



# USAID Self-Reliance Metrics FY 2019 Methodology Guide

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# I. Overview

The United States Agency for International Development (USAID) is focused on ensuring that it is best supporting its partner countries' abilities to plan, finance and implement solutions to address their own development challenges. If we are to one day end the need for foreign assistance, USAID needs to understand how self-reliant each of its partner countries is overall and where a country's self-reliance strengths and challenges are, so that the Agency can reorient its partnerships accordingly. Ultimately, we must ensure that our programs and partnerships best support a country's journey to self-reliance. A key part of this focus on self-reliance is the identification of a set of objective and transparent metrics that will allow USAID and its partners to track country progress toward self-reliance and inform development strategies and programs.

This methodology statement facilitates understanding of the self-reliance metrics framework. It provides the conceptual framework—USAID's theory of change—behind the self-reliance metrics, the indicator definitions, the data sources and the linkage between each metric and the overall conceptual framework. It also summarizes data techniques and analyses used, shedding light on the processes and decisions that led to this inaugural version of the framework.

## 2. Theory of Change

The central tenet of the self-reliance theory of change is that country commitment and capacity to plan, finance and manage the development journey are key, mutually reinforcing aspects that largely determine a country's self-reliance. As a country increases its capacity to manage its own development while maintaining, if not deepening, its commitment to do so, its level of self-reliance will likely also increase. Progress along the journey to self-reliance depends on a country's ability to govern itself effectively and accountably; design and implement transparent, responsible and effective policies; mobilize adequate resources effectively; deliver services efficiently and equitably; grow its economy inclusively; and adapt to changing circumstances. The journey is typically long and it is seldom linear, oftentimes in fact characterized by setbacks.

**Country commitment**, more specifically, is the degree to which a country's laws, policies, actions, behaviors, and informal governance mechanisms—such as cultures and norms—enable the country to create and strengthen the institutions in order to solve its own development challenges. This includes commitment toward democracy (or open and accountable governance), inclusive development (inclusiveness across gender, social groups and geographic sub-regions), and sound economic policy (micro-economic and macro-economic policy).



**Country capacity**, on the other hand, relates to how far a country has come in its journey across the dimensions of political, social and economic development, including the ability to work across these sectors. A country's capacity to plan, resource and manage its own development hinges on the capacity of the government (including the quality of government services and the competence of civil servants, government's ability to mobilize domestic resources, and to maintain stability and security), the capacity of civil society including free media (as a means to hold government accountable and to provide mechanisms beyond elections by which citizens can be heard), the capacity of a country's citizens (essentially, the extent to which citizens are engaged and informed, and leading productive and meaningful lives), and the productivity and functioning of the economy (including the extent to which the private sector is capable of generating sustained, broad-based economic growth).

The self-reliance theory of change and the various dimensions of country commitment and capacity align closely with USAID's core values and priorities.

# 3. Primary Self-Reliance Metrics

USAID has identified an initial set of seventeen primary self-reliance metrics; seven metrics are focused on three key aspects of country commitment and ten metrics on four key aspects of country capacity. These metrics were derived over the course of a nine-month iterative process, drawing on extensive consultations within USAID as well as with key external stakeholders, and substantial analyses and testing toward identifying the most targeted, accurate and comprehensive set of indicators available.

**FIGURE I.** Self-Reliance Metrics

 <b>COMMITMENT METRICS</b> CHOICES/BEHAVIORS	 <b>CAPACITY METRICS</b> ACHIEVEMENT/OUTCOMES
<ol style="list-style-type: none"> <li>1. <b>Open and Accountable Governance</b>                Liberal Democracy Index (V-Dem)                Open Government (WJP)</li> <li>2. <b>Inclusive Development</b>                Social Group Equality (V-Dem)                Economic Gender Gap (WEF)</li> <li>3. <b>Economic Policy</b>                Business Environment (Legatum)                Trade Freedom (Heritage)                Biodiversity and Habitat Protection (Yale/CIESIN)</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Capacity of the Government</b>                Government Effectiveness (WGI)                Efficiency of Tax Administration (IPD)                Safety and Security (Legatum)</li> <li>2. <b>Capacity of Civil Society</b>                Diagonal Accountability Index (V-Dem)</li> <li>3. <b>Capacity of Citizens</b>                Poverty Rate (World Bank)                Education Quality (World Bank)                Child Health (CIESIN)</li> <li>4. <b>Capacity of the Economy</b>                Per Capita GDP in PPP (World Bank)                ICT Use (WEF)                Export Concentration Index (UNCTAD)</li> </ol>

Key parameters and considerations were employed to facilitate the choice of indicators: 1) closely and directly aligned with the self-reliance concept being measured; 2) developed by independent, reliable third-party institutions; 3) publicly available and easily accessible; 4) comparable across countries and over time; and 5) having sufficient country coverage. Country Roadmaps are produced for all 136 low- and middle-income countries worldwide (as of July 2018), and are anticipated to be updated on an annual basis following each year’s release of updated World Bank income group classifications.

## 4. Secondary Self-Reliance Metrics and Analytics

No dataset is perfect and no single set of country-level metrics can capture each country's unique journey to self-reliance fully or perfectly. The primary metrics are very high level and necessarily broad in scope and limited in number. Furthermore, issues of interest, socioeconomic contexts, subnational variation, and data availability vary widely across and within regions and countries. While any USAID examination of self-reliance should use these primary metrics as entry points, such an exercise should also closely analyze other quantitative and qualitative information at a secondary, deeper level to ensure the full picture of a country's self-reliance comes into focus.

Given that need, USAID is developing secondary metrics and analytical guidance to help identify the types of quantitative and qualitative information needed in addition to the Roadmaps to bring a country's self-reliance story into full focus. This secondary analytical tool may include a wide range of sector-level metrics, resources for capturing region-specific and issue-specific trends, and/or guidelines for incorporating qualitative information into a country examination. Ultimately, these primary and secondary self-reliance metrics and analytics are meant to augment, and not replace, the wide range of country analyses the Agency already uses.



## 5. Country Commitment Metrics

The commitment dimension measures the degree to which a country’s laws, policies, actions, behaviors and informal governance mechanisms—such as cultures and norms—support progress toward self-reliance. The framework includes three aspects of country commitment measured using seven indicators. Commitment toward open and accountable governance comprises **Liberal Democracy** and **Open Government**. Commitment toward inclusive development includes **Social Group Equality** and **Economic Gender Gap**. Commitment toward sound economic policy consists of **Business Environment**, **Trade Freedom** and **Biodiversity and Habitat Protections**.

### Open and Accountable Governance

#### 1) Liberal Democracy

The *Liberal Democracy Index* measures freedoms of expression and association, the share of the population with suffrage, clean elections, judicial and legislative constraints on the executive branch, equality before the law, and various other individual rights and freedoms. According to Varieties of Democracy, “the liberal principle of democracy embodies the intrinsic value of protecting individual and minority rights against a potential tyranny of the majority and state repression. This principle is achieved through constitutionally protected civil liberties, strong rule of law and effective checks and balances that limit the use of executive power.”<sup>1</sup>

**Source.** [Varieties of Democracy \(V-Dem\) project](#), V-Dem Institute of the University of Gothenburg<sup>2</sup>

**Methodology.** The *Liberal Democracy Index* is one of V-Dem’s five high-level democracy indices measuring different “varieties,” or core principles, of democracy.<sup>3</sup> The other four high-level “varieties of democracy” indices center on electoral, participatory, deliberative and egalitarian democracy—each representing a different way of understanding and defining “rule by the people.” The *Liberal Democracy Index* comprises two primary elements:

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<sup>1</sup> Varieties of Democracy, Methodology Report, May 2017, p. 5.

