code	Full Indicator Description	Source	Latest Year	Global Coverage
D3.1	Unemployment 15-24 years	United Nations Statistics Division, Millennium Development Goals Database, African Economic Outlook	2010	133 Countries
D3.2	Youth to Total Employment Ratio	United Nations Statistics Division, Millennium Development Goals Database	2010	122 Countries

Table 4: Domain 4 – Political Participation

Code	Full Indicator Description	Source	Latest Year	Global Coverage
D4.1	Youth Policies and Representation	Commonwealth Secretariat	2012	54 Countries
D4.2	Voter Education	Ace Electoral Network	2012	154 Countries
D4.3	Express Political Views: Have you done any of the following in the past month? How about voiced your opinion to a public official? (15-24)	Gallup World Poll (15-24 age group responses only)	2012	157 Countries

Table 5: Domain 5 – Civic Participation

Code	Full Indicator Description	Source	Latest Year	Global Coverage
D5.1	Volunteering. Have you done any of the following in the past month? How about volunteered your time to an organisation? (15-24)	Gallup World Poll (15-24 age group responses only)	2012	142 Countries
D5.2	Helped A Stranger. Have you done any of the following in the past month? How about helped a stranger or someone you didn't know who needed help? (15-24)	Gallup World Poll (15-24 age group responses only)	2012	152 Countries

APPROACH

In using primarily hot and cold deck imputation methods, the YDI represents the use of the best possible data without an overly complex methodology. It should be noted after exhausting all acceptable imputation possibilities, if a country still has a data gap in an indicator, the YDI methodology assigns a value based on one of two rules. If a country is missing a national statistic, such as youth unemployment or mortality rates, the YDI assigns this country the lowest possible score in this indicator. This has been done to avoid making assumptions around the relationships of the indicators that other statistical imputation methods introduce to an index. Employing only simple imputation techniques also avoids the introduction of the potential for "number games" whereby it may be in the best interest of a country to withhold information on indicators that they do not perform well in. Given this, and that, as the development of the YDI is in part a data advocacy exercise, it seems appropriate to incentivise data gathering in the future. Therefore, in giving a country the lowest score in the case of missing data, it guarantees that country will not get a lower score in the YDI if that information is made available in the future. Unless a country is consistently poor by global standards, scores will likely only improve from making data available.

Using this methodology in effect penalises countries for not having national statistics available. However, it does not seem appropriate to penalise countries simply because they have not been polled by Gallup in D4.3 Express Political Views, D5.1 Volunteering and D5.2 Helped A Stranger. In these cases, countries are given the raw global average for the indicator.

Sensitivity analysis is provided in the methodology document which examines the robustness of the results by assigning missing data the maximum possible value and comparing how a country performs with the additional data. This analysis shows that 29 countries do not change their YDI grouping even with additional data. The remaining 25 countries may be in a position to improve their performance in the index as additional data becomes available.

DATA AVAILABILITY ISSUES AND APPROACH

The methodology developed has been designed to be in line with other prominent global indicators, and substantial effort has been made to populate the index with the best existing country information. However, the major challenge to developing a harmonised youth development index is in attempting to overcome the paucity of consistent and comprehensive data across the very diverse 54 Commonwealth countries. They vary significantly in terms of land mass, population, level of economic development, and regional location. Data difficulties are particularly acute with regard to civic and political participation indicators where the best available attitudinal data has been selected. One of the major outputs of this process is a summary not only of the available data, but also of the data that cannot be currently sourced from the existing stock of data.

The issue of low availability for current or historical data has been a factor in a number of the methodological decisions made, from what indicators to include to how calculate the final scores. There are many empirical and statistical techniques that can be employed to deal with these missing data issues when creating a composite index.[3] **Table 6** lists these and how these applied, or did not apply, to the Youth Development Index.

Table 6: Data Imputation Methods

Method	Description	Application in YDI
Hot Deck Imputation	Assign missing data the value of a "similar" data point	The YDI uses this approach when it assigns certain missing indicators the value of the region in which the country is located.
Substitution	Replacing missing data with other unselected units in a sample	This is not applicable in the YDI because all available data is used in some way
Cold Deck Imputation	Replacing the missing value with a value from another source	The YDI uses this either when it uses the most recent data point in a series as the current data point, or uses additional country statistics to fill in gaps.
Unconditional Mean Imputation	Replacing missing data with sample means	This has not been used in the YDI across indicators because of the diverse nature of the 54 countries in the Commonwealth. It was also not used across domains because averaging over different indicators implies assumptions about interrelatedness.
Regression Imputation	Correlate combinations of indicators to imputed missing values	With 15 indicators and five domains, no simple way could be devised to impute data across the YDI in a reliable way.
Expected Minimisation Imputation	Uses a maximum likelihood iterative approach to impute data	This was not used due to the diversity of countries and indicators (see Unconditional Mean Substitution)
Matching Quartiles	Used to impute data from observed historical trends	As development indicators are slow moving, in general regression was not seen to add value to the single imputation methods
Multiple Imputation	Use a Monte Carlo Simulation approach to determine final "robust" results	This approach in its most basic form when lower and upper bounds of a country's YDI score can be determined.

WEIGHTING THE INDICATORS

In calculating domain and final scores, each indicator is weighted in terms of its relative importance to the other indicators. There are a number of methods available[4] to decision makers including data envelopment analysis, benefit of the doubt approach, unobserved components. Two simple approaches have been chosen for the YDI. The first has been to use expert assessments in combination with Analytical Hierarchy Process (AHP) from the Technical Advisory Committee to determine the relative importance of each indicator. The final weightings are shown in **Table 7**.

Table 7: IEP Recommendations for Indicator Weightings

Domain	Code	Indicator	Weight	% Weights	Domain Sum
D1 – Education	D1.1	Mean Years of Schooling	5.00	14%	28%
	D1.2	Education Spending % GDP	1.00	3%	
	D1.3	Youth Literacy (15-24)	4.00	11%	
D2 – Health and Wellbeing	D2.1	Youth Mortality Rate (15 – 29)	5.00	14%	28%
	D2.2	Cannabis Use	1.00	3%	
	D2.3	Teenage Pregnancy Rates	2.00	6%	
	D2.4	HIV Prevalence (15-24)	1.00	3%	
	D2.5	Tobacco Use (13-15)	1.00	3%	
D3 – Employment	D3.1	Unemployment (15-24)	5.00	14%	28%
	D3.2	Youth to Total Employment Ratio (15-24)	5.00	14%	
D4 – Political Participation	D4.1	Voting Age	1.00	3%	8%
	D4.2	Voter Education	1.00	3%	
	D4.3	Express Political Views (15-24)	1.00	3%	
D5 – Civic Participation	D5.1	Volunteering (15-24)	2.00	6%	8%
	D5.2	Helped A Stranger (15-24)	1.00	3%	

[3]Organisation for Economic Co-Operation and Development. (2008). Handbook on Constructing Composite Indicators (pp. 1–162).

[4]Organisation for Economic Co-Operation and Development. (2008). Handbook on Constructing Composite Indicators (pp. 1–162).

MARGINAL RATES OF SUBSTITUTION FROM WEIGHTS

Any weighting scheme requires a comparison of importance of different indicators. It is possible to quantify these normative choices by calculating the marginal rates of substitution. This calculates from the weighting scheme the equivalence factors between indicators that the chosen scheme is implicitly suggesting. This can be done by dividing pairs of weights and the marginal rate of substitution of indicator i to indicator j is given by **Equation 1**. In this formula r is equal to -1 if one of the indicators is reverse banded, and is equal to 1 otherwise. The results of this are in **Table 8**.

Equation 1: Marginal Rate of Substitution

$$MRS_{i,j} = r\ \frac{Weight_i}{Weight_j}$$

Table 8: Marginal rates of Substitution, trade-offs in the YDI

An Increase of			Mean Years of Schooling	Education % GDP	Youth Literacy (15-24)	Youth Mortality Rate (15 - 29)	Cannabis Use* (Various years)	Teenage Pregnancy Rates	HIV Prevalence (15-24)	Tobacco Use (13-15)	Unemployment (15-24)	Youth to Total Employment Ratio (15-24)	Youth policies and representation	Voter Education	Express Political Views (15-24)	Volunteering (15-24)	Helped A Stranger (15-24)
Mean Years of Schooling	1	year	1.0	5.0	1.3	-1.0	-5.0	-2.5	-5.0	-5.0	-1.0	-1.0	5.0	5.0	5.0	2.5	5.0
Education % GDP	1	% of GDP	0.2	1.0	.03	-.2	-1.0	-0.5	-1.0	-1.0	-.02	-.02	1.0	1.0	0.5	0.5	1.0
Youth Literacy (15-24)	1	% of youth	0.8	4.0	1.0	-0.8	-4.0	-2.0	-4.0	-4.0	-0.8	-0.8	4.0	4.0	4.0	2.0	4.0
Youth Mortality Rate (15 - 29)*	-1	per 1000 youth	1.0	5.0	1.3	-1.0	-5.0	-2.5	-5.0	-5.0	-1.0	-1.0	5.0	5.0	5.0	2.5	5.0
Cannabis Use* (Various years)	-1	% of youth	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Teenage Pregnancy Rates*	-1	per 1000 youth	0.4	2.0	0.5	-0.4	-2.0	-1.0	-2.0	-2.0	-0.4	-0.4	2.0	2.0	2.0	1.0	2.0
HIV Prevalence (15-24)*	-1	% of youth	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Tobacco Use (13-15)*	-1	% of youth	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Unemployment (15-24)*	-1	% of youth	1.0	5.0	1.3	-1.0	-5.0	-2.5	-5.0	-5.0	-1.0	-1.0	5.0	5.0	5.0	2.5	5.0
Youth to Total Employment Ratio (15-24)	-1	youth to adult	1.0	5.0	1.3	-1.0	-5.0	-2.5	-5.0	-5.0	-1.0	-1.0	5.0	5.0	5.0	2.5	5.0
Youth Policies and Representation	-1	continuous value	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Voter Education	1	discrete value	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Express Political Views (15-24)	1	% of youth	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0
Volunteering (15-24)	1	% of youth	0.4	2.0	0.5	-0.4	-2.0	-1.0	-2.0	-2.0	-0.4	-0.4	2.0	2.0	2.0	1.0	2.0
Helped A Stranger (15-24)	1	% of youth	0.2	1.0	0.3	-0.2	-1.0	-0.5	-1.0	-1.0	-0.2	-0.2	1.0	1.0	1.0	0.5	1.0

DOMAIN CALCULATIONS

This section illustrates how each indicator is treated in each domain. The Domain process is in three stages 1) data collection, 2) imputation and banding and 3) calculating the weighted sum.

Banding data in the case of the YDI is a way of dealing with comparing otherwise incongruous information. It takes each indicator and scales them to a score between 0 and 1 relative to the whole data set. To do this, appropriate minimum and maximum values for the data set are decided such that anything below the minimum is assigned 0, and anything above the maximum is assigned 1, and everything else is scaled evenly between the two.

For example, since 2000 mean years of schooling has ranged globally from 0.9 in Mozambique, to 12.7 in Norway between 2005 and 2008. In discussions around this indicator it was decided that a suitable minimum cut off value would be 0 and the maximum could be appropriately be set to Norway's value of 12.7. Therefore, in Year y, after data imputation, the banded score is calculated for Indicator i by **Equation 2**.

Equation 2: Banding Equation

$$Banded_i = \frac{\text{Country Indicator Value in Year } y_i - \text{mininum cutoff}_i}{\text{maximum cutoff}_i - \text{mininum cutoff}_i}$$

The fact that mean years of schooling is banded this way indicates the implicit assumption that more years of schooling is inherently better to youth development. However, higher levels of some indicators, such as mortality rates, represent a less desirable case for youth. In such cases, the banded score is reverse and is calculated by **Equation 3**.

Equation 3: Reverse banding equation

$$\text{Reverse Banded}_i = 1 - \frac{\text{Country Indicator Value in Year } y_i - \text{mininum cutoff}_i}{\text{maximum cutoff}_i - \text{mininum cutoff}_i}$$

Once a banded score has been calculated for each Country, the Domain score is calculated in a similar fashion as is done in **Equation 4** for Domain 1.

Equation 4: Domain Score Calculation

$$D1\ Score = \frac{\sum_{j=D1.1}^{D1.4} Weight_j \times \text{Country Indicator Banded Score}_j}{\sum_{j=D1.1}^{D1.4} Weight_j}$$

The next sections will explain in detail how each indicator is collected, imputed, banded and weighted in each domain.

DOMAIN 1: EDUCATION

Despite significant improvements in educational participation among young people, there are still vast numbers who still lack basic literacy skills. Currently, there are concerns about the limited educational opportunities available to girls and young women, rural youth and young people with disabilities. The economic burden of education funding often falls on households, which in developing nations can struggle to cope, which in turn creates a serious barrier to youth participation in education. Furthermore, the quality of training, including those in tertiary educational systems, vocational training systems (including non-formal training), and so on, are salient features in assessing youth development. **Figure 1** illustrates the scoring process for Domain 1.

Figure 1: Domain 1 Scoring Procedure
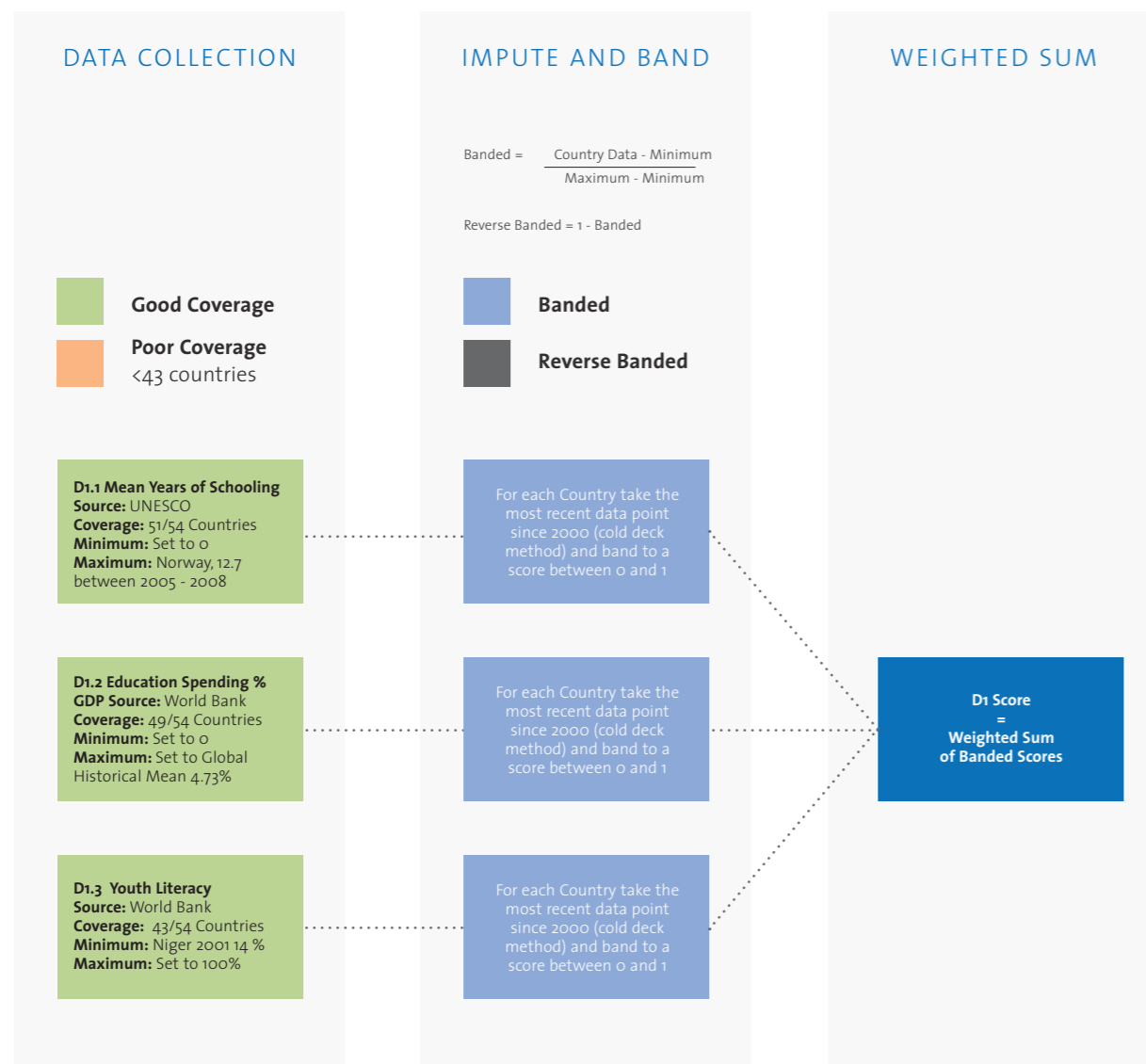
DOMAIN 2: HEALTH AND WELLBEING

Although young people are often thought to be in the prime of their health, many die from injury, road accidents, suicide, violence, and communicable diseases (including HIV) and non-communicable diseases. Moreover, a large number suffer from illnesses which hinder their ability to grow and develop to their full potential. For youth aged between 15 to 24, the biggest risk factors contributing to reducing life expectancy is alcohol, unsafe sex, lack of contraception, iron deficiency, illicit drugs, and physical injury. The risk 1 factors are often not only effect a young person's current state of health, but often their health in years to come. An overwhelming portion of premature deaths and diseases experienced by adults are associated with conditions and behaviours which began in their youth like tobacco use, unprotected sex, and so on. The promotion of healthier practices amongst youth not only help them to guard against premature death and diseases, but ensures that they will be healthier in adult life and the burden of costs associated with health problems will be reduced. **Figure 2** illustrates the scoring process for Domain 2.