<sup>2</sup> Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Agnes Cornell, Sirianne Dahlum, Haakon Gjerløw, Adam Glynn, Allen Hicken, Joshua Krusell, Anna Lührmann, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Moa Olin, Pamela Paxton, Daniel Pemstein, Josefine Pernes, Johannes von Römer, Brigitte Seim, Rachel Sigman, Jeffrey Staton, Natalia Stepanova, Aksel Sundström, Eitan Tzelgov, Yi-ting Wang, Tore Wig, Steven Wilson and Daniel Ziblatt. 2018. “[V-Dem \[Country-Year/Country-Date\] Dataset v8](#)” V-Dem Project; and Pemstein, Daniel, Kyle L. Marquardt, Eitan Tzelgov, Joshua Krusell and Farhad Miri. 2018. “The V-Dem Measurement Model: Latent Variable Analysis for Cross-National and Cross-Temporal Expert-Coded Data.” University of Gothenburg, V-Dem Institute: Working Paper No. 21, 3<sup>rd</sup> edition.

<sup>3</sup> *Liberal Democracy Index* raw data can be accessed by viewing code ‘v2x\_libdem’ in V-Dem dataset ‘Country-Year: V-Dem.’



1. The *Electoral Democracy Index* is formed by taking the average of, on one hand, the weighted average of five indices measuring freedom of association, clean elections, freedom of expression and alternative sources of information, elected officials, and suffrage, and, on the other, the five-way multiplicative interaction between those indices.<sup>4</sup> V-Dem uses the following aggregation formula to calculate Electoral Democracy Index scores, in order to capture each of these five variables' importance in their own right, as well as their influence on and contribution to “rule by the people” across the other four features:

$$\text{Electoral Democracy Index} = (0.1 * \text{elected executive}) + (0.1 * \text{clean elections}) + (0.1 * \text{freedom of expression}) + (0.1 * \text{freedom of association}) + (0.1 * \text{suffrage}) + (0.5 * \text{elected executive} * \text{clean elections} * \text{freedom of expression} * \text{freedom of association} * \text{suffrage})$$

2. The *Liberal Component Index* comprises three sub-indices focused on three key “components” inherent in liberal democracies: 1) equality before the law and individual rights, 2) judicial constraints on the executive branch, and 3) legislative constraints on the executive branch. These three indices, in turn, draw on twenty-three individual indicators summarized in the table below. V-Dem considers these three “components” to be substitutive and therefore take the simple average of the three elements to construct the *Liberal Component Index*. For each of the three “components,” V-Dem calculates scores by taking the point estimates from a Bayesian factor analysis model.<sup>5</sup>

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<sup>4</sup> Details on the *Electoral Democracy Index*'s components can be found on pgs. 371-372 of V-Dem's Codebook (Version 8, April 2018).

<sup>5</sup> V-Dem [Methodology Report](#) (Ver. 8, April 2018) provides elaboration on the Bayesian factor analysis model used to calculate scores, as well as V-Dem's general conceptual scheme, data collection methods, and measurement considerations.

**FIGURE 2.** Variety of Democracy Project's Liberal Component Index"

Component	Indicators <sup>6</sup>
Equality before the Law and Individual Liberty Index	Rigorous and impartial public administration Transparent laws with predictable enforcement Access to justice for men Access to justice for women Property rights for men Property rights for women Freedom from torture Freedom from political killings Freedom from forced labor for men Freedom from forced labor for women Freedom of religion Freedom of foreign movement Freedom of domestic movement for men Freedom of domestic movement for women
Judicial Constraints on the Executive Index	Executive respects constitution Compliance with judiciary Compliance with high court High court independence Lower court independence
Legislative Constraints on the Executive Index	Legislature questions officials in practice Executive oversight Legislature investigates in practice Legislature opposition parties

Indicators take the form of nominal (classifications, texts, dates), ordinal (e.g., Likert-style scales), or interval scales. Some refer to de jure aspects of a polity—rules that statute or constitutional law stipulate. Others refer to de facto aspects of a polity—the way things are in practice. Factual indicators are coded by members of the V-Dem team. Evaluative indicators are based on multiple ratings provided by approximately 3,000 country experts worldwide who respond to V-Dem’s questionnaire. V-Dem recruits experts based on their academic or other credentials as field experts in the area for which they code. Typically, a minimum of five independent experts respond to each question for each country and year.

**Linkage to Self-Reliance.** A country will not advance in a meaningful and sustained way toward self-reliance without progress toward liberal democracy. Liberal democracy promotes political inclusiveness and fairness, through the dispersion of political power, effective rule of law, and the protection of the individual. This, in turn, provides strong incentives for broad-based political and economic engagement

<sup>6</sup> Details on the 23 indicators used to calculate the *Liberal Component Index* are found in V-Dem’s [Codebook](#) (Ver. 8, April 2018).

among citizens, and both types of engagement are pre-requisites toward self-reliance progress. Democracy facilitates the development of institutions (laws and structures) that aggregate citizens' preferences and protect the minority from the tyranny of the majority, promoting inclusion. Politicians and government officials are ultimately “agents” of the people, with the judiciary as the arbitrator. Through such democratic institutions as fair elections, freedom of speech and an independent judiciary, citizens are able to effect change by pressuring politicians and government to act.

## 2) Open Government

This indicator measures the degree to which governments share information and empower people with tools to hold the government accountable, fostering citizen participation in public policy deliberations and mitigating corruption in the process. It measures the degree to which a government is committed to a robust and effective civil society and an informed and engaged citizenry. The World Justice Project (WJP), the indicator source, refers to open government as one of four universal principles that undergird the rule of law system, the other three principles being accountability, just laws, and accessible and impartial dispute resolution. In that context, open government is one where the processes by which the laws are enacted, administered and enforced are accessible, fair and efficient.

**Source.** [World Justice Project, Rule of Law Index](#)

**Methodology.** Four components or sub-factors go into the measurement of **Open Government**: 1) the extent to which basic laws and information in legal rights are publicized, and the quality of information publicized by the government; 2) whether requests for information held by a government agency are properly granted; 3) the effectiveness of civil participation mechanisms—including the protection of freedoms of opinion and expression, assembly and association, and the right to petition; and 4) whether people can bring specific complaints to the government.<sup>7</sup> This factor measures not only a government's openness and transparency, but also its responsiveness and accessibility to citizenry requesting such openness and transparency.

Scores draw from two data sources collected in 113 countries: 1) a general population poll (GPP) conducted by leading local polling companies using a representative sample of 1,000 respondents in the three largest cities, and 2) qualified respondents' questionnaires (QRQ) carried out annually, consisting of closed-ended questions completed by in-country practitioners and academics with expertise in civil and commercial law, criminal justice, labor law and public health.<sup>8</sup> The GPP Questionnaire is conducted bi-annually and includes 153 perception-based questions, 191 experience-based questions, and three polling methodologies: face-to-face, telephone and on-line.

WJP normalizes raw data onto a 0 to 1 scale, aggregates from the variable level to the sub-factor and factor level for each country, and then calculates overall scores and rankings using the data map and

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<sup>7</sup> See pg. 15 of WJP's [Rule of Law Index 2017-2018 report](#) for a more detailed breakdown of the measurement of these four sub-factors.

<sup>8</sup> See pgs. 167-192 of WJP's [Rule of Law Index 2017-2018 report](#) for country-level details on polling year, locations and methodology, as well QRQ contributors.

weights reported in WJP's *Rule of Law Index Methodology*. All underlying scores are normalized into sub-factors and factors using simple averages. Scores are validated and cross-checked against qualitative and quantitative third-party sources to identify possible errors or inconsistencies.

**Linkage to Self-Reliance.** A public informed regarding its government's workings, and one outfitted with the tools for citizens to hold their government accountable, is an essential ingredient of development progress toward self-reliance. Open government empowers its citizens, uses available resources responsibly and effectively, provides clear rules of the game to private sector actors and provides the political basis for broad-based participation and ultimately citizen "buy-in." Open government helps lay the foundation for an effective and representative government and a system of rules to keep a country's citizens safe, resolve disputes, encourage private enterprise and investment, and ultimately facilitate economic prosperity.

## Inclusive Development

### 1) Social Group Equality

This indicator measures the scope of equal protection in regards to civil liberties across social groups as defined by ethnicity, religion, caste, race, language and region. Civil liberties are understood to include access to justice, private property rights, freedom of movement and freedom from forced labor. Such political inclusion largely reflects the commitment on the part of government to provide equal protection to civil liberties for all of its citizens, and more broadly assesses a country's commitment to include and protect marginalized social groups.

**Source.** [Varieties of Democracy \(V-Dem\) project](#), V-Dem Institute of the University of Gothenburg

**Methodology.** Raters are asked to score subject countries on a 0-4 scale based on whether some social groups enjoy much fewer (0), substantially fewer (1), moderately fewer (2), slightly fewer (3), or the same level (4) of civil liberties as the general population. For this and all evaluative V-Dem indicators drawing on country experts responding to a questionnaire, V-Dem strives to solicit responses from a minimum of five country experts for each country each year. V-Dem converts this ordinal variable (i.e. 0-4 Likert scale) to an interval scale (i.e. continuous 0-1 score) by combining expert ratings per country using V-Dem's measurement model, which accounts for rater confidence, reliability and bias. The "Social Group Equality in Respect to Civil Liberties" indicator is a component of a broader measure of equality by V-Dem, namely, the *Egalitarian Democracy Index*, which includes measures of equal access to political power and equal distribution of resources (including educational and health equality), as well as equal protection in regards to civil liberties.<sup>9</sup>

**Linkage to Self-Reliance.** A country's ability to plan, finance and implement solutions to its own development challenges will not be realized, nor will limited gains be sustained, in the absence of broad-

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<sup>9</sup> *Social group equality in respect for civil liberties* raw data can be accessed by viewing code 'v2clsocgrp\_osp' in V-Dem dataset 'Country-Year: V-Dem Extended.'

based sharing of the gains and costs resulting from not only economic and social development, but also political advancement. Without equality in the political sphere, including equal civil liberties protections, broad-based economic gains are unlikely, and vice versa. Political empowerment supports economic development, and economic equality facilitates political inclusiveness. Inversely, political barriers to participate in society, to pursue and maintain personal wealth, and to challenge injustices all hinder marginalized populations' abilities to challenge socioeconomic inequities. These mutually reinforcing dynamics of a population's inclusive participation in society are at the center of the journey to self-reliance.

V-Dem's egalitarian principle, of which social group equality is a component, holds that material and immaterial inequalities inhibit the broad-based or decentralized exercise of political power, political rights and liberties.<sup>10</sup> Without political inclusion and voice, in the absence of commitment toward those ends on the part of a country's government, excluded social groups cannot hold their government to account, they cannot be productive members of society and they cannot freely and reasonably pursue private enterprise. The capacity of the government, citizens and the economy are all hindered in the absence of widespread political rights and liberties among the population.

## 2) Economic Gender Gap

This index assesses the economic disparities between women and men by measuring differences between male and female labor force participation rates, salary or wage remunerations, and career advancement.

**Source.** [World Economic Forum \(WEF\), \*Global Gender Gap Report\*](#)

**Methodology.** The index, formally known as WEF's *Economic Participation and Opportunity* sub-index within the *Global Gender Gap* report, draws on three sources: the International Labour Organization ILOSTAT database, WEF's *Executive Opinion Survey*, and the U.N. Development Program's *Human Development Report*. It contains three concepts and groupings of indicators provided below, with each indicator's weighting listed in parentheses:

1. Participation Gap
  - Difference between female and male labor force participation rates (19.9%)
2. Remuneration Gap
  - Ratio of estimated female-to-male earned income (22.1%)
  - Wage equality between women and men for similar work, based on qualitative data gathered through the WEF's annual Executive Opinion Survey (31.0%)
3. Advancement Gap

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<sup>10</sup> Varieties of Democracy, *Methodology Report*, May 2017, p. 6.

- Ratio of women to men among legislators, senior officials and managers (14.9%)
- Ratio of women to men among professional and technical workers (12.1%)

WEF establishes weightings by normalizing the indicators' standard deviations, ensuring that indicators with the largest variability do not exhibit more weight on the overall index scores.

**Linkage to Self-Reliance.** “Gender parity is fundamental to whether and how economies and societies thrive. Ensuring the full development and appropriate deployment of half of the world’s total talent pool has a vast bearing on the growth, competitiveness and future-readiness of economics and businesses worldwide.”<sup>11</sup> Advances toward gender parity in the economic sphere have a widespread impact on development, particularly in the poorest countries, not only because such advances increase the productivity and welfare of women but, in so doing, they often increase household investments in child health and education. Hence, a key positive externality in increasing the human capital of women is the realization of higher levels of human capital in the generation to follow.

## Economic Policy

### I) Business Environment

This indicator assesses a country’s entrepreneurial climate by measuring business access to infrastructure (such as the internet and transport, and to credit), business flexibility (the costs of starting a business and of hiring and firing), clear and fair regulations (e.g., intellectual property rights), and perceptions of meritocracy and opportunity.

**Source.** [Legatum Institute, \*The Legatum Prosperity Index\*](#)

**Methodology.** Twelve underlying indicators comprise the **Business Environment** pillar:

- Four indicators derived from the World Bank, *Doing Business Report* (Ease of Getting Credit, Ease of Getting Electricity, Ease of Resolving Insolvency and Ease of Starting a Business);
- Four indicators derived from World Economic Forum, *Global Competitiveness Report* (Affordability of Financial Services, Hiring and Firing Practices, Intellectual Property Protection and Redundancy Costs);
- Two indicators derived from *Gallup World Poll* (Perception of Starting New Businesses and Perception of Working Hard Getting One Ahead); and
- Two indicators derived from the World Bank, *World Development Indicators* (Logistics Performance Index and Fixed Broadband Subscriptions).

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<sup>11</sup> WEF, [Global Gender Gap Report 2017](#).

Each variable is assigned one of four weights (0.5, 1, 1.5 and 2), indicating the level of importance it has in affecting prosperity.<sup>12</sup> A variable with a weight of 2 is twice as important in affecting prosperity as a variable with a weight of 1 (the default). The weighting scheme is determined by three factors, prioritized as follows: 1) the relevance and significance of the variable with respect to the accumulation of material wealth and the enhancement of wellbeing, as informed by the academic literature; 2) expert opinions offered by the index's special advisers; and 3) the degree of compatibility with Legatum's "Prosperity Engine" conceptual framework.

**Linkage to Self-Reliance.** An enabling business environment is foundational to the growth of the private sector. It promotes and encourages innovation, risk-taking, and productivity growth at the firm level and provides opportunity and incentives at the individual level, both of which contribute to self-reliance at the country level. Through fair and transparent rules, it encourages competition and entrepreneurship, leading to greater productivity and economic growth. Through investments in transportation and financial infrastructure, markets become linked and transaction costs are reduced. A favorable business environment draws economic activity into the formal economy, enabling greater possibilities for enterprise growth (e.g., through greater access to credit) and expansion of the tax base, hence greater capacity for domestic resource mobilization for governments.