Figure 2: Domain 2 Scoring Procedure

DOMAIN 3: EMPLOYMENT

Youth often have specific vulnerabilities when seeking employment in the labour market due to their age. Young people often do not have prior job experience or any professional networks and contacts. Some youth may possess skills and talents which are not in demand or which are in extremely limited demand in the labour market. Furthermore, young people may have received poor or low-quality education which does not adequately equip them with the skills needed to operate successfully in the workplace. Additionally, in the present volatile economic context, if the youth are able to find employment, it is often short-term contracts which offer no or minimal benefits and little job security. Youth also suffer from a lack of access to credit which severely restricts any entrepreneurship opportunities. Given the on-going impacts of the global financial crisis which still affects many economies, solving youth unemployment remains a high priority. **Figure 3** illustrates the scoring process for Domain 3.

Figure 3: Domain 3 Scoring Procedure
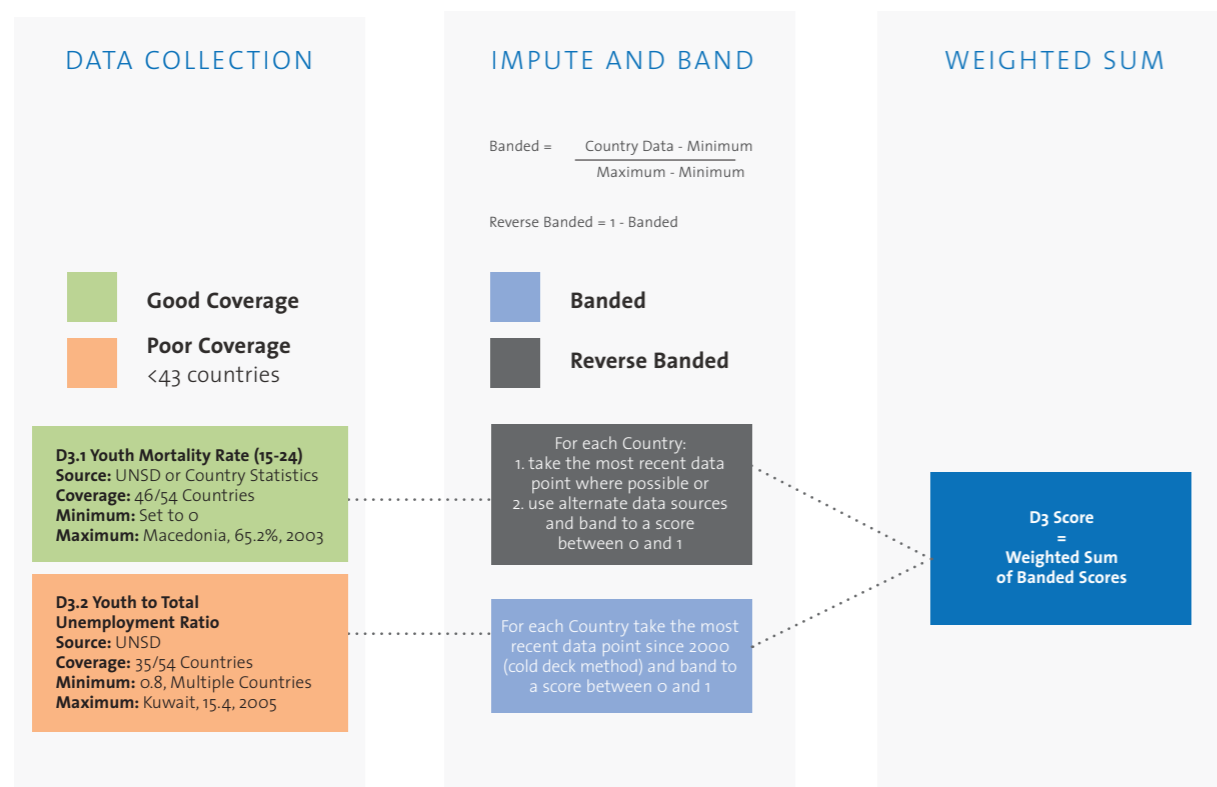
DOMAIN 4: POLITICAL PARTICIPATION

The participation of young people in the political life of their nation reveals several interesting connections. Firstly, participation in the political life of a nation shows that extent to which citizens, including young people, are empowered and engaged with the political process. Citizens who feel empowered are more likely to an active political life. Governments which have an active and informed citizenry are less likely to be corrupt, and more likely to guarantee basic rights and public goods. Political participation and governance are key factors in determining the success of development programs. Given the importance of governance in development and the large portion of young people in developing countries, youth participation and representation in political processes and policies becomes paramount. This point becomes especially salient as the after-effects of the global financial crisis have created unemployment and job insecurity with young people being severely affected. Promotion of political participation amongst the youth for both voting age youth and below voting age youth is an important strategy to promote social integration and combat exclusion. If salient identity groups feel marginalised and excluded from the nation's political, economic and social life, the likelihood of conflict and violence increases. It is also an important ingredient in creating bonds between generations: older people can often view young people as untrustworthy or apathetic. **Figure 5** illustrates the scoring process for Domain 4.

Figure 4: Domain 4 Scoring Procedure
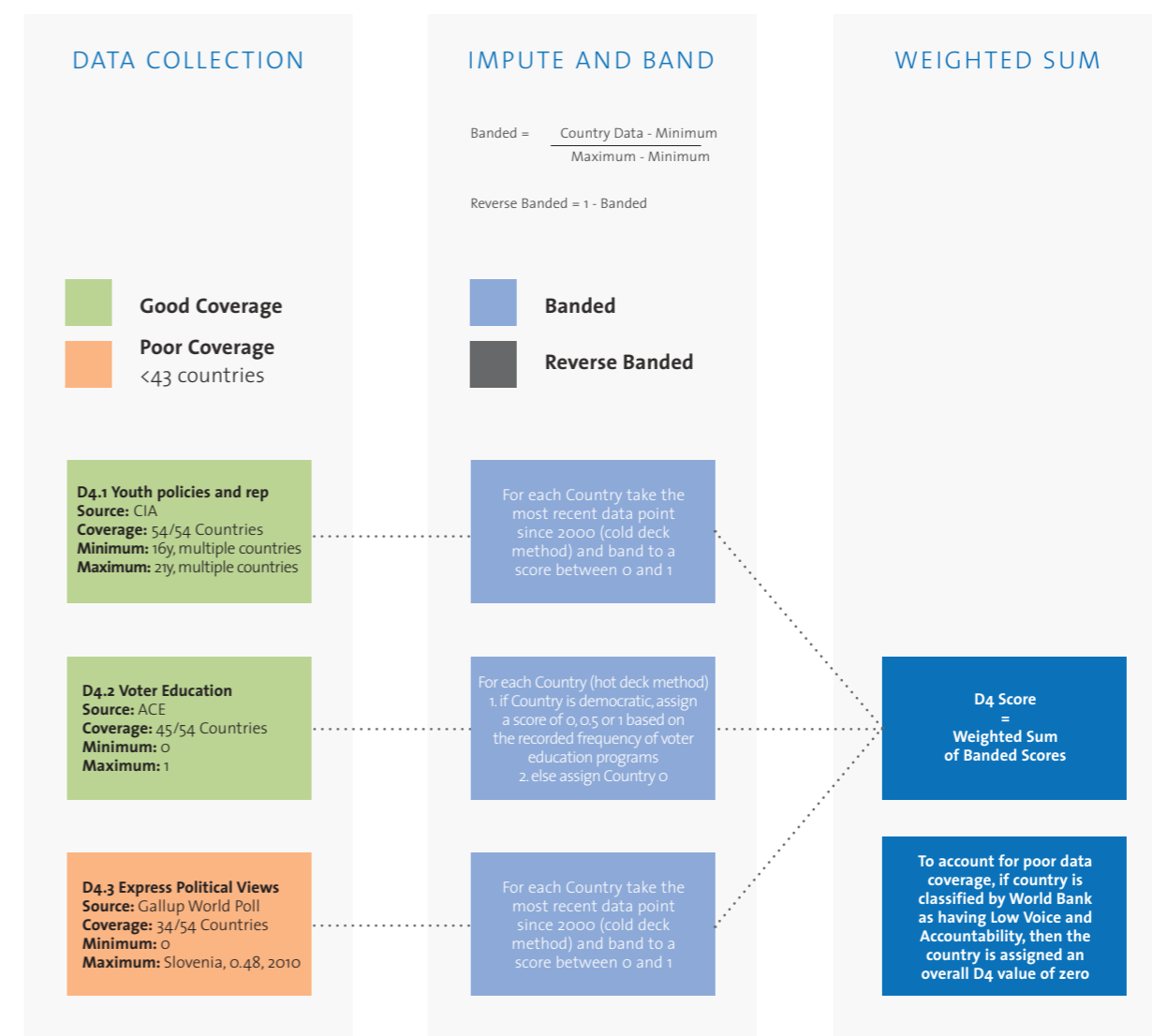
DOMAIN 5: CIVIC PARTICIPATION

Civic engagement should be seen as complementary to political participation as the youth of a country are in transition from school completion, the attainment of employment to support and adult livelihood, family formulation, and to define oneself as a mature and contributing member of society a citizen. This aspect of development, namely civic engagement, is now seen as a key marker of human development and full incorporation into society. **Figure 5** illustrates the scoring process for Domain 5.

Figure 5: Domain 5 Scoring Procedure
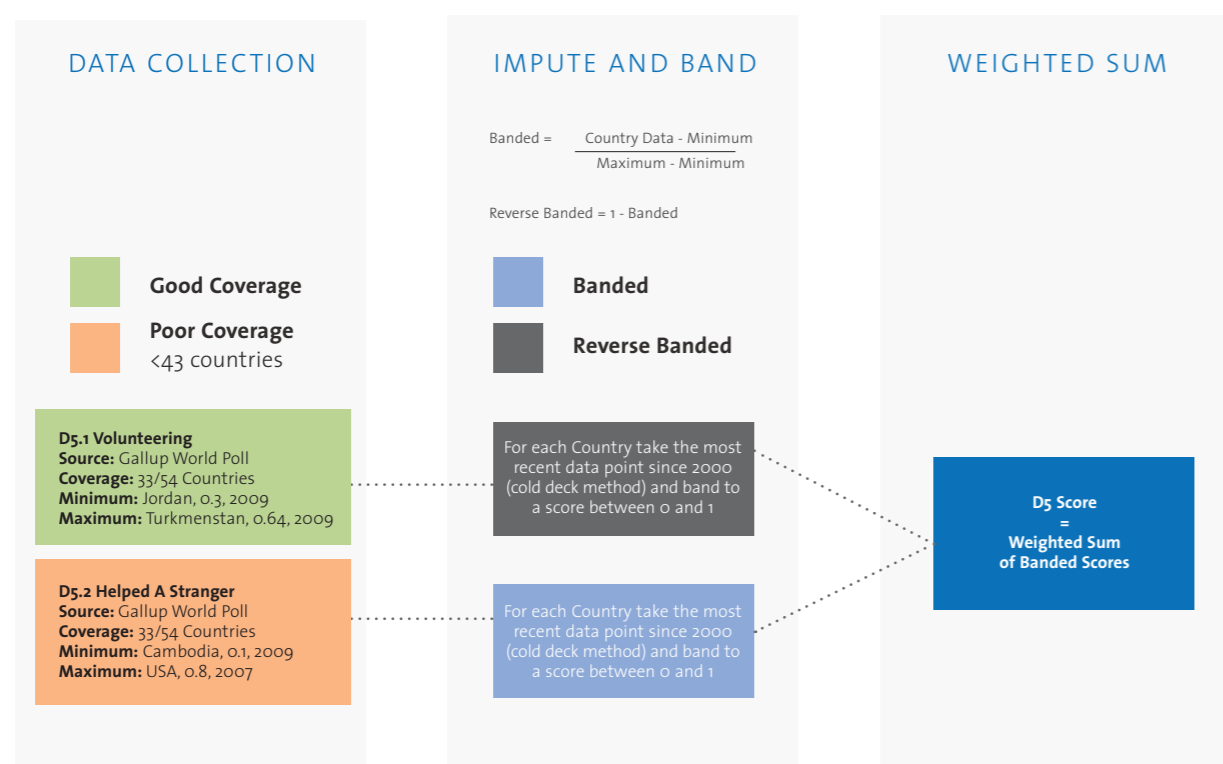
FINAL YDI SCORE CALCULATION

At this stage, a banded score has been calculated for each of the countries on each of the 17 indicators. Therefore given a set of weights, the YDI score can be calculated by **Equation 5**.

Equation 5: YDI Scoring Formula (1)

$$\text{YDI Score} = \frac{\sum_{i=D1.1}^{D5.2} \text{Weight}_i \times \text{Country Indicator Banded Score}_i}{\sum_{i=D1.1}^{D5.2} \text{Weight}_i}$$

Equivalently, the final score can also be calculated as a function of the individual domain scores using **Equation 6**.

Equation 6: YDI Scoring Formula (2)

$$\text{YDI Score} = \sum_{i=1}^{5} D_i \text{ Score} \times \text{Relative Importance of } D_i$$

To group countries into Low, Medium and High levels of youth development the YDI calculates the mean μ (0.58) and standard deviation σ (0.18) of the global YDI scores and uses the classifies using the rules stipulated in **Table 9**.

Table 9: Grouping Cut Offs

YDI Level	Definition	Cut Off Values
Low	More than one standard deviation below the mean $\text{YDI} < \mu - \sigma$	$\text{YDI} < 0.40$
Medium	Within one standard deviation of the mean $\mu - \sigma \leq \text{YDI} < \mu + \sigma$	$0.40 \leq \text{YDI} < 0.76$
High	Greater than one standard deviation above the mean $\mu + \sigma \leq \text{YDI} \leq 1$	$0.76 \leq \text{YDI} \leq 1.00$

Appendix A – Detailed Indicator Description

DOMAIN 1 – EDUCATION

D1.1 Mean Years of Schooling

Full Description: Mean Years of Schooling (of adults) years; based on the average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

Rationale: This is a core indicator of youth development in education as it captures the number of years an individual by age 25 has been in education. While other core indicators such as transition rates from primary education to secondary and gross enrolment rates would also be suitable, this is the most reliable and consistent data source, available across more than 200 countries and regularly updated.