Legatum's *Business Environment* pillar is "based on research into how entrepreneurship drives innovation and generates economic growth, and into the positive effects that result from individuals realizing their entrepreneurial potential. When a country improves the likelihood that entrepreneurial initiative will pay off and individuals experience the satisfaction of entrepreneurial success, a society's prosperity increases overall."<sup>13</sup>

## 2) Trade Freedom

This indicator measures a country's openness to international trade based on average tariff rates and non-tariff barriers that affect imports and exports of goods and services.

**Source.** [Heritage Foundation, \*Index of Economic Freedom\*](#)

**Methodology.** The **Trade Freedom** indicator is a composite measure based on tariffs and non-tariff barriers (NTBs) to trade. The indicator scale ranges from 0 to 100, where 0 represents the highest level of protectionism and 100 represents the lowest level of protectionism. The weighted average tariff measure uses weights for each tariff based on the share of imports for each good. The tariffs score accounts for the base score for the *Trade Policy* indicator, and ranges from a minimum score of 0 and an upper bound set at 50 percent. An NTB penalty is then subtracted from the base score. Penalties vary from 0 (NTBs not used to limit international trade), to 5 (NTBs are uncommon, protecting few goods and services, and/or have very limited impact on international trade), 10 (NTBs are used to protect certain goods and services and impede some international trade), 15 (NTBs are widespread across many

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<sup>12</sup> See pg. 32 of Legatum Institute's [2017 Methodology Report](#) for more details on the 12 variables and their respective weightings.

<sup>13</sup> Legatum Institute, *The Legatum Prosperity Index 2017 Methodology Report*, 2018, pp. 8-9.



goods and services and/or act to impede a majority of potential international trade), and 20 (NTBs are used extensively across many goods and services and/or act to impede a significant amount of international trade).

NTBs are assessed using both qualitative and quantitative information. The categories of NTBs considered include quantitative restrictions (such as import quotas), price restrictions (anti-dumping and countervailing duties), regulatory restrictions (licensing, domestic content and mixing requirements), customs restrictions (advance deposit requirements and customs valuation procedures) and direct government intervention (subsidies, government industrial policies and government procurement policies).

Trade data are derived in order of priority from the following sources: World Bank, *World Development Indicators*; World Trade Organization, *Trade Policy Review*; Office of the U.S. Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers*; World Bank, *Doing Business*; U.S. Department of Commerce, *Country Commercial Guide*; Economist Intelligence Unit, *Country Commerce*; World Economic Forum, *The Global Enabling Trade Report*; and official government publications of each country.

**Linkage to Self-Reliance.** Trade openness generates greater economic growth by enabling greater economic specialization and diversification according to a country's comparative advantages vis-à-vis its trading partners. Such specialization and diversification can increase economic efficiency and productivity, creating jobs for citizens through export expansion, while benefiting consumers through lower cost imports. Increased, uninhibited trade can bolster and diversify the domestic resource base, better position the economy to weather endogenous and exogenous shocks, and strengthen the government's capacity to mobilize domestic resources by increasing tax revenues that result from an expanding economy. It sets in motion dynamic gains to the economy as a result of greater diversification of economic output, and greater competition and sophistication of the production process.

Furthermore, trade openness provides for critical external discipline on firm behavior and that of public officials, reducing opportunities and incentives for rent-seeking behavior and corruption. Wide variations in tariff schedules and intricate systems for quotas are breeding grounds for rent-seeking behaviors in setting and enforcing trade policies and customs regulations.

### 3) Biodiversity and Habitat Protections

This indicator measures government commitment to natural resource management by tracking the proportion of marine areas, terrestrial biomes and indigenous species habitat designated for protection status, as well as the extent to which a country's protected areas are ecologically representative and sufficient to prevent species habitat loss.

**Source.** [Yale Center for Environmental Law & Policy \(YCELP\) and Columbia University, Center for International Earth Science Information Network \(CIESIN\), \*Environmental Performance Index \(EPI\) Report\*](#)

**Methodology.** The **Biodiversity and Habitat Protections** indicator is an index comprised of six metrics, with each metric's weighting within the index provided in parentheses:

1. **Terrestrial Protected Areas** – weighted for national scarcity (20%): Percentage of the country’s biomes in terrestrial protected areas (TPAs), weighted by the prevalence of different biome types within that country.
2. **Terrestrial Protected Areas** – weighted for global scarcity (20%): Percentage of the country’s biomes in protected areas, weighted by the prevalence of different biome types globally.
3. **Marine Protected Areas** (20%): Percentage of a country’s exclusive economic zone designated as marine protected areas (MPAs).
4. **Species Protection Index** (20%): Proportion of the country’s species’ ranges under protection.
5. **Protected Area Representativeness Index** (10%): Extent to which terrestrial protected areas are ecologically representative.
6. **Species Habitat Index** (10%): Measures changes in the suitable habitats of species, relative to a baseline set in the year 2001.

These indicators and the benchmarks used to calculate them are highlighted in the Convention on Biological Diversity’s “Aichi Targets,” a set of internationally agreed upon goals for conservation and ecosystem management.<sup>14</sup>

The *2018 EPI* includes data for 180 countries. In the *2018 EPI* release, the *Species Protection Index* and *Species Habitat Index* recorded conditions in 2014, and the *Protected Area Representativeness Index* recorded conditions in 2016; the other three components recorded conditions in 2017. Both the *EPI* and the *Biodiversity and Habitat Protections* indicators are updated every two years.

**Linkage to Self-Reliance.** Country self-reliance depends on sustainable use of natural resources and a relatively equitable sharing of the benefits derived from ecosystem goods and services. Environmental protection is sound economic policy, and one that promotes inclusive economic growth. Natural resource capital (such as fertile soil, clean air and water, and renewable energy), as with physical, human and social capital, is a critical input into an economy’s “production function.”

The *EPI’s Biodiversity and Habitat Protections* indicator underscores the wide-reaching benefits derived from biodiversity and habitat protections, including economic and social benefits, and even national security gains. Biodiversity conservation contributes to meeting food, nutrition and human health needs. The communities most dependent on biodiversity and ecosystem services are more likely to be the rural poor, those who rely directly on ecosystem resources for their food security and livelihoods, and those who are less likely to have social protection mechanisms that help ensure resilience to environmental disturbances. Subsistence and small-scale livelihood activities, such as agriculture and fishing, are especially reliant on the natural capital of healthy ecosystems.

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<sup>14</sup> Secretariat of the Convention on Biological Diversity, 2014.

Healthy, diverse ecosystems maintain critical services, such as pollination and water and air filtration. Many medicines on which humans depend have been discovered by exploring diverse biomes. Biodiverse ecosystems may also help reduce the cost of financial damage to human systems from weather events, climate change and natural disasters.

The investments and technology needed to promote environmental protection also provide favorable economic spillovers toward a more dynamic economy. Finally, conservation and sustainable use of biological diversity facilitates better relations among countries and contributes to greater stability and security.

## 6. Country Capacity Metrics

The capacity dimension gauges how far each country has come in its journey across the dimensions of political, social and economic development, including the ability to work across these sectors. The framework includes four aspects of country capacity measured using ten metrics. **Government Effectiveness**, the **Efficiency of Tax Administration** and **Safety and Security** comprise government capacity. Civil society capacity is measured using an indicator of **Civil Society and Media Effectiveness**. Citizen capacity is gauged using the **Poverty Rate**, **Education Quality** and **Child Health**. The capacity of the economy is measured using **GDP Per Capita**, **Export Diversification** and **Information and Communication Technology Use**.

### Government Capacity

#### 1) Government Effectiveness

This indicator measures expert assessments and popular perceptions of the quality of public services, the competence of the civil service and its independence from political pressure, the quality of policy formulation and implementation (including the efficiency of revenue mobilization and budget management), and the credibility of the government's commitment to stated policies.

**Source.** [World Bank, Worldwide Governance Indicators](#)

**Methodology.** The **Government Effectiveness** index draws on nearly 50 indicators from 16 sources. Issue areas range from the quality of bureaucracy, public administration and fiscal management; to coverage of and satisfaction with education, health, water, telecommunications, power and transportation systems; to government policy and decision-making coherence, stability and responsiveness.<sup>15</sup> The World Bank uses a statistical methodology known as an unobserved components model to rescale and combine original data to calculate the aggregate index.

Sub-indicator data availability varies per country; some data sources (such as *Afrobarometer*, *Latinobarometer* and the *Country Policy and Institutional Assessments* from both the Asian Development Bank and the African Development Bank) provide regional coverage only. Main sources include Economist Intelligence Unit, *Riskwire* and *Democracy Index*; World Economic Forum, *Global Competitiveness Report*; World Bank, *Country Policy and Institutional Assessments*; the French Government, *Institutional Profiles Database*; Gallup, *World Poll*; Bertelsmann Foundation, *Bertelsmann Transformation*

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<sup>15</sup> See the “Description of Methodology” section on the World Bank’s [Worldwide Governance Indicators website](#) for a full list of individual indicators that comprise Government Effectiveness.

*Index*; International Fund for Agricultural Development, *Rural Sector Performance Assessments*; the World Bank, *Business Enterprise Environment Survey*; the Global Insight, *Business Conditions and Risk Indicators*; and Political Risk Service, *International Country Risk Guide*.

**Linkage to Self-Reliance.** The effectiveness, efficiency and integrity of government in the formulation and implementation of sound policy and in the provision of services provided by a meritocratic civil service are foundational to a country's progress toward self-reliance. An effective and credible government facilitates capacity building in other country domains, namely in the capacity of civil society, citizen capacity (and building human capital), and private sector capacity (in part through responsible administration of a business-friendly regulatory framework). Moreover, without adequate government capacity, government commitment to self-reliance will be ineffective, inadequately or inconsistently applied, and likely short-lived. Government capacity and government commitment are mutually reinforcing.

## 2) Efficiency of Tax Administration

This indicator measures the efficiency of a government's tax administration regarding the collection of corporate and household income taxes, including the uniformity and effectiveness of tax collection country-wide, as well as the government's ability to limit tax evasion. It is an indicator of a government's capacity to collect and mobilize domestic resources.

**Source.** [Institutional Profiles Database \(IPD\)](#), French Directorate-General of the Treasury and the Centre for Prospective Studies and International Information (CEPII), in collaboration with the University of Maastricht's Graduate School of Governance

**Methodology.** The *Efficiency of Tax Administration* indicator is comprised of tax collection efficiency in relation to:

1. Corporate taxes;
2. Household income taxes;
3. Effectiveness across the national geographical territory; and
4. Government's ability to limit tax evasion.

The IPD project measures countries' institutional characteristics based on perception data gathered through a survey completed by country and regional Economic Services of the French Ministry for the Economy and Finance (MEF) and Agence Française de Développement (AFD) country offices. For each of the four components of the Efficiency of Tax Administration indicator, respondents choose from five options, ranging from 0 (very low efficiency or capacity) to 4 (high efficiency or capacity). After aggregation, scores range from 0 to 4 with 0.25 intervals. Questionnaire respondents draw on their own knowledge and local expertise. IPD piloted the questionnaire on experienced respondents from the Economic Services network, University of Maastricht scholars and AFD economists. In order to ensure better comparability between indicators over time, facilitate interpretation of results and retain

maximum transparency, the four components upon which the *Efficiency of Tax Administration* indicator is based are aggregated using a non-weighted arithmetic mean.

**Linkage to Self-Reliance.** Increasing the efficiency of tax administration increases government revenue, and with it, government's capacity to finance and implement solutions to solve its own development challenges. Increasing a government's capacity to effectively generate and mobilize resources is a core part of the journey to self-reliance. A country can have a wealthy and productive economy, engaged and productive citizens and a government committed to sensible market-friendly policies, and yet without government capacity to adequately mobilize and use domestic resources to protect existing capacities and invest in future economic and social needs, meaningful and sustainable progress toward self-reliance will not be realized.

### 3) Safety and Security

Legatum's *Safety & Security* pillar measures countries' performance in three areas: national security, personal precariousness and personal safety. This pillar combines measures of national security (e.g. extent of political violence and repression) with measures of personal safety and security (e.g. household security with respect to crime and household economic security with respect to adequacy of food and shelter).

**Source.** [Legatum Institute, Legatum Prosperity Index](#)

**Methodology.** A mixture of 11 objective measures of security and subjective measures of personal safety comprise Legatum's *Safety & Security* pillar:

- Four survey questions from *Gallup World Poll* (Availability of Adequate Food, Availability of Adequate Shelter, Property Stolen and Safe Walking Alone at Night).
- Intentional homicides per 100,000 population (World Bank, *World Development Indicators*)
- Political terror scale (Amnesty International and the U.S. Department of State)
- Refugees by origin per million population (U.N. High Commissioner for Refugees)
- Traffic accident deaths (U.N. World Health Organization)
- Terrorist attack casualties per million population, average of latest five years (Study of Terrorism and Responses to Terrorism, Global Terrorism Database)
- Civil and ethnic war casualties (Center for Systemic Peace)
- Battlefield deaths per million population (Uppsala Conflict Data Program)

Each variable is assigned one of four weights (0.5, 1, 1.5, and 2), indicating the level of importance it has in affecting prosperity.<sup>16</sup> A variable with a weight of “2” is twice as important in affecting prosperity as a variable with a weight of “1” (the default). The weighting scheme is determined by three factors, prioritized as follows: 1) the relevance and significance of the variable with respect to the accumulation of material wealth and the enhancement of wellbeing, as informed by the academic literature; 2) expert opinions offered by the Index’s special advisers; and 3) the degree of compatibility with Legatum’s “Prosperity Engine” conceptual framework. Legatum log-normalizes five of the eleven indicators underlying Safety & Security where data distribution is skewed by outliers: terrorist attack casualties, battlefield deaths, intentional homicides, traffic accident deaths and refugees by origin.

**Linkage to Self-Reliance.** A capable government must possess a monopoly on violence, enforced through security and judicial systems that protect citizens. Academic research shows that crime and organized political violence, such as coups or civil war, hinder economic growth. Vicious conflict cycles exacerbate poverty, slow economic growth, destabilize weak institutions, and lead to violent relapse. Conflict erodes the social capital of trust and cooperation upon which strong political and economic systems depend. Exposure to violence also hurts those who participate in armed groups, as they often have to overcome an educational deficit, social stigma, and psychological distress that can leave them economically and socially marginalized.

A safe and secure environment is a prerequisite to a well-functioning economy and democracy and the meaningful participation of the citizenry therein. In the absence of such an environment (and a government able to maintain such an environment), economic and social wellbeing are jeopardized. Without national security and a stable social environment, productive investments in the economy and in its citizens (and human capital) will fail or not even occur. When citizens worry about their personal safety or when their access to food or shelter is precarious, they are not able to dedicate their attention and resources to bettering their household’s socioeconomic status. Many people emigrate or flee as a matter of necessity. In the midst of instability, local stakeholders cannot coalesce around long-term economic and social development plans, as all dimensions of country capacity will tend to erode. At best, development (and the journey toward self-reliance) will be put on hold.