Source: Human Development Report Office updates of Barro and Lee (2010) estimates based on UNESCO Institute for Statistics data on education attainment (2011) and Barro and Lee (2010) methodology. Updates as of 15 May 2011.

Website: http://hdrstats.undp.org/en/indicators/103006.html

Accessed: Wednesday, 09 January 2013

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Figure 6: D1.1 Mean Years of Schooling Distribution (Global = Blue, Commonwealth = Red)
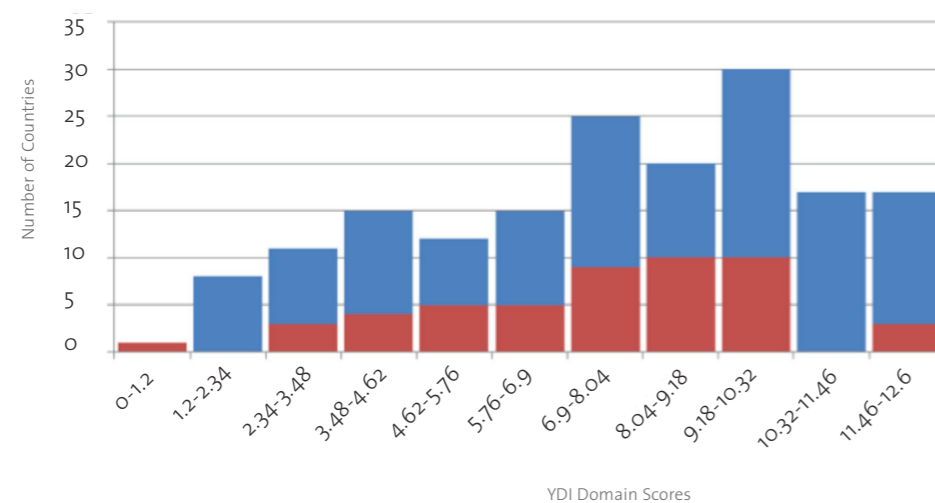
Table 10: Descriptive Statistics of D1.1 Mean Years of Schooling

D1.1 Mean Years of Schooling	Descriptive Stats (Global)	Descriptive Stats (Commowealth)
Units	Years	Years
Mean	7.62	7.41
Median	8	8
Standard Deviation	2.96	2.5
Sample Variance	8.78	6.25
Kurtosis	-0.88	-0.22
Skewness	-0.34	-0.30
Range	11.4	11.3
Minimum	1.2	1.2
Maximum	12.6	12.5
Sum	1456.3	377.7
Count	191	51

Table 11: Banding values of D1.1 Mean Years of Schooling

	Set to	Rationale
Minimum Value	Set to zero	Theoretical worst case scenario
Maximum Value	Set to global maximum, Norway, 2005-2008, 12.7 years	Theoretical best case scenario

Data Imputation Method

1. Take the most recent data point since 2000

Figure 7: Mean Years of Schooling banded results (between 0 and 1)
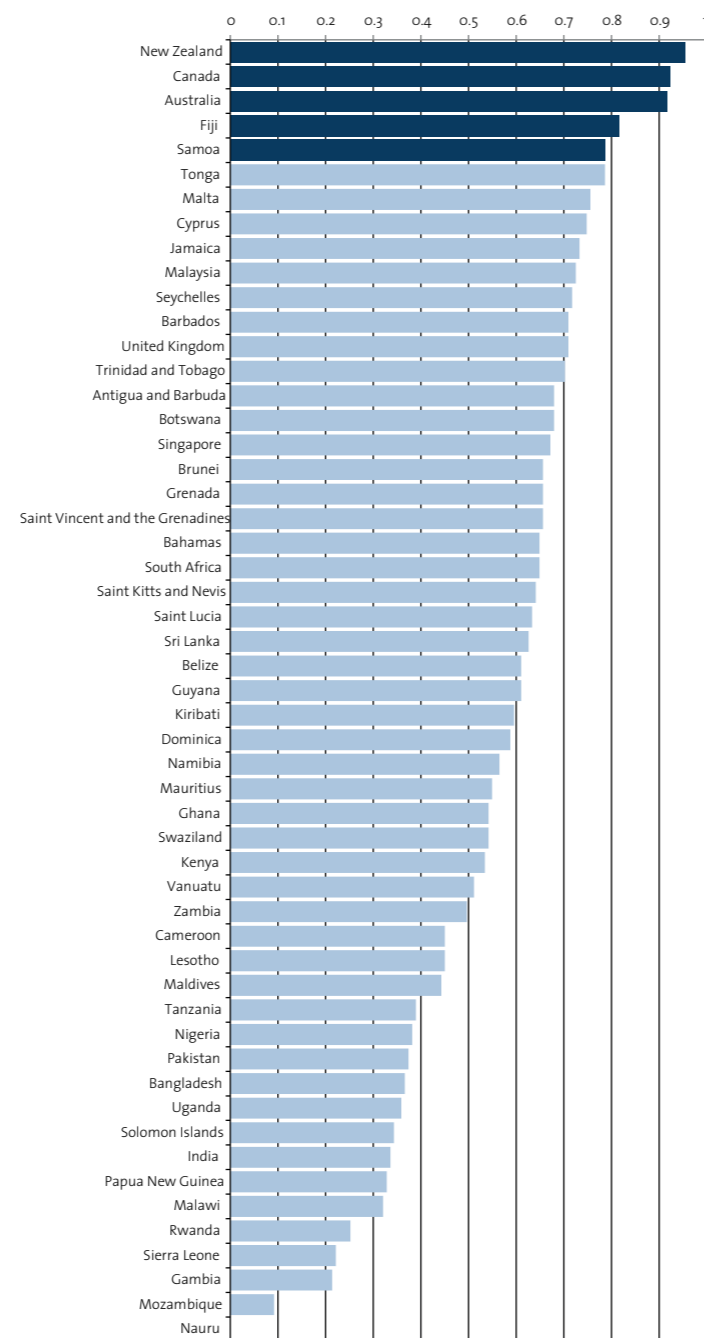
D1.2 Education % GDP

Full Description: Public expenditure on education as % of GDP is the total public expenditure (current and capital) on education expressed as a percentage of the Gross Domestic Product (GDP) in a given year. Public expenditure on education includes government spending on educational institutions (both public and private), education administration, and transfers/subsidies for private entities (students/households and other privates entities).

Rationale: Used as a proxy for the importance of education and youth development in national life. Other similar education indicators (secondary enrolment etc) were too closely related to youth literacy, and thus added no new information to the index. However, any of the three selected indicators could in theory be replaced with secondary enrolment or a similar indicator if this would help data coverage and relevance.

Source: World Bank

Website: http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS

Accessed: Monday, 14 January 2013

Data Description

Figure 8: D1.2 Education as % GDP Distribution (Global = Blue, Commonwealth = Red)
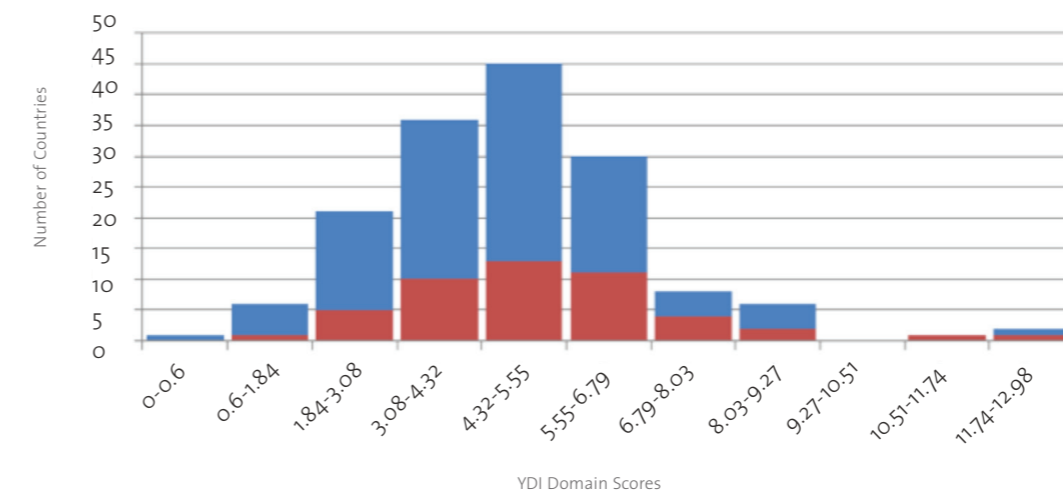
YDI Domain Scores

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 12: Descriptive Statistics of D1.2 Education as % GDP

D1.2 Education as % GDP	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentages (0-100%)	Percentages (0-100%)
Mean	4.81	5.17
Median	4.53	5.01
Mode	N/A	N/A
Standard Deviation	2.23	2.29
Sample Variance	4.95	5.22
Kurtosis	3.32	2.47
Skewness	1.35	1.16
Range	13.37	11.64
Minimum	0.6	1.35
Maximum	13.97	12.98
Sum	837.43	253.09
Count	174	49

Table 13: Banding values of D1.2 Education as % GDP

	Set to	Rationale
Minimum Value	Set to zero	Theoretical worst case scenario
Maximum Value	Set to global mean (4.73%)	Set to mean to represent a global "normal" expenditure

Data Imputation Method

1. Take the most recent data point since 2000

Figure 9: D1.2 Education % GDP banded results (between 0
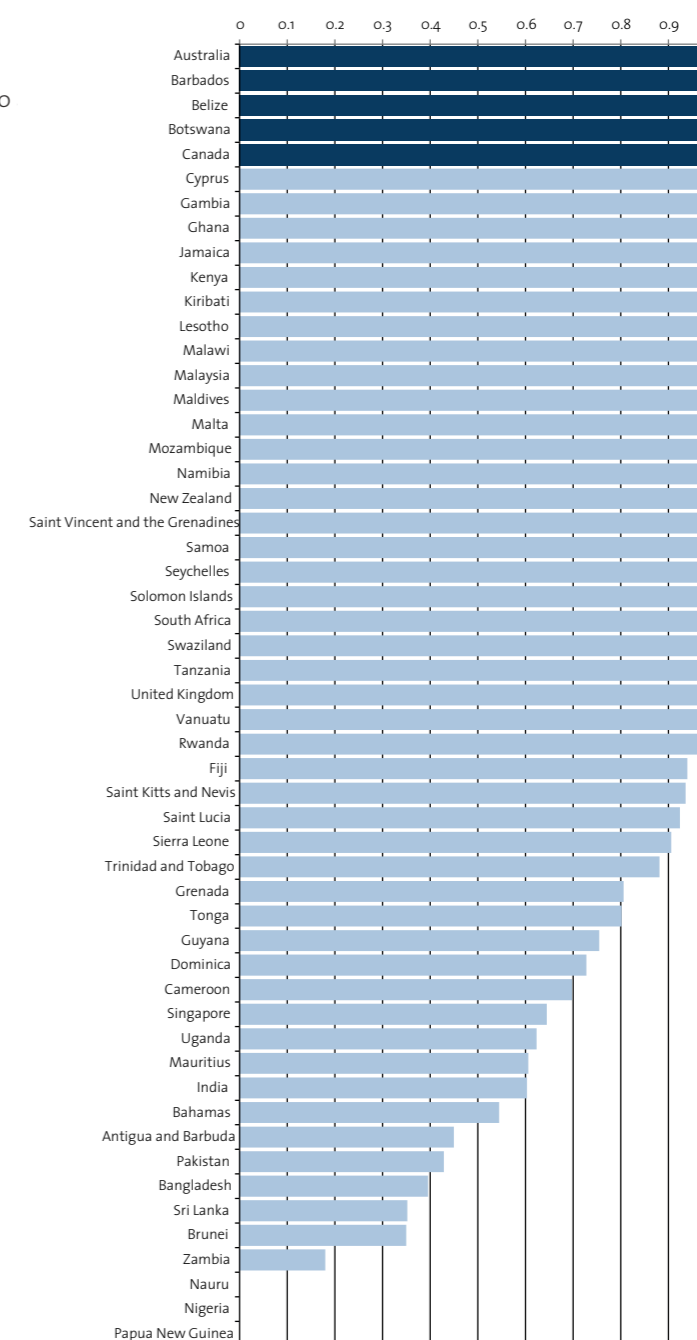
D1.3 Literacy rate

Full Description: Youth (15-24 years old) literacy rate (%). Total is the number of people age 15 to 24 years who can both read and write with understanding a short simple statement on their everyday life, divided by the population in that age group. Generally, 'literacy' also encompasses 'numeracy', the ability to make simple arithmetic calculations.

Rationale: Youth literacy rate is a core indicator for the success of youth education and development.
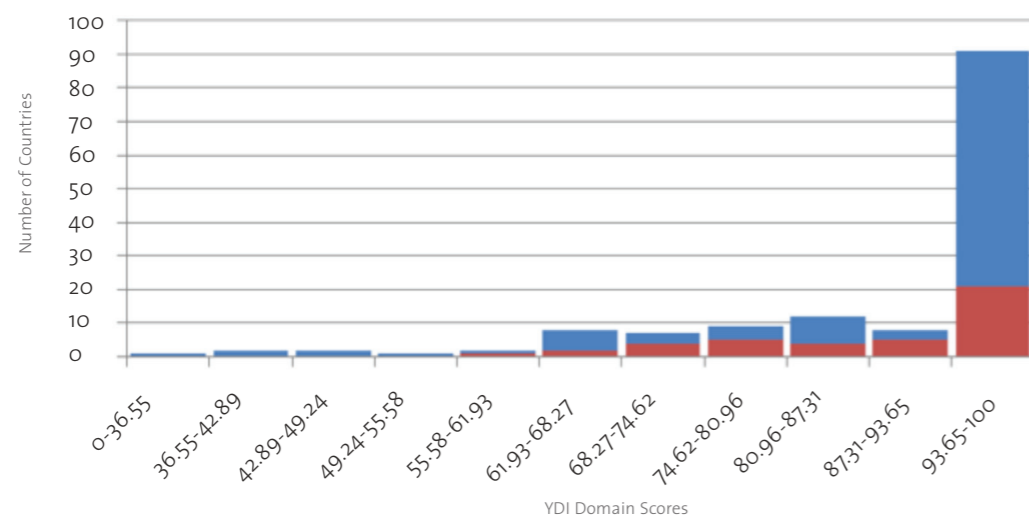
Source: World Bank

Website: http://data.worldbank.org/indicator/SE.ADT.1524.LT.ZS

Accessed: Monday, 14 January 2013

Data Description

Figure 10: D1.3 Literacy Rate Distribution (Global = Blue, Commonwealth = Red)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 14: Descriptive Statistics of D1.3 Literacy Rate

D1.3 Literacy Rate	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentages (0-100%)	Percentages (0-100%)
Mean	89.98	88.93
Median	97.6	93.96
Mode	N/A	N/A
Standard Deviation	14.27	11.99
Sample Variance	203.51	143.68
Kurtosis	2.96	-0.4
Skewness	-1.8	-0.89
Range	63.45	42.38
Minimum	36.55	57.61
Maximum	100	99.99
Sum	14036.77	3824.05
Count	156	43

Table 15: Banding values of D1.3 Literacy Rate

	Set to	Rationale
Minimum Value	Set to global minimum (Niger, 2001, 14%)	Set to the global minimum as the theoretical minimum of 0 is too low to be practical
Maximum Value	Set to 100%	Theoretical maximum

Data Imputation Method

1. Take the most recent data point since 2000
2. Source alternative data references as per the below table

Table 16: Alternate Sources of D1.3 Literacy Rate

Country Name	Alternate Source Value	Alternate Source
Australia	99.99	National Statistical Office
Belize	76.42	National Statistical Office
Canada	99.99	National Statistical Office
Gambia, The	66.71	National Statistical Office
New Zealand	99.99	National Statistical Office
Solomon Islands	85.00	National Statistical Office
United Kingdom	99.99	National Statistical Office

Figure 11: D1.3 Literacy rate, youth total (Percentage of people ages 15-24) banded results (between 0 and 1)

| | 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |

United Kingdom
New Zealand
Canada
Australia
Cyprus
Singapore
Barbados
Brunei
Trinidad and Tobago
Samoa
Tonga
Maldives
Seychelles
Antigua and Barbuda
Malaysia
Guyana
Malta
Sri Lanka
South Africa
Mauritius
Grenada
Bahamas
Botswana
Jamaica
Belize
Dominica
Vanuatu
Fiji
Swaziland
Namibia
Kenya
Lesotho
Uganda
Malawi
Solomon Islands
Cameroon
India
Ghana
Tanzania
Rwanda
Bangladesh
Zambia
Nigeria
Pakistan
Mozambique
Papua New Guinea
Gambia
Sierra Leone
Kiribati
Nauru
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines

DOMAIN 2 HEALTH AND WELLBEING

D2.1 Youth Mortality Rate

Full Description: Total number of fatalities per 1000 of people aged 15-29.

Rationale: Mortality rates of youth are an indication of the health of young people and the societal capability and institutional capacity to deal with health issues of young people.

Source: World Health Organisation for fatality and population data used in IEP calculation

Website: http://www.who.int/whosis/mort/download/en/index.html

Accessed: Monday, 14 January 2013

Data Description

Figure 12: D2.1 Youth Mortality 15-29 (per 1000 youths) (Global = Blue, Commonwealth = Red)
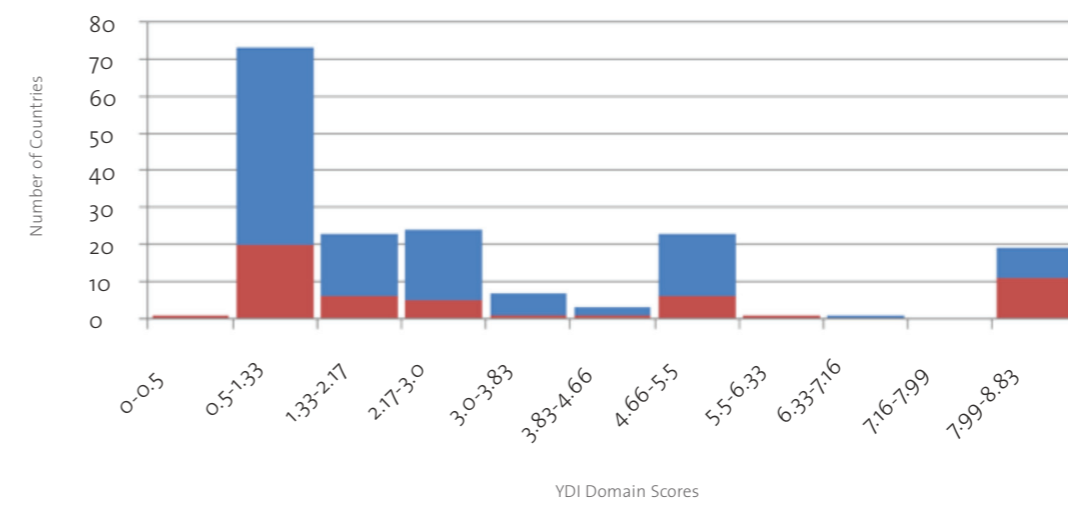
Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 17: Descriptive Statistics of D2.1 Youth Mortality Rate

D2.1 Youth Mortality Rate	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Number of Mortalities per 1000 aged 15-29	Number of Mortalities per 1000 aged 15-29
Mean	3	3.48
Median	1.52	1.73
Mode	N/A	N/A
Standard Deviation	2.46	3.06
Sample Variance	6.05	9.39
Kurtosis	1.09	-0.75
Skewness	1.46	0.93
Range	8.83	8.32
Minimum	0	0.5
Maximum	8.83	8.83
Sum	561.91	184.63
Count	209	53

Table 18: Banding values of D2.1 Youth Mortality Rate

|	Set to	Rationale
Minimum Value	Set to zero	Youth development is optimised when mortality rate is zero.
Maximum Value	Set to global maximum (Brazil, 2002, 10.4 per 1000 15-29 years)	Countries scoring worse than Brazil will receive the worst possible score.

Data Imputation Method

1. Take the most recent data point since 2000
2. If data is missing for a country then assign that country the value that the World Health Organisation (WHO) attributes to the countries region and mortality rate as per the following table sourced from http://www.who.int/healthinfo/paper50.pdf.

Table 19: Alternate Values of D2.1 Youth Mortality Rates

Region	Deaths 15-29	Population 15-29	Mortality Rate per 1000
WHO REGION	3587	1,558,731	2.30
AFRO D	389	81,470	4.77
AFRO E	846	95,842	8.83
AMRO A	56	65,976	0.85
AMRO B	190	121,244	1.57
AMRO D	47	20,521	2.29
EMRO B	51	40,153	1.27
EMRO D	212	93,193	2.27
EURO A	49	80,599	0.61
EURO B	58	57,612	1.01
EURO C	132	55,409	2.38
SEARO B	185	84,042	2.20
SEARO D	933	339,412	2.75
WPRO A	16	31,857	0.50
WPRO B	424	391,401	1.08

Figure 13: D2.1 Mortality rate banded results (between 0 and 1)
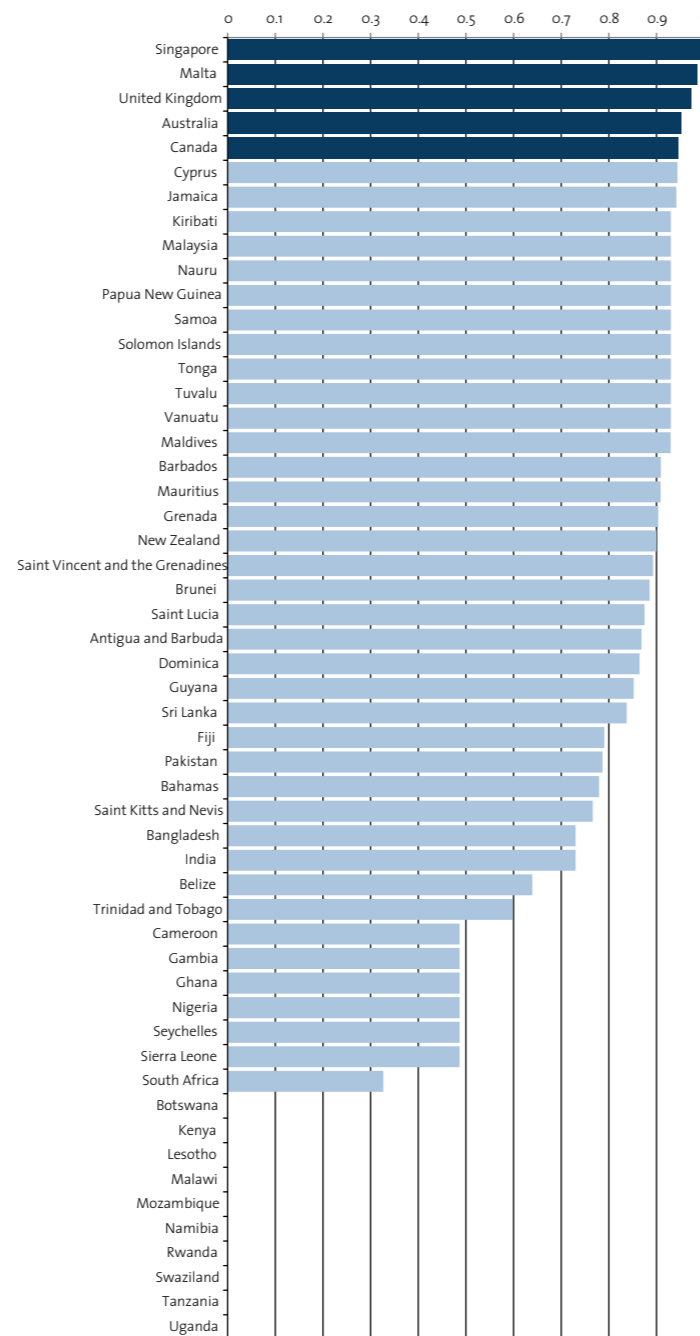
D2.2 Cannabis Use

Full Description: Percentage of young people who have ever used cannabis in their lifetime. Data is primarily of teenagers but ages are not standardised across countries.

Rationale: Although the link between cannabis use and mental illness remains controversial, the best available research suggests that cannabis use is most harmful if begun as a teenager or earlier. It is recognised as a measure of illicit drug use and injury and a major contributor of youth mortality.

Source: United Nations Office on Drugs and Crime (UNODC)

Website: http://www.unodc.org/documents/data-and-analysis/WDR2011/World_Drug_Report_2011_ebook.pdf

Accessed: Monday, 14 January 2013

Data Description

Figure 14: D2.2 Cannabis Use (Global = Blue, Commonwealth = Red)
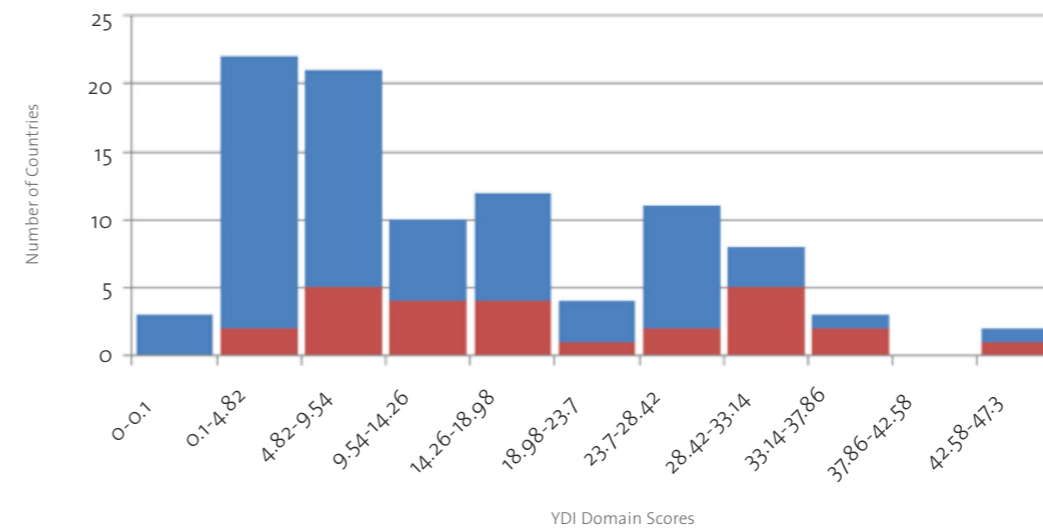
YDI Domain Scores

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 20: Descriptive Statistics of D2.2 Cannabis Use

D2.2 Cannabis Use	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentage of youths who have used cannabis in their lifetime (0%-100%)	Percentage of youths who have used cannabis in their lifetime (0%-100%)
Mean	14.15	19.26
Median	10.9	17.4
Mode	N/A	N/A
Standard Deviation	11.53	12.21
Sample Variance	132.93	149.09
Kurtosis	-0.29	-0.67
Skewness	0.78	0.4
Range	47.2	46.2
Minimum	0.1	1.1
Maximum	47.3	47.3
Sum	1372.2	520
Count	97	27

Table 21: Banding values of D2.2 Cannabis Use

	Set to
Minimum Value	Set to 0.1
Maximum Value	Set to global maximum (Palau, 59.8%)

Data Imputation Method
1. Take the most recent data point since 2000
2. Source alternative data references as per the below table

Table 22: Alternate Sources of D2.2 Cannabis Use

Country Name	Alternate Source Value	Alternate Source
United Kingdom (England and Wales)	32.3	http://data.gov.uk/dataset/drug-misuse-findings-from-british-crime-survey-2009-10/resource/cbbd65b9-9e5d-4005-b392-7322ba1ba662
Grenada	29.1	http://www.cicad.oas.org/mem/reports/4/Full_Eval/Grenada%20-%20 Fourth%20Round%20-%20ENG.pdf
Sierra Leone	2.7	http://www.unodc.org/docs/treatment/CoPro/Web_Sierra_Leone.pdf
Solomon Islands	14.3	http://www.who.int/chp/gshs/2011_GSHS_FS_Solomon_Islands.pdf

Figure 15: D2.2 Cannabis use banded results (between 0 and 1)
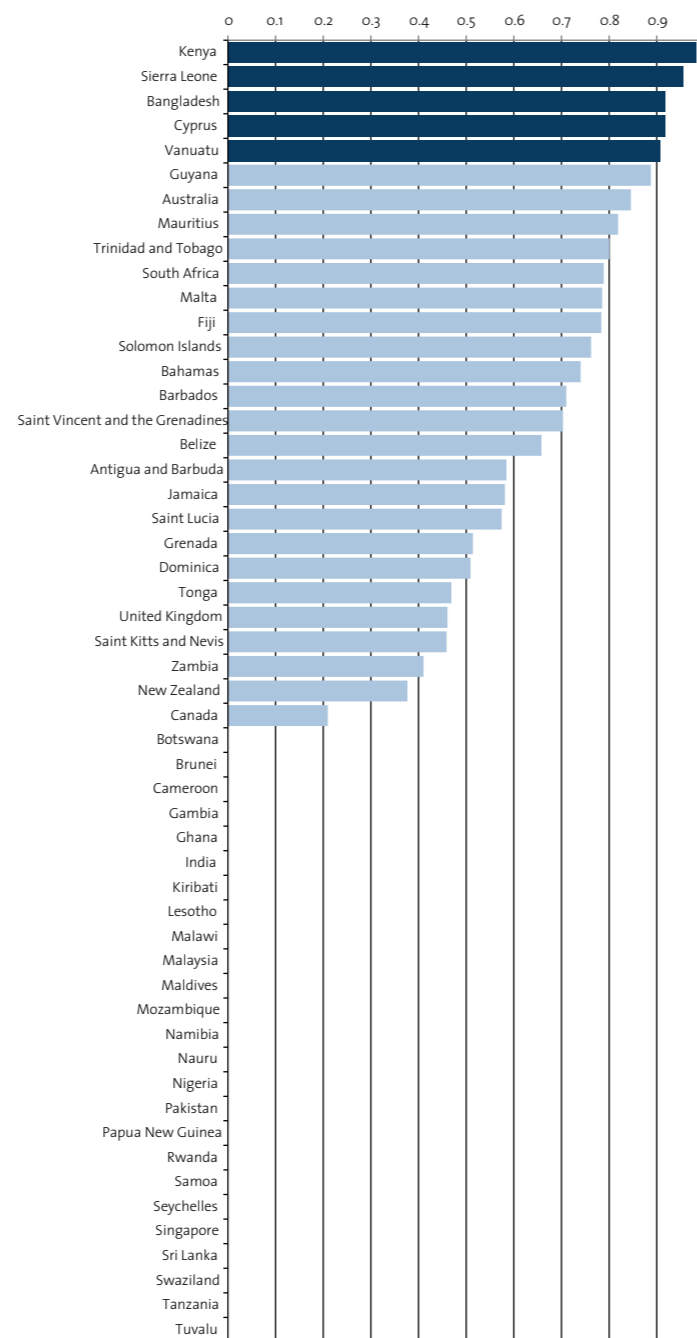
D2.3 Teenage Pregnancy Rates

Full Description: Adolescent fertility rate is the number of births per 1,000 women ages 15-19.

Rationale: There are well established links between teenage pregnancy and a number of poor health and socio-economic outcomes for both youths and society in general.