## Civil Society Capacity

### 1) Civil Society and Media Effectiveness

This composite index measures the range of actions and mechanisms that civil society organizations (CSOs) and independent media use to hold government accountable. It includes the extent to which citizens are engaged in public and policy deliberations and the extent to which they participate in CSOs. It includes the extent to which print and broadcast media cover politics impartially, hold a range of perspectives and are able and willing to provide a dissenting voice to government. It also measures the

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<sup>16</sup> See pg. 38 of Legatum Institute’s [2017 Methodology Report](#) for more details on the 11 variables and their respective weightings.



extent to which the government attempts to censor media, harass journalists, oppress CSOs and ration or otherwise control internet access. It also gauges freedom of discussion and expression, namely the extent to which men and women are free to openly discuss political issues in private homes and public spaces.

**Source.** [Varieties of Democracy \(V-Dem\) project](#), V-Dem Institute of the University of Gothenburg

**Methodology.** The *Civil Society and Media Effectiveness* index, formally referred to by V-Dem as *Diagonal Accountability Index*, comprises 14 indicators organized around four primary “nodes”:

1. Seven indicators focused on media freedom and capacity (Media Bias, Print/Broadcast Media Critical, Print/Broadcast Media Perspectives, Government Censorship Effort-Media, Harassment of Journalists, Media Self-Censorship and Internet Censorship);
2. Three indicators tracking CSOs’ abilities to operate freely and/or the extent to which citizens are engaged in public deliberations (CSO Entry and Exit, CSO Repression and CSO Participatory Environment);
3. Three indicators pertaining to freedom of discussion and expression (Freedom of Discussion for Men, Freedom of Discussion for Women and Freedom of Academic and Cultural Expression); and
4. One indicator centering on engaged society, specifically the breadth and depth of public deliberations when important policy changes are under consideration.

The *Diagonal Accountability Index* is one of three V-Dem indices gauging the accountability of or constraints on the government’s use of political power.<sup>17</sup> *Vertical Accountability* refers to the ability of citizens to hold government accountable through elections and political parties. *Horizontal Accountability* focuses on the capacity of government institutions to hold each other accountable, most notably the legislatures and the judiciary in overseeing the executive branch of government. *Diagonal Accountability*, or the oversight and capacity of civil society organizations and media, contributes to constraining government’s political power both directly and indirectly, the latter by providing a forum and a medium for *Vertical* and *Horizontal Accountability* to be more effective.<sup>18</sup>

Indicators take the form of nominal (classifications, texts, dates), ordinal (e.g., Likert-style scales), or interval scales. Some refer to de jure aspects of a polity—rules that statute or constitutional law stipulate. Others refer to de facto aspects of a polity—the way things are in practice. Factual indicators are coded by members of the V-Dem team. Evaluative indicators are based on multiple ratings provided by approximately 3,000 country experts worldwide who respond to V-Dem’s questionnaire.<sup>19</sup> V-Dem

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<sup>17</sup> *Diagonal Accountability Index* raw data can be accessed by viewing code ‘v2x\_diagacc\_osp’ in V-Dem dataset ‘Country-Year: V-Dem Extended’.

<sup>18</sup> For elaboration on the Diagonal Accountability Index, including sub-indicator details and aggregation techniques used, see Anna Luhrmann, Kyle Marquardt and Valeriya Mechkova, [Constraining Governments: New Indices of Vertical, Horizontal and Diagonal Accountability](#). V-Dem Institute. Working Paper Series 2017:46 (April 2017).

<sup>19</sup> V-Dem’s [Methodology Report](#) (Version 8, April 2017) provides elaboration of its general conceptual scheme, data collection methods and measurement considerations.

recruits experts based on their academic or other credentials as field experts in the area for which they code. Typically, a minimum of five independent experts respond to each question for each country and year.

**Linkage to Self-Reliance.** A strong civil society, engaged citizens and a capable free media are key to good governance. As noted by Luhrmann et al., diagonal accountability mechanisms, by empowering citizens and actively involving them in the monitoring of government performance, enhance government transparency and exert sanction power via “naming and shaming,” thus potentially serving as powerful tools to ensure that government agencies serve the interest of the people.<sup>20</sup> In fact, empirical analysis conducted by Luhrmann et al., show that vertical, horizontal and diagonal accountability are all strongly correlated with better development outcomes, and in particular higher life expectancy, literacy and school enrollment rates, and lower mortality of children under the age of five. Enhanced capacity and effectiveness of civil society and free media go hand-in-hand with greater country capacity in other areas, including human capital, government capacity and economic capacity.

## Citizen Capacity

### 1) Poverty Rate (\$5.00/Day)

This indicator measures the percentage of a country’s population living on less than \$5.00 a day, standardized across countries using purchasing power parity (PPP) exchange rates.

**Source.** [World Bank, PovcalNet](#)

**Methodology.** The World Bank measures absolute poverty rates at different thresholds, ranging from less than \$1.25 a day to less than \$5.50 per day. USAID’s self-reliance metrics framework uses a relatively expansive, ambitious poverty line (\$5.00 per day, in purchasing power parity terms) because country self-reliance will not be realized if household poverty, even relatively mild poverty, remains widespread, or in other words, if development gains are not broad-based. This higher threshold is relevant across the full range of developing countries, from low-income to upper middle-income countries. This poverty rate indicator is a broad gauge of the spread of shared prosperity across populations and household resilience to withstand livelihood shocks and engage meaningfully and productively in society.

To compare poverty rates across countries, PPP exchange rates are used because they more accurately reflect the difference in the prices of goods and services, both traded and non-traded, across countries than do market exchange rates, the latter reflecting only purchasing power over internationally traded goods. The most recent World Bank estimates combine PPP exchange rates for household consumption from the 2011 International Comparison Program with data from more than 1,500 household surveys in

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<sup>20</sup> *Constraining Governments*, April 2017, p. 24

164 countries. More than 2 million randomly sampled households were interviewed for the 2013 estimates, representing 85 percent of the world population.

Poverty scores presented in the USAID Country Roadmaps are inverted, so that higher poverty rates lead to lower, less favorable Roadmap scores closer to 0.0 and lower poverty rates lead to higher, more favorable scores closer to 1.0. Poverty scores draw on World Bank PovcalNet poverty estimates for 2016 or the latest year available from 2008 onward. Approximately one-fifth of low- and middle-income countries do not have poverty data for the entire period. Poverty estimates are based on either income-based or expenditure-based welfare measurements.

**Linkage to Self-Reliance.** At the public institutional level, widespread poverty drains limited resources and the capacity for public goods provision. At the household level, impoverished individuals are locked into subsistence activities and do not have the ability to invest in or plan for bettering their long-term economic outlook through educational attainment or otherwise. While mitigating poverty is an important goal in itself, lower poverty rates also lead to more productive citizens in the economy and more engaged citizens in the political sphere.

## 2) Education Quality

This indicator measures the percentage of students attaining a minimum proficiency in reading toward the end of primary school, providing a comparative evaluation of the relative performance of educational systems across countries.

**Source.** [“Global data set on education quality \(1965-2015\).” Altinok, N., N. Angrist and H.A. Patrinos. 2018. World Bank Policy Research Working Paper No. 8314. Washington, DC](#)

**Methodology.** The minimum reading proficiency estimates are derived from several International Student Achievement Tests (ISATs) and Regional Standardized Achievement Tests (RSATs) that are standardized and combined to allow for cross-country and trend analysis. The three primary ISATs are PISA (Program for International Student Assessment), TIMSS (Trends in International Mathematics and Science Study) and PIRLS (Progress in International Reading Literacy Study). The three primary RSATs are SACMEQ (the Southern and Eastern Africa Consortium for Monitoring Educational Quality), PASEC (the Program of Analysis of Education Systems focused on French-speaking countries in sub-Saharan Africa) and LLECE (the Latin American Laboratory for Assessment of the Quality of Education).

International and regional tests are not directly comparable in the absence of a standardization technique and process. Test results do overlap, however, in terms of country coverage, subject matter coverage and years included. Consequentially, researchers are able to “anchor” one series of results to

another by comparing common results (for the same country, year and subject matter) and then aligning results to allow for comparability across tests.<sup>21</sup>

**Linkage to Self-Reliance.** Advancing the quality of the educational system increases self-reliance at the household and country levels. Better education is linked to economic and social gains at the household level, including more employment and better employment, lower fertility rates and better health including lower child mortality rates. Household gains at the micro level translate to systemic gains at the macro economy-wide level, including enhanced labor productivity and competitiveness, greater participation and engagement among citizens in the political system, and stronger economic growth. Education enables all other aspects of self-reliance.

### 3) Child Health

This index measures three basic, major health challenges in the developing world: under-5 child mortality rates and two conditions that disproportionately affect children, namely access to improved sanitation facilities and access to improved water sources. The *Child Health* index is a proxy for the capacity of a country's healthcare system to adequately address health challenges and improve health outcomes among its population.

**Source.** [Center for International Earth Science Information Network \(CIESIN\), Columbia University. Natural Resource Protection and Child Health Indicators, 2016 Release.](#) Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC).

**Methodology.** The *Child Health* indicator is calculated as the average of three, equally weighted indicators:

1. **Under Five Mortality Rate**, which is the probability expressed as a rate per 1,000 live births of children dying before the age of five;
2. **Access to Improved Water Sources**, which measures the percentage of the population with access to at least 20 liters of water per person per day from an improved source (household connections, public taps or standpipes, boreholes or tube wells, protected dug wells, protected springs and rainwater collection) within 1 kilometer of the user's dwelling; and
3. **Access to Improved Sanitation Facilities**, which measures the percentage of the population with access to facilities that hygienically separate human excreta from human, animal, and insect contact. Facilities such as flush/pour-flush to a piped system, septic tank or pit latrine; ventilated improved pit latrines; pit latrines with slabs; and composting toilets are considered improved sources, provided that they are not shared by two or more households.

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<sup>21</sup> For elaboration of the World Bank's education quality database, methodology and analysis, see Nadir Altinok, Noam Angrist and Harry Anthony Patrinos, *Global Data Set on Education Quality*, Policy Research Working Paper 8314, World Bank, Education Global Practice Group (January 2018).

Original data sources include the Population Division of the U.N. Department of Economic and Social Affairs (for child mortality rates) and the U.N. World Health Organization/U.N. Children’s Fund Joint Monitoring Program (JMP) for Water Supply and Sanitation.

**Linkage to Self-Reliance.** Health is a direct source of human welfare and productivity, and thus a prerequisite for sustained well-being. Citizen capacity and workforce productivity depend on a viable, supportive and equitable health care system. Healthy workers lose less time from work and are more productive when working. Good health also allows people to participate fully in their families, communities and political life. A dysfunctional and/or unevenly distributed health care system, which would be reflected in part in high child mortality rates and poor access to water and sanitation, impedes human capital development and participation in society, which in turn impedes overall development and self-reliance.

Similarly, improving child health leads to a more productive workforce, setting in motion a host of positive dynamics immediately and in the future. Improved child health and nutritional status positively affect physical and cognitive development, enhance the ability of children to attend school and learn while there and ultimately increase the likelihood of economic success as an adult. Better health outcomes increase household productivity and economic well-being in the immediate term, while more positive health outlooks improve households’ ability and incentives to save and invest, helping create the basis for greater productivity for the next generation workforce. Improving access to water and sanitation typically benefits the most vulnerable, marginalized groups (i.e. children, women, the disabled and the poorest households in the economy). Hence, improvement in this composite **Child Health** indicator also signals advances in inclusive development.

## Capacity of the Economy

### 1) GDP Per Capita (PPP)

This indicator measures the gross value added by all resident producers in an economy divided by the country’s population. It is a measure of the flow of resources available to households, firms and the government to finance development.

**Source.** [World Bank, International Comparison Program database](#)

**Methodology.** Gross Domestic Product (GDP) per capita is the sum of gross value added by all resident (i.e., domestic) producers in the economy, plus any product taxes, minus any subsidies not included in the value of the products, divided by population. It is calculated without deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars based on the 2011 International Comparison Program (ICP) round; i.e., made comparable across countries by converting GDP to international dollars using purchasing power parity (PPP) exchange rates.

**Linkage to Self-Reliance.** GDP per capita is a standard measure of an economy’s wealth and of the capacity of households and firms to finance a country’s journey to self-reliance. Moreover, higher GDP per capita corresponds to stronger government capacity (partly as a result of greater availability of domestic resources, such as domestic investment and tax revenues), of greater citizen capacity (with higher household incomes) and of greater capacity on the part of civil society (as more funding likely becomes available to CSOs).

## 2) Export Diversification

This indicator gauges the extent to which an economy’s export sector is reliant on a limited (or diverse) number of product groupings. Perfect diversification is achieved when all product groups are equally represented in an export sector; an export sector is fully concentrated when the economy exports only one single group of products. The indicator treats all product groupings evenly and does not take into account product sophistication or value-added. The diversification of a country’s export products is a key marker that can help gauge the sophistication of the export sector in many circumstances, as well as their resilience to external and domestic economic shocks.

**Source.** [United Nations Conference on Trade and Development \(UNCTAD\) STAT](#)

**Methodology.** The *Export Diversification* indicator is formally referred to as the *Export Product Concentration Index* and/or the *Herfindahl-Hirshmann Product Concentration Index* (named after the creators of the measure, economists Albert Hirshmann and Orris Herfindahl). Raw scores range in value from 0 to 1, with a higher value indicating that exports are concentrated in fewer product types, whereas a country with a completely diversified, perfectly balanced export product portfolio will have an index close to 0. The index is calculated as the sum of squared shares of each product in total exports.<sup>22</sup> UNCTAD derives the product groupings and subsequent estimates according to the Standard International Trade Classification (SITC), Revision 3, at the 3-digit level.<sup>23</sup>

Raw *Export Product Concentration Index* data are inverted for presentation in USAID’s Country Roadmaps, so that lower export diversity is depicted as lower, less favorable Roadmap scores (closer to 0.0) and higher export diversity is depicted as higher, more favorable Roadmap scores (closer to 1.0).

**Linkage to Self-Reliance.** Export product diversification is an indicator of an economy’s overall production sophistication; the more the diversification, generally the more sophisticated and hence advanced the economy. Export diversification also provides some protection and resilience to external and domestic economic shocks. Economies that depend on few export products, particularly primary products, are more vulnerable, for example, to price changes in those products and/or fluctuations in demand. These fluctuations have adverse consequences on economic growth. Moreover, countries with energy export-dependent economies tend to have less political pressures for accountability and democracy to the extent that energy revenues and resources mitigate the need for taxing citizens. As

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<sup>22</sup> See UNCTAD’s [Handbook of Statistics](#) for more information on this and other UNCTAD trade data.