Source: World Bank

Website: http://data.worldbank.org/indicator/SP.ADO.TFRT

Accessed: Monday, 14 January 2013

Data Description

Figure 16: D2.3 Teenage Pregnancy Rate (Global = Blue, Commonwealth = Red)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 23: Descriptive Statistics of D2.3 Teenage Pregnancy Rates

D2.3 Teenage Pregnancy Rates	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Adolescent fertility rate (births per 1,000 women ages 15-19)	Adolescent fertility rate (births per 1,000 women ages 15-19)
Mean	50.39	57.91
Median	35.33	54.99
Mode	N/A	N/A
Standard Deviation	42.75	38.85
Sample Variance	1827.43	1509.64
Kurtosis	0.67	-0.49
Skewness	1.1	0.67
Range	198.36	135.92
Minimum	0.64	5.89
Maximum	199	141.81
Sum	8565.53	2663.76
Count	170	46

Table 24: Banding values of D2.3 Teenage Pregnancy Rates

	Set to
Minimum Value	Set to global minimum (South Korea, 2010, 0.644, per 1000 women 15-19)
Maximum Value	Set to global maximum (Democratic Republic of the Congo, 2000, 235 per 1000 women 15-19)

Data Imputation Method
1. Take the most recent data point since 2000

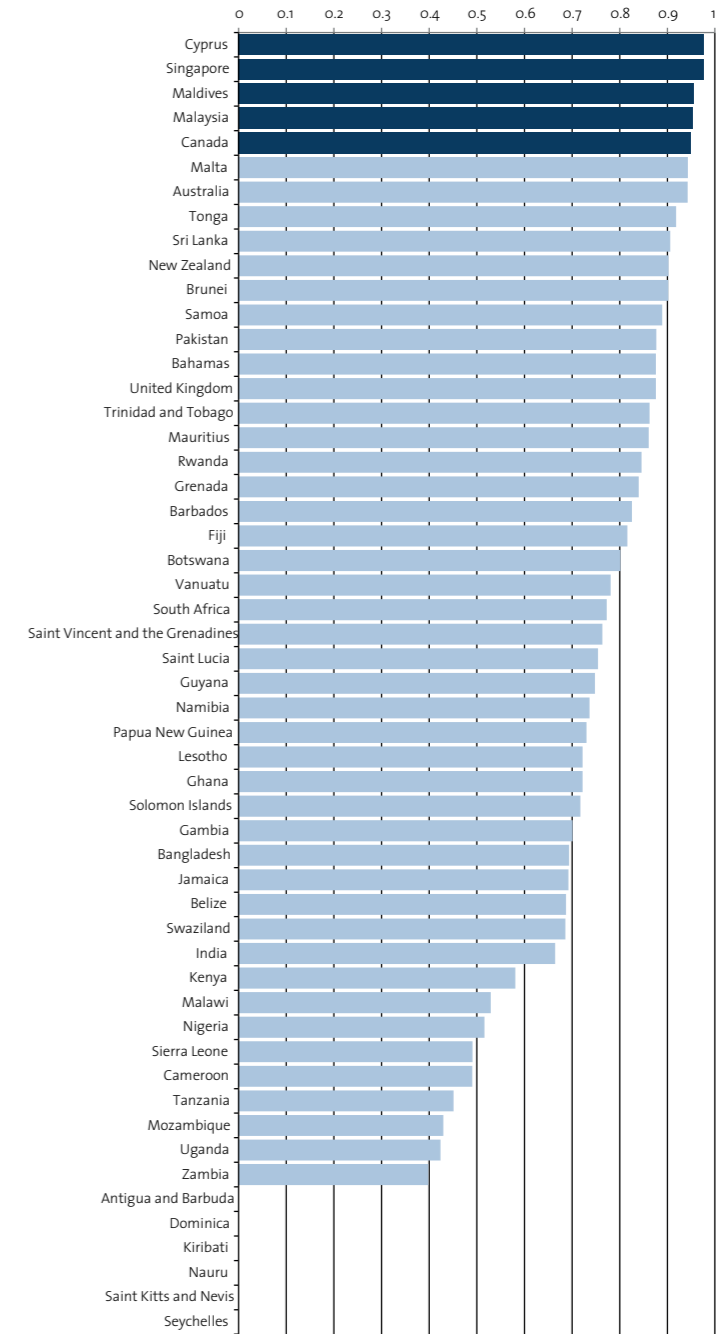**Figure 17:** D2.3 Teenage Pregnancy Rates banded results (between 0 and 1)

D2.4 HIV Prevalence

Full Description: Prevalence of HIV (Percentage of those aged 15-24)

Rationale: HIV prevalence rates are and indicator for the wellbeing of youth and have been accepted as measures of the Millennium Development Goals.
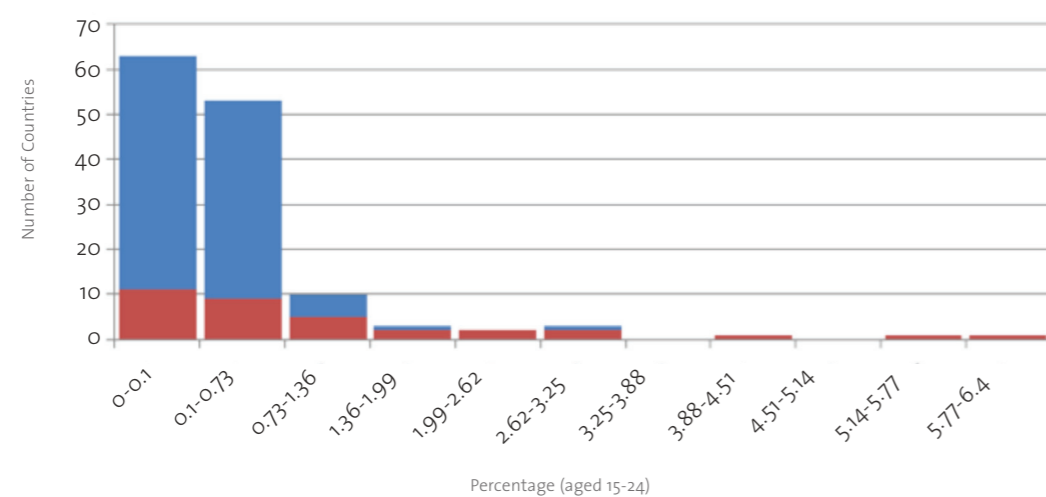
Source: UNAIDS and the WHO's Report on the Global AIDS Epidemic.

Website: http://data.worldbank.org/indicator/SH.HIV.1524.MA.ZS

Accessed: Monday, 14 January 2013

Data Description

Figure 18: D2.4 HIV Prevalence 15-24 (Global = Blue, Commonwealth = Red)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 25: Descriptive Statistics of D2.4 HIV Prevalence 15-24

D2.4 HIV Prevalence 15-24	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Prevalence of HIV, male (% ages 15-24) (Proportion, 0-1)	Prevalence of HIV, male (% ages 15-24) (Proportion, 0-1)
Mean	0.55	1.34
Median	0.2	0.55
Mode	N/A	N/A
Standard Deviation	1.07	1.76
Sample Variance	1.14	3.1
Kurtosis	15.28	2.44
Skewness	3.74	1.76
Range	6.3	6.3
Minimum	0.1	0.1
Maximum	6.4	6.4
Sum	76.8	48.2
Count	139	36

Table 26: Banding values of D2.4 HIV Prevalence 15-24

	Set to
Minimum Value	Set to 0.1%
Maximum Value	Set to global maximum (Lesotho, 2011, 6.4%)

Data Imputation Method

    1. Take the most recent data point since 2000

Figure 19: D2.4 HIV Prevalence banded results (between 0 and 1)

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1

Australia
Bangladesh
Canada
Fiji
Malaysia
Maldives
Malta
New Zealand
Pakistan
Singapore
Sri Lanka
United Kingdom
Guyana
Barbados
Papua New Guinea
Bahamas
Mauritius
Ghana
Jamaica
Trinidad and Tobago
Gambia
Sierra Leone
Belize
Rwanda
Nigeria
Cameroon
Kenya
Tanzania
Malawi
Uganda
Namibia
Zambia
Mozambique
Botswana
South Africa
Swaziland
Antigua and Barbuda
Brunei
Cyprus
Dominica
Grenada
India
Kiribati
Lesotho
Nauru
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Samoa
Seychelles
Solomon Islands
Tonga
Tuvalu

D2.5 Tobacco use

Full Description: Percentage of students between 13-15 years old who smoked cigarettes on at least 1 day during the month preceding the survey

Rationale: Tobacco use in early youth years is considered a good predictor of health problems at a later age and is included for this reason.

Source: Centres for Disease Control and Prevention Global Youth Tobacco Survey

Website: http://apps.nccd.cdc.gov

Accessed: Monday, 14 January 2013

Data Description

Figure 20: Tobacco Use (Global = Blue, Commonwealth = Red)

Percentage (aged 13-15)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 27: Descriptive Statistics of D2.5 Tobacco Use

D2.5 Tobacco Use	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentage of youths aged 13-15 who smoked tobacco on at least one occasion in the past month	Percentage of youths aged 13-15 who smoked tobacco on at least one occasion in the past month
Mean	11.36	11.08
Median	9.38	10
Mode	N/A	N/A
Standard Deviation	8.1	8.32
Sample Variance	65.63	69.22
Kurtosis	1.14	3.76
Skewness	1.12	1.5
Range	42.87	42.67
Minimum	1.03	1.23
Maximum	43.9	43.9
Sum	1681.37	532.01
Count	148	48

Table 28: Banding values of D2.5 Tobacco Use

	Set to
Minimum Value	Set to global minimum (Pakistan, 2004, 0.8%)
Maximum Value	Set to global maximum (Papua New Guinea, 2007, 43.9%)

Data Imputation Method

1. Take the most recent data point since 2000

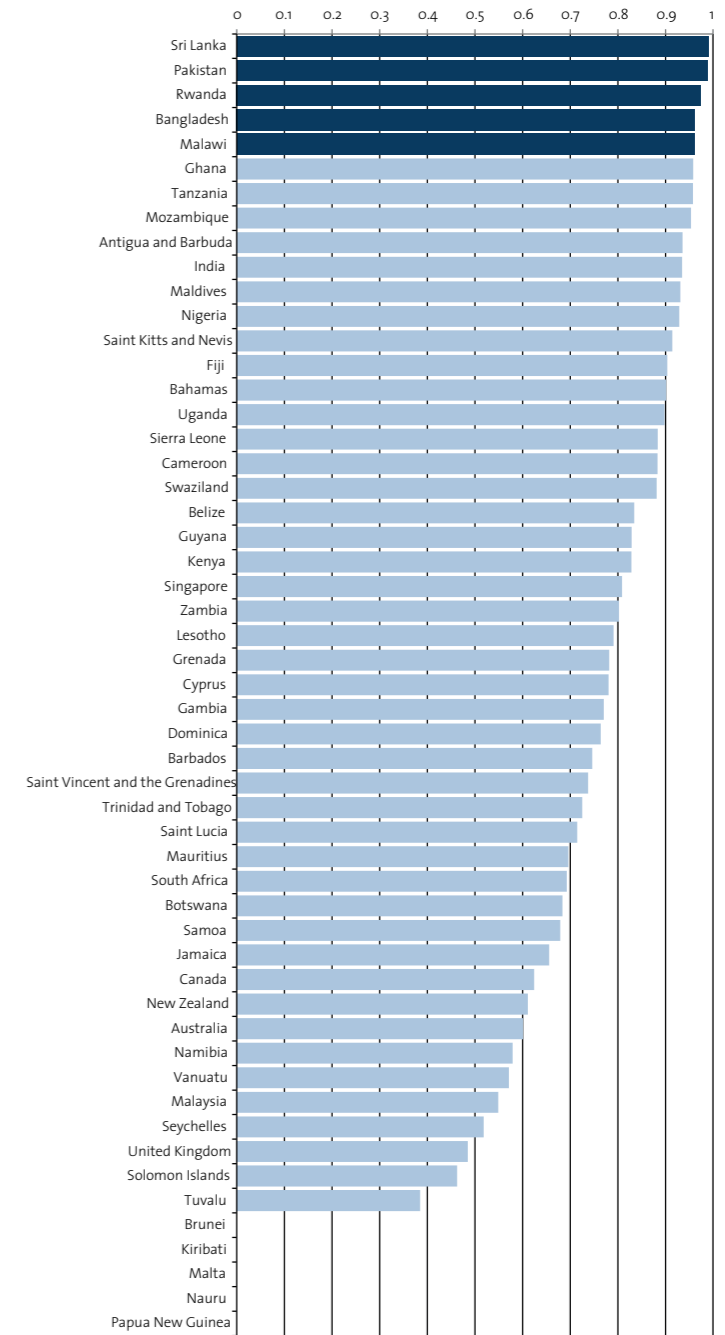**Figure 21:** D2.5 Tobacco use banded results (between 0 and 1)

DOMAIN 3 – EMPLOYMENT

D3.1 Unemployment 15-24 year olds

Full Description: Unemployment rate of 15-24 year olds

Rationale: Youth unemployment rate is a core indicator of underutilisation of the youth labour supply.

Source: United Nations Statistics Division, African Economic Outlook, International Labour Organisation, African Development Bank, National Statistical Authorities

Website: http://data.un.org/Data.aspx?q=youth+unemployment&d=MDG&f=seriesRowID%3a630

Accessed: Monday, 14 January 2013

Data Description

Figure 22: D3.1 Unemployment Rate 15-24 year olds (Global = Blue, Commonwealth = Red)
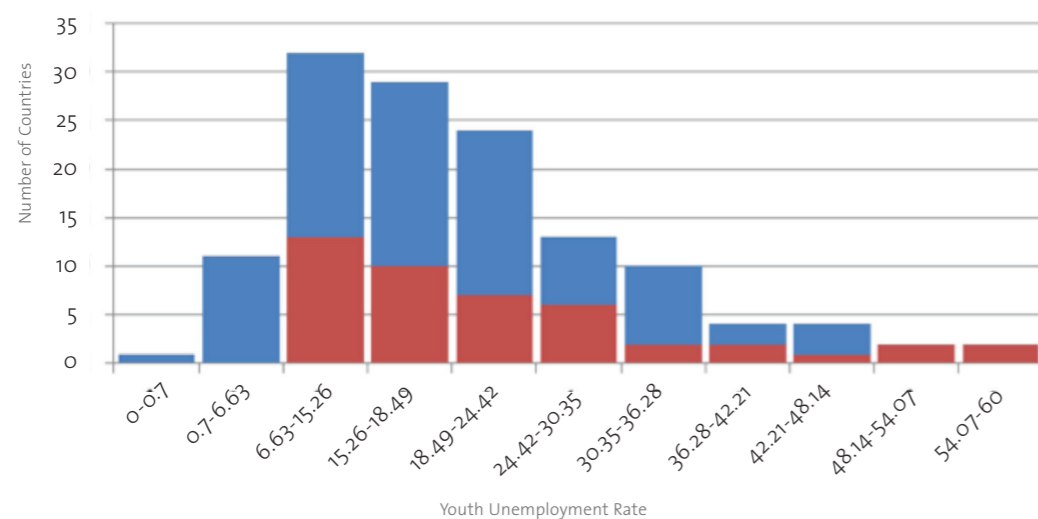
Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 29: Descriptive Statistics of D3.1 Youth Unemployment

D3.1 Youth Unemployment	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentage of young people unemployed (0%-100%)	Percentage of young people unemployed (0%-100%)
Mean	19.23	21.98
Median	16.9	17.75
Mode	N/A	N/A
Standard Deviation	11.79	13.4
Sample Variance	138.95	179.6
Kurtosis	0.89	0.88
Skewness	0.96	1.21
Range	59.3	53
Minimum	0.7	7
Maximum	65.2	60
Sum	2557.2	1010.9
Count	133	46

Table 30: Banding values of D3.1 Youth Unemployment

|	Set to
Minimum Value	Set to zero
Maximum Value	Set to global maximum (Macedonia, 2003, 65.2%)

Data Imputation Method

1. Take the most recent data point since 2000
2. Source alternative data references as per the below table

Table 31: Alternate Sources for Youth Unemployment

Country	Alternate Source Value	Alternate Source	Website
Brunei	10	Imputed by IEP	http://www.mhlw.go.jp/topics/2005/05/dl/tp0512-1b04.pdf
Cameroon	20	ILO and World bank – between 6.4 and 20%	http://www.ilo.org/ilostat/faces/home/statisticaldata/data_by_country (Search Cameroon)
Gambia	40	African Development Bank	http://www.africaneconomicoutlook.org/en/countries/west-africa/gambia/
Grenada	48.9	United Nations Economic Commission for Latin America & the Caribbean (UNECLAC)	http://www.eclac.org/publicaciones/xml/1/15411/l0013.pdf
Kenya	25	Kenyan Household survey	
Malawi	9.1	World Bank (too high an estimate)	http://data.worldbank.org/indicator/SL.UEM.1524.ZS
Mozambique	39	UN-Habitat	http://www.unescap.org/stat/meet/wimdgh/wimdge_g8_gora.pdf
Nigeria	31	UN-Habitat	http://www.unescap.org/stat/meet/wimdgh/wimdge_g8_gora.pdf
Rwanda	28	UN-Habitat (young women only)	http://www.unescap.org/stat/meet/wimdgh/wimdge_g8_gora.pdf
Saint Vincent and the Grenadines	36.1	UNECLAC, p16 (more comprehensive study)	http://www.eclac.org/publicaciones/xml/1/25721/LCL.2509_P.pdf
Solomon Islands	60	International Labour Organisation (ILO)	http://www.ilo.org/public/english/region/asro/bangkok/conf/youth/con_stu/solomon.pdf
Swaziland	50	African Development Bank	http://www.afdb.org/fileadmin/uploads/afdb/Documents/Knowledge/Labour%20Markets%20in%20Swaziland%20The%20Challenge%20of%20Youth%20Employment_01.pdf

Country	Alternate Source Value	Alternate Source	Website
Uganda	28	UN-Habitat	http://www.unescap.org/stat/meet/wimdgh/wimdge_g8_gora.pdf
Vanuatu	27	UNFPA	http://countryoffice.unfpa.org/filemanager/files/pacific/cp3.pdf
Benin	35	African Economic Outlook 2012	http://www.africaneconomicoutlook.org
Botswana	36.6	UNICEF	http://www.unicef.org/botswana/BCO__Annual_Report_2011.pdf
Burkina Faso	35	African Economic Outlook 2012	http://www.africaneconomicoutlook.org
Ghana	38.2	Reported much higher by Ghana statistical authorities	http://www.cepa.org.gh/researchpapers/Youth73.pdf
Liberia	40	African Economic Outlook 2012	http://www.africaneconomicoutlook.org
Madagascar	9	African Economic Outlook 2012	http://www.africaneconomicoutlook.org
Niger	40	African Economic Outlook 2012	http://www.africaneconomicoutlook.org
Sierra Leone	40.5	African Economic Outlook 2012 (Imputed from widely divergent figures)	http://www.africaneconomicoutlook.org
Trinidad and Tobago	12.1	Trinidad and Tobago Government	http://www.cpahq.org/cpahq/cpadocs/Wade-Paper%20on%20Tackling%20Youth%20Unemployment_58th%20CPC.pdf
Tanzania	27	Joint Initiative for Youth Employment in Africa	http://www.youthemploymentinafrica.org/documents/etude-chomage-emploi-tanzanie.pdf
Zimbabwe	37.3	International Labour Organisation (ILO)	http://www.ilo.org/public/english/region/afpro/harare/download/znyec/nango_speech.pdf
Malawi	45.5	National Youth Council of Malawi	http://www.nycommw.org/docs/youth_profile.pdf

Figure 23: D3.1 Youth Unemployment 15-24 year olds banded results
(between 0 and 1)
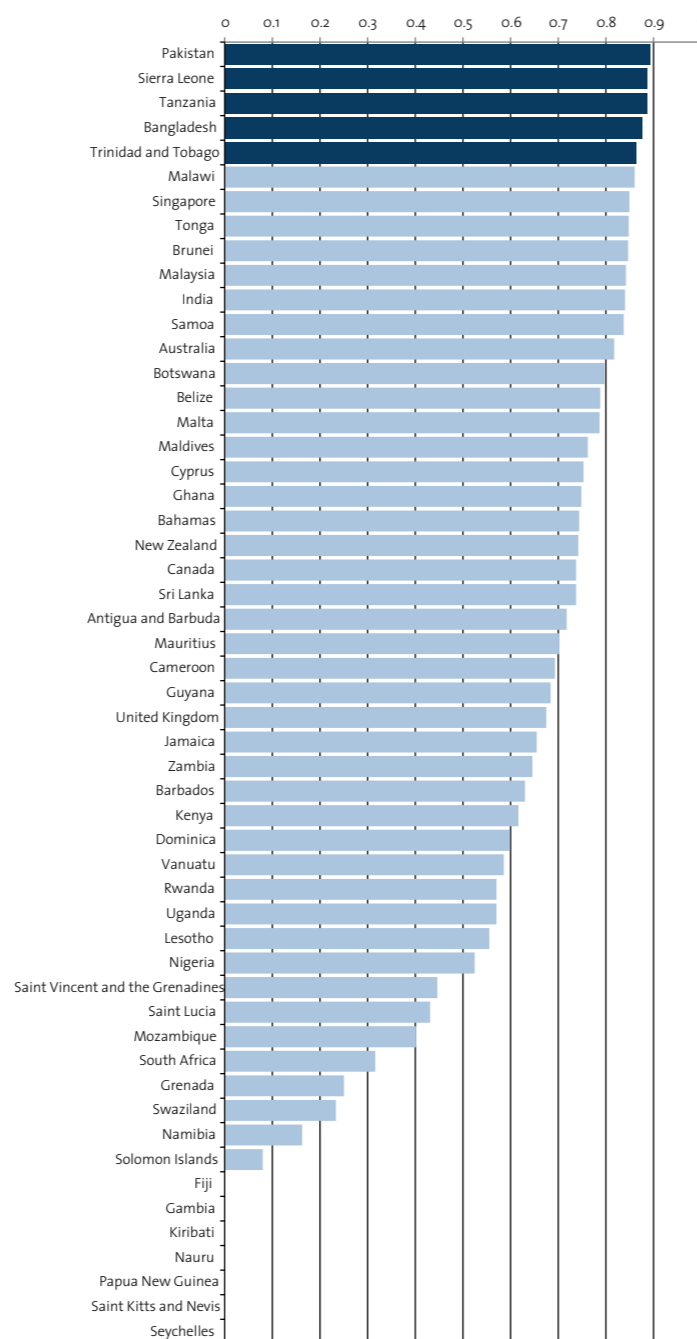
D3.2 Ratio of youth unemployment rate to adult unemployment rate

Full Description: This indicator is the ratio of the youth to adult unemployment rates. The youth unemployment rate is the proportion of the youth labour force that is unemployed; the adult unemployment rate is the proportion of the adult labour force that is unemployed. Young people are defined as persons aged between 15 and 24; adults are those aged 25 and above.

Unemployed comprise all persons above a specified age who, during the reference period, were: (a) without work; (b) currently available for work; and (c) actively seeking work1. The labour force is the sum of the number of persons employed and the number of persons unemployed.

Rationale: The ratio of youth to adult unemployment is an indicator which shows the extent to which youth are disproportionately affected by unemployment when compared to adults. This allows for the effects of general economic downturns to be factored out of a nation's employment score, to reveal the extent to which economic deprivation is felt by youth.

Source: United Nations Statistics Division

Website: http://data.un.org/Data.aspx?d=MDG&f=seriesRowID%3A671

Accessed: Monday, 14 January 2013

Data Description

Figure 24: D3.2 Ratio of youth unemployment rate to adult unemployment rate (Global = Blue, Commonwealth = Red)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 32: Descriptive Statistics of D3.2 Ratio of youth unemployment rate to adult unemployment rate

D3.2 Ratio of youth unemployment rate to adult unemployment rate	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Percentage of young people unemployed (0%-100%)	Percentage of young people unemployed (0%-100%)
Mean	3.1	2.99
Median	2.8	3
Mode	N/A	N/A
Standard Deviation	1.75	1.21
Sample Variance	3.05	1.47
Kurtosis	22.62	4.1
Skewness	3.98	1.63
Range	14.6	6.2
Minimum	0.8	0.8
Maximum	15.4	7
Sum	378.2	104.6
Count	122	35

Table 33: Banding values of D3.2 Ratio of youth unemployment rate to adult unemployment rate

	Set to
Minimum Value	Set to 0.8
Maximum Value	Set to global maximum (Kuwait, 2005, 15.4%)

Data Imputation Method

1. Take the most recent data point since 2000

Figure 25: D3.2 Ratio of youth unemployment rate to adult unemployment rate banded results (between 0 and 1)
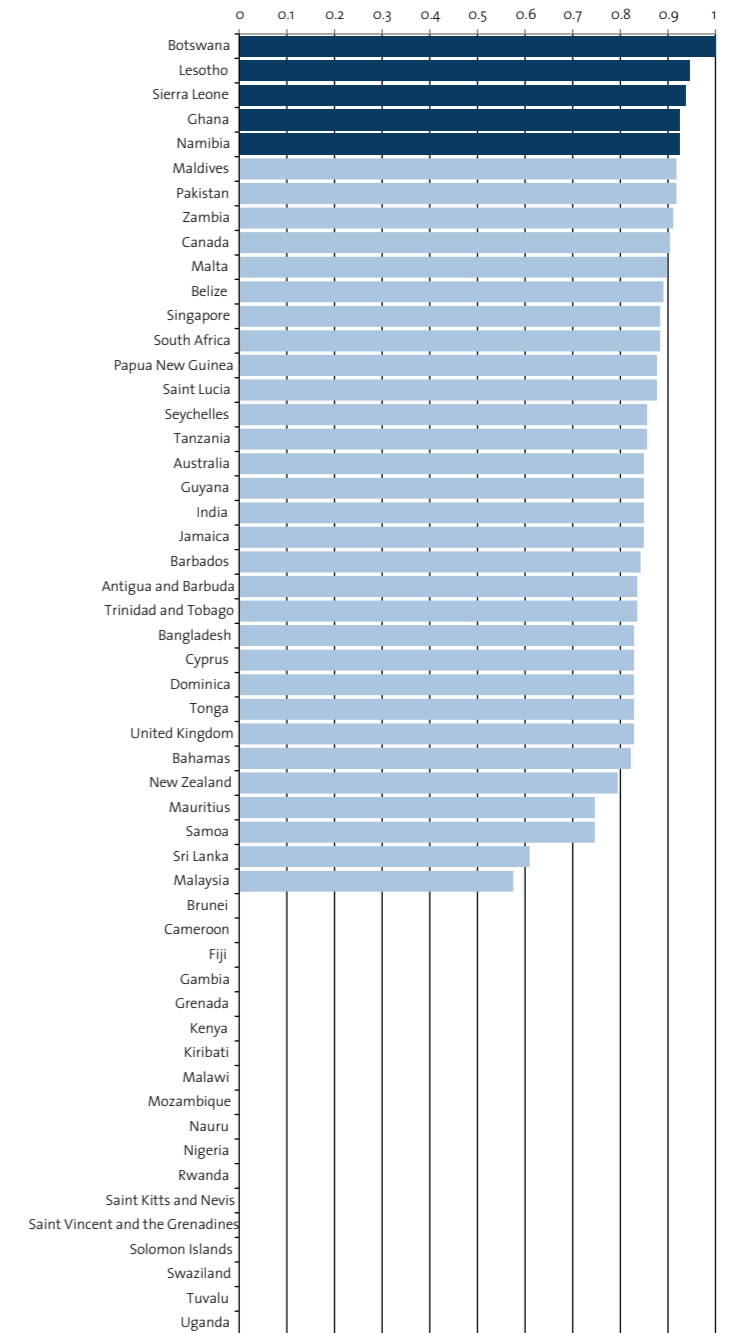
DOMAIN 4 – POLITICAL PARTICIPATION

D4.1 Youth Policies and Representation

Full Description: A score based on three questions, detailed below.

Table 34: D4.1 Youth Policies and Representation Scoring System

Question ID	Question	Scoring System
D4.1.1	Does the Country have a national youth policy? (existing OR drafted)	If Yes then 0.5, else 0
D4.1.2	Does the country have Youth Representative Bodies?	If Yes then 0.25, else 0
D4.1.3	Does the country have other mechanisms for youth participation?	If Yes then 0.25, else 0

The final D4.1 score is the sum of the scores of D4.1.1, D4.1.2 and D4.1.3

Rationale: The purpose of these questions is to measure political participation in both directions in that they cover both top down policies and bottom up initiatives for youth political participation. Top down national approaches is given a weighting of 0.5 to reflect the national formalised recognition of youth development in a country. The two bottom up approach questions are given a weighting of 0.25 each to reflect that these individually are perhaps not as effective as a national strategy, but combined are still equally as important.

Source: Commonwealth Secretariat research. Where a Commonwealth Country was missing from this source, the following references have been used.

Bangladesh:
D4.1.1 : Yes – http://www.youth-policy.com/Policies/BGDnyp1.pdf

D4.1.2: Yes – http://ypsa.org/

Canada:
D4.1.1: Yes – http://www.unitedwaytoronto.com/downloads/whatWeDo/reports/YouthPolicy-WhatWorks-fullreport.pdf

D4.1.2: Yes – http://orgs.tigweb.org/the-national-youth-council-of-canada

D4.1.3: Yes – http://www.democracy-democratie.ca/content.asp?section=nyc&dir=nyc2012&document=index&lang=e

India:
D4.1.1: Yes - National Youth Policy - http://www.planwithyouth.org/resources/youth-policies/

Pakistan:
D4.1.1: Yes - National Youth Policy - http://www.planwithyouth.org/resources/youth-policies/

Singapore:
D4.1.2: Yes - National Youth Council - http://www.google.com.au/url?sa=t&rct=j&q=singapore%20youth%20policy&source=web&cd=2&cad=rja&ved=0CD0QFjAB&url=http%3A%2F%2Fwww.nyc.pa.gov.sg%2Findex.php%2Ffaq&ei=qYQhUfyVE-igmQWY94DQCQ&usg=AFQjCNFF3pjoZB6sX1W5Yo5_j3z22Dxiig&bvm=bv.42553238,d.dGY

Sri Lanka:
D4.1.1: In process - http://www.ou.ac.lk/nypsl/

Malaysia:
D4.1.1: Yes - http://www.escap-hrd.org/ymal.htm(Global = Blue, Commonwealth = Red)

Data Description

Figure 26: D4.1 Youth Policies and Representation (Global = Blue*, Commonwealth = Red)
*Global data has not been collected for this indicator

Youth Policies and Representation Score
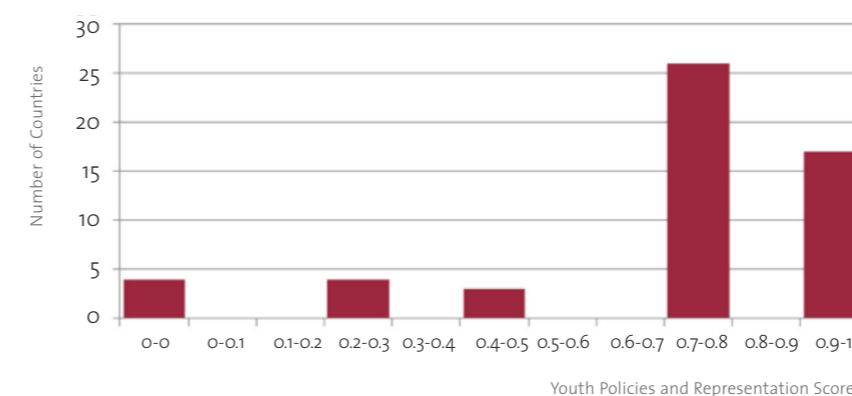
Years Available: N/A

Table 35: Descriptive Statistics of D4.1 Youth Policies and Representation

D4.1 Youth Policies and Representation	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Mean	0.72	0.72
Standard Error	0.29	0.29
Median	0.75	0.75
Mode	N/A	N/A
Standard Deviation	0.29	0.29
Sample Variance	0.08	0.08
Kurtosis	0.99	0.99
Skewness	-1.28	-1.28
Range	1	1
Minimum	0	0
Maximum	1	1
Sum	39	39
Count	54	54

Table 36: Banding values of D4.1 Youth Policies and Representation

	Set to
Minimum Value	Set to 0
Maximum Value	Set to 1

Figure 26: D4.1 Youth Policies and Representation banded results (between 0 and 1)

D4.2 Voting Education

Full Description: A score based on the answer to the question "At the national level, how often are voter education programs conducted?" as per **Table 37**

Table 37: D4.2 Voter Education Scoring System

No information available	0
Continuously	1
Election time only	0.5
Not applicable	0

Rationale: Based on the presumption that at least some voter education programs are primarily intended for youth entering the political process for the first time, this indicator is a measure of how much a society encourages, nurtures and respects political participation of young people.

Website: https://www.cia.gov/library/publications/the-world-factbook/fields/2123.html

Accessed: Monday, 14 January 2013

Years Available: N/A

Data Description

Figure 27: D4.2 Voting Education (Global = Blue, Commonwealth = Red)

Table 38: Descriptive Statistics of D4.2 Voter Education

D4.2 Voter Education	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Score based on voter education programs (0,0.5 or 1)	Score based on voter education programs (0,0.5 or 1)
Mean	0.5	0.53
Median	0.5	0.5
Mode	N/A	N/A
Standard Deviation	0.39	0.39
Sample Variance	0.15	0.15
Kurtosis	-1.31	-1.33
Skewness	-0.01	-0.12
Range	1	1
Minimum	0	0
Maximum	1	1
Sum	77.5	24
Count	154	45

Table 39: Banding values of D4.2 Voter Education

	Set to
Minimum Value	Set to 0
Maximum Value	Set to 1

Figure 28: D4.2 Voting Education banded results (between 0 and 1)

D4.3 Express Political Views

Full Description: Positive responses of people ages between 15-24 to the question "Have you done any of the following in the past month? How about voiced your opinion to a public official?" (Yes, No, Don't Know, Refused to Respond)

Rationale: Expressing political views indicates how engaged young people are/believe they are in society.

Source: Gallup World Poll

Website: http://www.gallup.com/strategicconsulting/worldpoll.aspx

Accessed: Monday, 14 January 2013

Data Description

Figure 29: Express Political Views (Global = Blue, Commonwealth = Red)
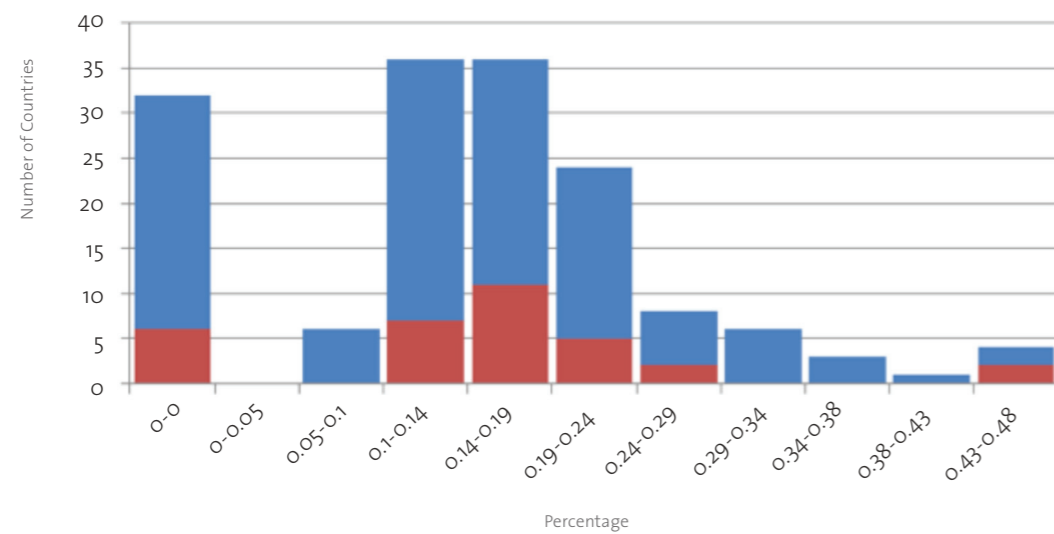
Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 40: Descriptive Statistics of D4.3 Express Political Views

D4.3 Express Political Views	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Proportion of people between 15-24 years old who responded 'Yes' (0-1)	Proportion of people between 15-24 years old who responded 'Yes' (0-1)
Mean	0.1	0.16
Median	0.08	0.16
Mode	N/A	N/A
Standard Deviation	0.1	0.11
Sample Variance	0.01	0.01
Kurtosis	1.93	2.77
Skewness	1.25	1.09
Range	0.45	0.48
Minimum	0	0
Maximum	0.45	0.48
Sum	18.18	5.34
Count	178	34

Table 41: Banding values of D4.3 Express Political Views

	Set to
Minimum Value	Set to 0
Maximum Value	Set to global maximum (Slovenia, 0.48, 2010)

Data Imputation Method

    1. Take the most recent data point since 2000

Figure 30: D4.3 Express Political Views banded results (between 0 and 1)
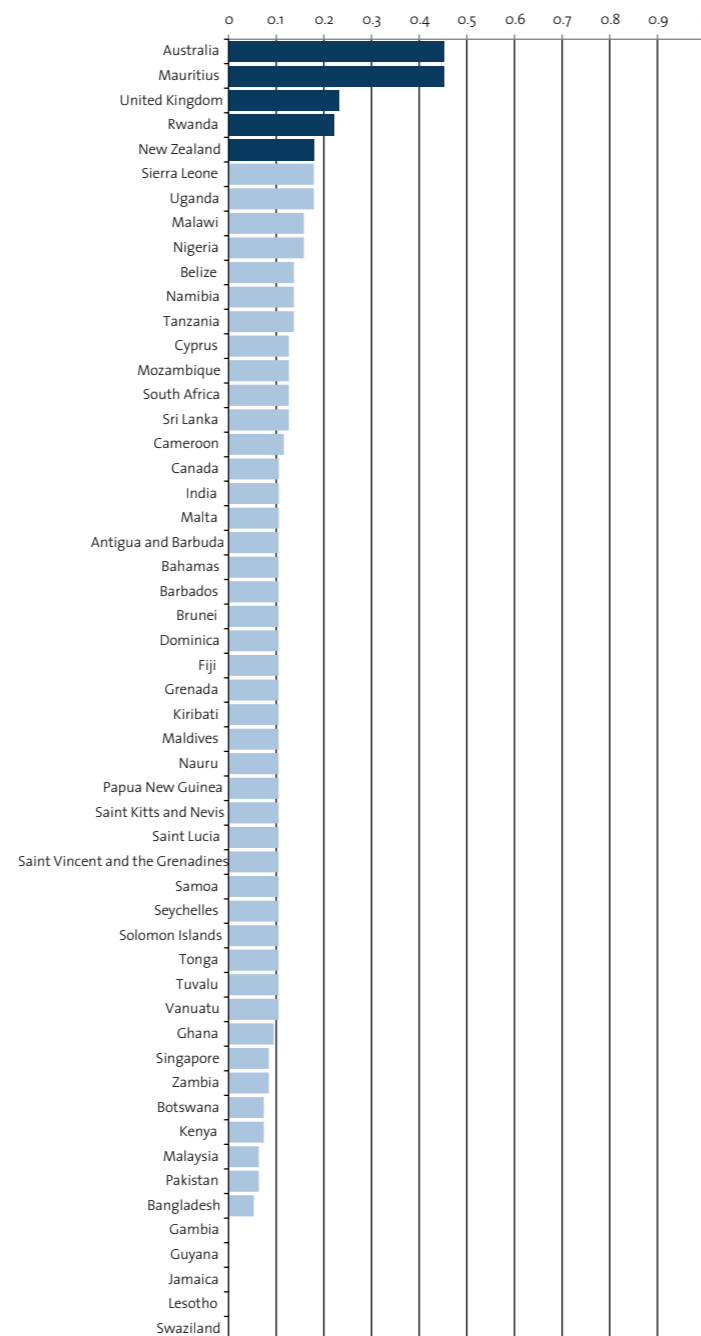
D5.1 Volunteering

Full Description: Positive responses of people ages between 15-24 to the question "Have you done any of the following in the past month? How about volunteered your time to an organization? " (Yes, No, Don't Know, Refused to Respond)

**Rationale:** Used as an indicator in how engaged young people are/believe they are in society and to civic duties.

Source: Gallup World Poll

Website: http://www.gallup.com/strategicconsulting/worldpoll.aspx

Accessed: Monday, 14 January 2013

Data Description

Figure 31: D5.1 Volunteering (Global = Blue, Commonwealth = Red)

Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 42: Descriptive Statistics of D5.1 Volunteering

D5.1 Volunteering	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Proportion of people between 15-24 years old who responded 'Yes' (0-1)	Proportion of people between 15-24 years old who responded 'Yes' (0-1)
Mean	0.22	0.24
Median	0.21	0.27
Mode	N/A	N/A
Standard Deviation	0.09	0.08
Sample Variance	0.01	0.01
Kurtosis	2.35	-0.47
Skewness	1.17	-0.24
Range	0.57	0.34
Minimum	0.07	0.08
Maximum	0.64	0.42
Sum	31.45	7.92
Count	142	33

Table 43: Banding values of D5.1 Volunteering

	Set to
Minimum Value	Set to global minimum (Jordan, 2009, 0.3)
Maximum Value	Set to global maximum (Turkmenistan, 2009, 0.64)

Data Imputation Method

1. Take the most recent data point since 2000

Figure 32: D5.1 Volunteering banded results (between 0 and 1)

D5.2 Helped A Stranger

Full Description: Positive responses of people ages between 15-24 to the question "Have you done any of the following in the past month? How about helped a stranger or someone you didn't know who needed help? " (Yes, No, Don't Know, Refused to Respond)

Rationale: Used as an indicator in how engaged young people are/believe they are in society and to civic duties.
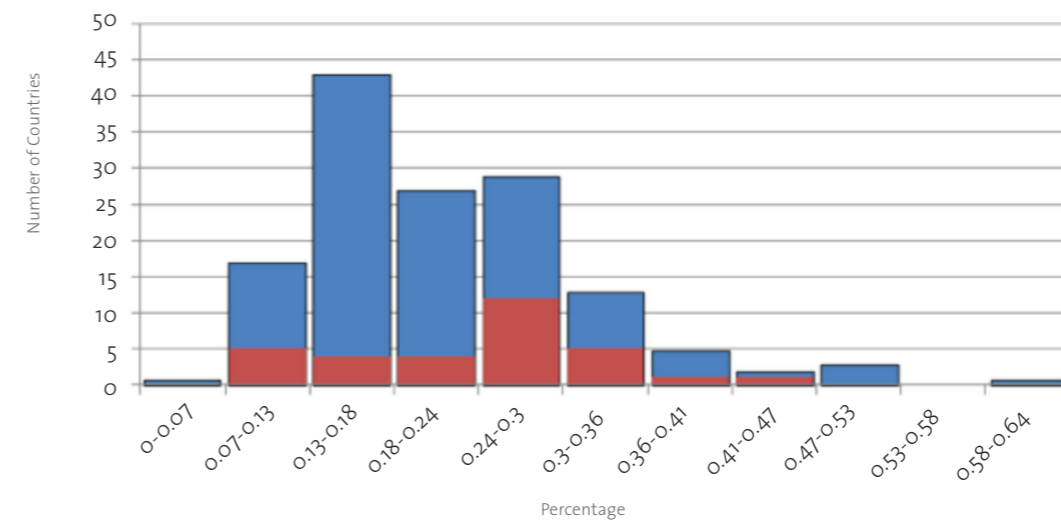
Source: Gallup World Poll

Website: http://www.gallup.com/strategicconsulting/worldpoll.aspx

Accessed: Monday, 14 January 2013

Data Description

Figure 33: Helped A Stranger (Global = Blue, Commonwealth = Red)
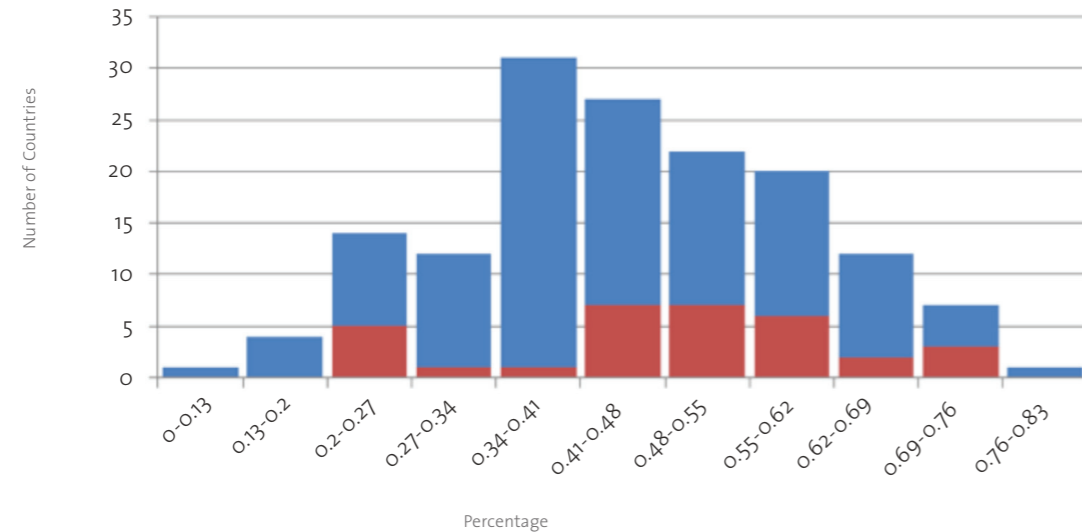
Years Available (High – Blue, Medium – Grey, Low to None – Clear)

Earlier	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012

Table 44: Descriptive Statistics of D5.2 Helped A Stranger

D5.2 Helped A Stranger	Descriptive Stats (Global)	Descriptive Stats (Commonwealth)
Units	Proportion of people between 15-24 years old who responded 'Yes' (0-1)	Proportion of people between 15-24 years old who responded 'Yes' (0-1)
Mean	0.45	0.49
Median	0.45	0.5
Mode	N/A	N/A
Standard Deviation	0.14	0.14
Sample Variance	0.02	0.02
Kurtosis	-0.45	-0.37
Skewness	0.13	-0.35
Range	0.7	0.52
Minimum	0.13	0.22
Maximum	0.83	0.74
Sum	69.11	16.29
Count	152	33

Table 45: Banding values of D5.1 Volunteering

	Set to
Minimum Value	Set to global minimum (Cambodia, 2009, 0.1)
Maximum Value	Set to global maximum (USA, 2007, 0.8)

Data Imputation Method

 1. Take the most recent data point since 2000

Figure 34: D5.1 Volunteering banded results
(between 0 and 1)

Australia
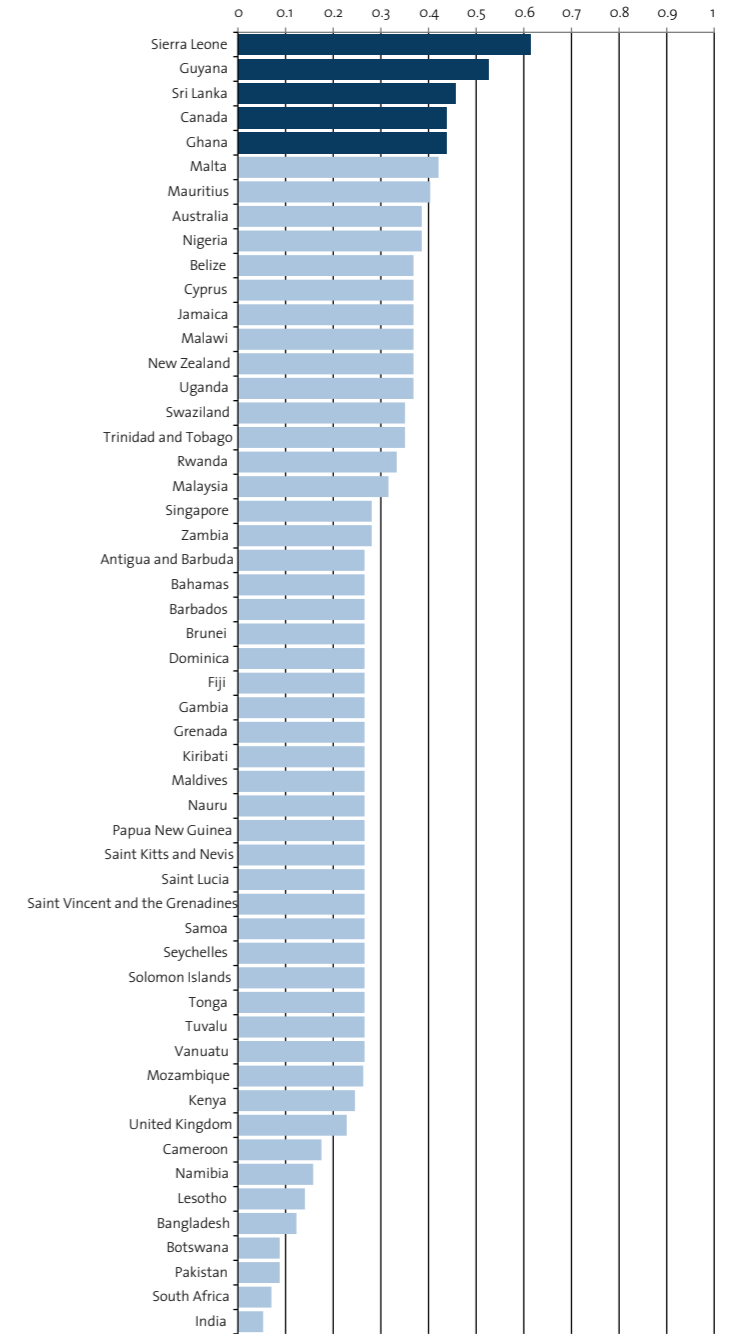United Kingdom
Sierra Leone
New Zealand
Lesotho
Ghana
Guyana
South Africa
Canada
Jamaica
Zambia
Trinidad and Tobago
Swaziland
Belize
Namibia
Nigeria
Bangladesh
Mozambique
Uganda
Malta
Mauritius
Malawi
Malaysia
Antigua and Barbuda
Bahamas
Barbados
Brunei
Dominica
Fiji
Gambia
Grenada
Kiribati
Maldives
Nauru
Papua New Guinea
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Samoa
Seychelles
Solomon Islands
Tonga
Tuvalu
Vanuatu
Sri Lanka
Botswana
Cameroon
Kenya
Singapore
India
Pakistan
Tanzania
Rwanda

Commonwealth Youth Development Index (YDI) Indicator Correlation Matrix

The 17 selected indicators of the YDI have been correlated to see how each indicator relates to another statistically. In the correlation matrix shown in **Table 63**, it can be seen there are only 16 instances where indicators in the YDI are collinear, highlighting each indicator is statistically measuring distinct aspects of youth development.

Table 46: Indicator Correlation Matrix of the Commonwealth Secretariat YDI

DATASETS	D1.1 Mean Years of Schooling	D1.2 Education % GDP	D1.3 Youth Literacy	D2.1 Youth Mortality 15-29 (per 1000 youths)	D2.2 Cannabis Use	D2.3 Teenage Pregnancy Rates	D2.4 HIV Prevalence 15-24	D2.5 Tobacco Use	D3.1 Unemployment 15-24	D3.2 Youth to Total Employment Ratio	D4.1 Youth Policies and Representation	D4.2 Voter Education	D4.3 Express Political Views	D5.1 Volunteering	D5.2 Helped A Stranger
D1.1 Mean Years of Schooling	1.00	0.21	0.80	−0.57	0.42	−0.67	−0.17	0.42	0.15	−0.11	−0.10	0.00	0.09	0.17	0.07
D1.2 Education % GDP	0.21	1.00	0.13	−0.06	0.11	−0.25	0.23	0.14	0.16	−0.16	−0.03	0.09	0.10	0.07	0.13
D1.3 Youth Literacy	0.80	0.13	1.00	−0.48	0.12	−0.71	−0.03	0.22	0.25	0.14	−0.14	−0.06	−0.04	0.03	0.02
D2.1 Youth Mortality 15-29 (per 1000 youths)	−0.57	−0.06	−0.48	1.00	−0.23	0.65	0.64	−0.26	0.01	−0.20	−0.12	0.12	−0.14	−0.17	−0.03
D2.2 Cannabis Use	0.42	0.11	0.12	−0.23	1.00	−0.26	0.06	0.36	0.20	−0.06	−0.06	−0.08	0.17	0.16	0.32
D2.3 Teenage Pregnancy Rates	−0.67	−0.25	−0.71	0.65	−0.26	1.00	0.29	−0.17	−0.15	−0.16	−0.07	0.05	−0.02	−0.05	0.02
D2.4 HIV Prevalence 15-24	−0.17	0.23	−0.03	0.64	0.06	0.29	1.00	−0.12	0.36	−0.19	−0.09	0.16	−0.13	−0.13	0.14
D2.5 Tobacco Use	0.42	0.14	0.22	−0.26	0.36	−0.17	−0.12	1.00	0.24	−0.08	0.27	0.05	−0.01	−0.07	−0.15
D3.1 Unemployment 15-24	0.15	0.16	0.25	0.01	0.20	−0.15	0.36	0.24	1.00	−0.07	0.16	−0.08	−0.14	−0.07	0.01
D3.2 Youth to Total Employment Ratio	−0.11	−0.16	0.14	−0.20	−0.06	−0.16	−0.19	−0.08	−0.07	1.00	−0.21	−0.17	0.06	−0.10	−0.01
D4.1 Youth Policies and Representation	−0.10	−0.03	−0.14	−0.12	−0.06	−0.07	−0.09	0.27	0.16	−0.21	1.00	0.25	0.22	0.33	0.48
D4.2 Voter Education	0.00	0.09	−0.06	0.12	−0.08	0.05	0.16	0.05	−0.08	−0.17	0.25	1.00	−0.01	0.02	0.24
D4.3 Express Political Views	0.09	0.10	−0.04	−0.14	0.17	−0.02	−0.13	−0.01	−0.14	0.06	0.22	−0.01	1.00	0.22	0.31
D5.1 Volunteering	0.17	0.07	0.03	−0.17	0.16	−0.05	−0.13	−0.07	−0.07	−0.10	0.33	0.02	0.22	1.00	0.36
D5.2 Helped A Stranger	0.07	0.13	0.02	−0.03	0.32	0.02	0.14	−0.15	0.01	−0.01	0.48	0.24	0.31	0.36	1.00

Perfect correlation   Strong negative correlation   Zero correlation

Commonwealth Youth Development Index – Results

Table 47: Commonwealth countries YDI Rankings

Country	Code	Rank	YDI Score	Classification	Data Availability (Gallup Not Included)
Australia	AUS	1	0.86	High	100%
Canada	CAN	2	0.82	High	100%
New Zealand	NZL	3	0.80	High	100%
Malta	MLT	4	0.77	High	92%
United Kingdom	GBR	5	0.77	High	100%
Cyprus	CYP	6	0.75	High	92%
Jamaica	JAM	7	0.75	High	100%
Singapore	SGP	8	0.74	Medium	92%
Trinidad and Tobago	TTO	9	0.74	Medium	100%
Guyana	GUY	10	0.73	Medium	100%
Belize	BLZ	11	0.72	Medium	100%
Mauritius	MUS	12	0.72	Medium	100%
Bahamas	BHS	13	0.72	Medium	100%
Barbados	BRB	14	0.72	Medium	100%
Samoa	WSM	15	0.72	Medium	75%
Tonga	TON	16	0.71	Medium	83%
Maldives	MDV	17	0.69	Medium	92%
Malaysia	MYS	18	0.68	Medium	92%
Sri Lanka	LKA	19	0.64	Medium	92%
Antigua and Barbuda	ATG	20	0.63	Medium	83%
Dominica	DMA	21	0.62	Medium	83%
Bangladesh	BGD	22	0.61	Medium	92%
Pakistan	PAK	23	0.61	Medium	83%
Ghana	GHA	24	0.60	Medium	92%
India	IND	25	0.58	Medium	83%
South Africa	ZAF	26	0.58	Medium	100%
Botswana	BWA	27	0.55	Medium	92%
Vanuatu	VUT	28	0.54	Medium	83%

Country	Code	Rank	YDI Score	Classification	Data Availability (Gallup Not Included)
Sierra Leone	SLE	29	0.54	Medium	100%
Saint Lucia	LCA	30	0.53	Medium	83%
Brunei	BRN	31	0.52	Medium	58%
Lesotho	LSO	32	0.52	Medium	92%
Seychelles	SYC	33	0.50	Medium	67%
Zambia	ZMB	34	0.50	Medium	100%
Fiji	FJI	35	0.50	Medium	75%
Namibia	NAM	36	0.49	Medium	92%
Papua New Guinea	PNG	37	0.48	Medium	67%
Grenada	GRD	38	0.47	Medium	75%
Solomon Islands	SLB	39	0.44	Medium	83%
Saint Vincent and the Grenadines	VCT	40	0.43	Medium	75%
Tanzania	TZA	41	0.43	Medium	92%
Cameroon	CMR	42	0.42	Medium	83%
Kenya	KEN	43	0.42	Medium	92%
Nigeria	NGA	44	0.36	Low	75%
Rwanda	RWA	45	0.33	Low	83%
Malawi	MWI	46	0.33	Low	83%
Uganda	UGA	47	0.32	Low	83%
Gambia	GMB	48	0.31	Low	75%
Swaziland	SWZ	49	0.30	Low	75%
Saint Kitts and Nevis	KNA	50	0.30	Low	58%
Mozambique	MOZ	51	0.29	Low	83%
Kiribati	KIR	No Rank	0.29	Low	42%
Tuvalu	TUV	No Rank	0.19	Low	25%
Nauru	NRU	No Rank	0.18	Low	25%

*Tuvalu, Kiribati and Nauru do not have enough data to receive a Youth Development Score because they fall below the 50% data requirement threshold required to receive a score.

Sensitivity analysis of the results

Currently the methodology assigns countries the lowest value if a data point is missing for any indicator. It is possible to investigate the sensitivity of a country's YDI score by assigning data gaps the maximum value possible and comparing the two sets of results. The following tables summaries these results for each Commonwealth country

Table 48: Countries that remain in the same YDI group (28 countries)

Country	Youth Development Group (High, Medium, Low)
Australia	High
Canada	High
Cyprus	High
Jamaica	High
Malta	High
New Zealand	High
United Kingdom	High
Bangladesh	Medium
Belize	Medium
Botswana	Medium
Cameroon	Medium
Ghana	Medium
Guyana	Medium
India	Medium
Kenya	Medium
Lesotho	Medium
Malawi	Medium
Malaysia	Medium
Mauritius	Medium
Namibia	Medium
Pakistan	Medium
Sierra Leone	Medium
Solomon Islands	Medium
South Africa	Medium
Sri Lanka	Medium
Tanzania	Medium
Trinidad and Tobago	Medium
Zambia	Medium

Table 49: Countries that may improve their YDI group with additional data (26 countries)

Country	Current YDI Group	Potential YDI Group
Antigua and Barbuda	Medium	High
Bahamas	Medium	High
Barbados	Medium	High
Brunei	Medium	High
Dominica	Medium	High
Fiji	Medium	High
Gambia	Low	Medium
Grenada	Medium	High
Maldives	Medium	High
Mozambique	Low	Medium
Nigeria	Low	Medium
Papua New Guinea	Medium	High
Rwanda	Low	Medium
Saint Lucia	Medium	High
Saint Vincent and the Grenadines	Medium	High
Samoa	Medium	High
Seychelles	Medium	High
Singapore	Medium	High
Swaziland	Low	Medium
Tonga	Medium	High
Uganda	Low	Medium
Vanuatu	Medium	High
Tuvalu	Low	High
Saint Kitts and Nevis	Low	High
Nauru	Low	High
Kiribati	Low	High

REFERENCES

Acket, S., Borsenberger, M., Dickes, P., & Sarracino, F. (2011). Measuring and validating social cohesion : a bottom-up approach. Paper presented at the International Conference on Social Cohesion and Development organised by the OECD, Development Centre, Paris 20-21st January 2011 (pp. 1–33). Paris.

Constance Flanagan & Ronald Youth Civic Engagement in Kassimir, 'the Developing World: Challenges and Opportunities' in **Handbook of Research on Civic Engagement in Youth**, 2010, Lonnie R Sherrod, Judith Torney-Purta (ed), Constance A. Flanagan, Wiley & Sons, New Jersey, p. 98.

Declaration, C. (2008). Promoting Social Integration – A Brief Examination of Concepts and Issues Prepared by M. Sharon Jeannotte for Experts Group Meeting Helsinki, Finland Introduction Conceptual issues, 1–15.

Fawcett, C., Hartwell, A., & Israel, R. (2010). Out-of-School Youth in Developing Countries : What the data do (and do not) tell us (pp. 1–65).

Headquarters, U. N., & York, N. (2005). Report of the Expert group meeting on Youth Development Indicators, (December), 12–14.

Hiv, C. (2010). Official list of MDG indicators, (January 2008), 6–7.

Humphreys, M., & Varshney, A. (2004). Violent Conflict and the Millennium Development Goals: Diagnosis and Recommendations. Prepared for the meeting of the Millennium Development Goals Poverty Task Force Workshop, Bangkok June 2004 (pp. 1–39).

Jacobo, B. J. (2003). The UNESCO Youth Development Index, 1–8.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2008). Governance Matters VII : Aggregate and Individual Governance Indicators 1996-2007.

Kaufmann, D., Zoido-lobatón, P., & Kraay, A. (1999). Governance Matters. Washington DC.

United Nations (2011). Quantitative indicators for the World Programme of Action for Youth Draft Report of the expert group, (December), 12–13.

Organisation for Economic Co-Operation and Development. (2008). Handbook on Constructing Composite Indicators (pp. 1–162).

Commonwealth Secretariat (2007). The Commonwealth Plan of Action for Youth Empowerment, 1–44.

Santiso, C. (2001). Good Governance and Aid Effectiveness: The World Bank and Conditionality. **The Georgetown Public Policy Review**, 7(1), 1–22.

Schmitt, E. (2012). Family characteristics as predictors of school achievement: parental involvement as a mediator. New York Times, Jan(March), 1–16.

The World Bank. (2012). Societal Dynamics & Fragility: Engaging Societies in Responding to Fragile Situations – Summary Report (pp. 1–33). Washington D.C. Retrieved from www.worldbank.org/socialdevelopment.

United Nations. (2011). Quantitative indicators for the World Programme of Action for Youth. Quantitative indicators for the World Programme of Action for Youth New York, 12-13 December 2011 (pp. 1–38). New York.

United Nations Department of Economic and Social Affairs. (2011). United Nations World Youth Report 2011: " Youth Employment : Youth Perspectives on the Pursuit of Decent Work in Changing Times " (pp. 1–174). Retrieved from http://unworldyouthreport.org.

United Nations Development Programme (1990). Concept and Measurement of human development. Retrieved from http://hdr.undp.org/en/reports/global/hdr1990/chapters/.

United Nations Development Programme. (2011). Human Development Report 2011. Retrieved from http://hdr.undp.org/en/reports/global/hdr2011.

Urdal, H. (2012). A Clash of Generations? Youth Bulges and Political Violence (pp. 1–20).

Vanoli, A. (2010). On the Report by the Commission on the Measurement of Economic Performance and Social Progress (2009). **SSRN Electronic Journal**. doi:10.2139/ssrn.1714428.