<sup>23</sup> See full product list used by UNCTAD STAT at [http://unctadstat.unctad.org/EN/Classifications/DimSicRev3Products\\_Official\\_Hierarchy.pdf](http://unctadstat.unctad.org/EN/Classifications/DimSicRev3Products_Official_Hierarchy.pdf).

documented in the European Bank for Reconstruction and *Development (EBRD), Transition Report (2013)*, the relationship between economic development and democracy is considerably weaker in countries that rely heavily on the extraction of natural resources. Hence, export product diversification is both an indication of an economy's capacity and level of development, as well as an important characteristic in an economy that facilitates economic growth, helps shield against economic downturns and even contributes to a country's commitment to democracy.

### 3) Information and Communication Technology (ICT) Use

This index measures a population's access to and usage of various widespread forms of ICT, including fixed and mobile broadband internet subscriptions, internet bandwidth (or data usage) and fixed and mobile telephone subscriptions.

**Source.** [World Economic Forum \(WEF\), \*Global Competitiveness Report\*](#)

**Methodology.** The *ICT Use* composite index is comprised of six indicators:

1. Internet users as a percentage of the population
2. Fixed-broadband internet subscriptions per 100 people
3. Internet bandwidth, kilobits per second per user
4. Mobile broadband subscriptions per 100 people
5. Mobile telephone subscriptions per 100 people (half-weighted)
6. Fixed telephone lines per 100 people (half-weighted)

WEF draws on the mobile telephone subscription and fixed telephone line indicators in the calculation of both the **Technological Readiness** and **Infrastructure** pillars of its global competitiveness framework; as a result, WEF half-weights the two indicators within each pillar. Raw data are originally derived from the WEF, *Global Information Technology Report*, and the International Telecommunication Union, *World Telecommunication/ICT Development Report*.

**Linkage to Self-Reliance.** ICTs are essential components in an economy's infrastructure, and essential elements of maintaining and building economic capacity. An advanced and widely used ICT infrastructure provides an essential enabling environment from which to innovate and compete domestically and internationally. ICTs facilitate commerce in part by making electronic commerce possible. Such technologies increase the government's capacity by increasing government effectiveness, efficiency and transparency with the advent and growth of e-government services, such as electronic tax filing and online healthcare services. Widely available and affordable ICTs also create learning, training and advocacy opportunities, enhancing human capital and citizen capacity. ICTs are powerful tools that enable civil society to advocate, network and mobilize in support of issues of common concern more widely and effectively. Widespread ICT also affords marginalized populations access to new information and resources that can foster their economic and social development. Mobile communications have a



particularly important impact in rural areas and in less developed areas, and have become key inclusive development tools.

## 7. Data Techniques and Analysis

USAID’s country roadmaps use a min-max scaling technique to normalize all data onto a common 0.0 to 1.0 scale to facilitate visualization, comparison across metrics, and calculation of the Commitment and Capacity indices. A country scoring 0.0 on a given metric indicates that the country recorded the poorest possible outcome globally in the raw dataset, and a country scoring a 1.0 indicates that the country recorded the best possible outcome globally in the raw dataset. All other countries receive scores within the 0.0-1.0 range based on where they fall between the worst and best outcomes globally, preserving the source organization’s data distribution. While USAID Roadmaps are only produced for low- and middle-income countries, all countries globally, including high-income countries, are used to establish the range of possible outcomes for each metric. The period of performance used to determine the range of possible outcomes is 2010 to the latest data available on June 28, 2018 (see Temporal Coverage section below).

When converting each set of raw data, USAID aligns, or “flips,” the directionality of scores across the 17 metrics so that a score of 1.0 always represents the most favorable position for self-reliance and a score of 0.0 always represents the least favorable position, given that higher raw numbers are more advantageous for some metrics (GDP per capita) while lower raw numbers are more advantageous for others (poverty rate). This occurs specifically for Export Diversification and Poverty Rate.

Two further adjustments are made to this standard min-max scaling technique, including logging GDP Per Capita (ln) to accommodate a large variation across countries worldwide and removing several extreme outliers from the Trade Freedom scaling. Any country with a raw score under 40 in Trade Freedom for any year is given a score of 40 for this indicator and subsequently a 0.0 in this framework’s normalized 0.0-1.0 scale. For the Country Roadmap’s period of analysis and country sample, North Korea is the only country scoring below that threshold and receiving a 0.0.

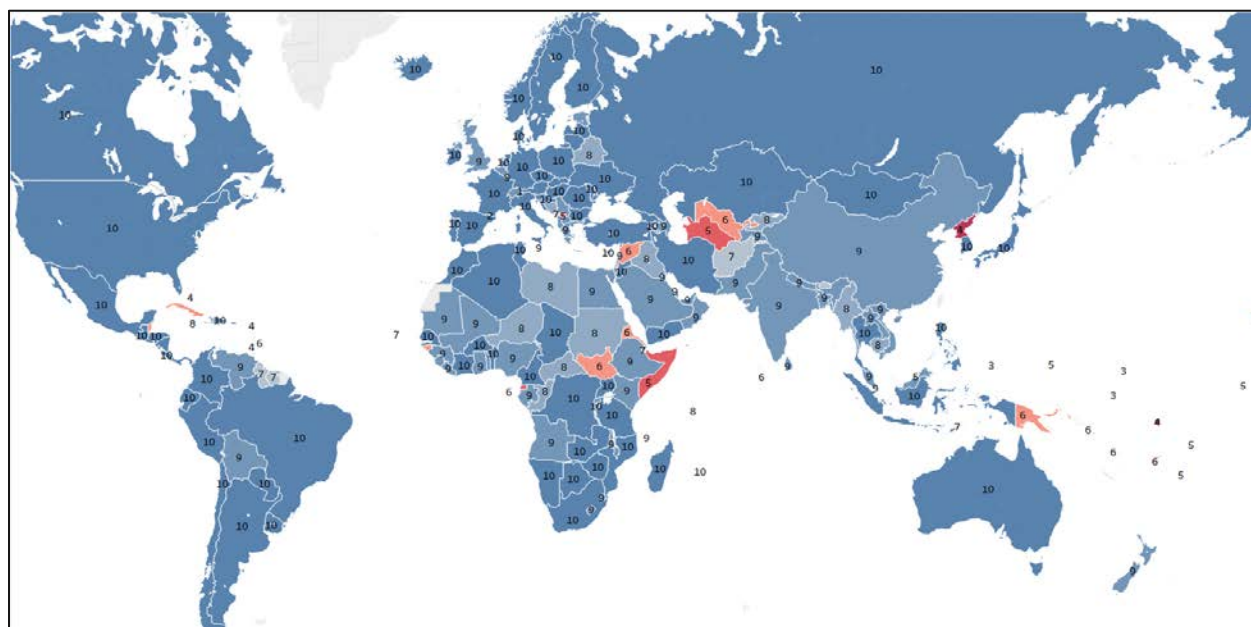
The formula for min- max scaling is below:

$$X_{\text{norm}} = \frac{X - X_{\text{min}}}{X_{\text{max}} - X_{\text{min}}}$$

## Country Coverage

For each of the 17 primary self-reliance metrics, Country Roadmaps provide individual countries' scores and overall average scores for all low- and middle-income countries worldwide, based on World Bank income group classifications (July 2018) and country designations provided in the U.S. Department of State's *Independent States in the World* list (May 2018).<sup>24</sup> Based on underlying data availability and aggregation parameters (see details below), overall commitment and capacity scores are available for 118 of the 136 low- and middle-income countries worldwide. The normalization process takes into account the minimum and maximum scores for all countries globally, regardless of income group classification. The heat maps in Figures 3 and 4 depict the number of capacity and commitment metrics available for each country globally.

**FIGURE 3.** The Number of Capacity Metrics Available by Country



<sup>24</sup>For further details, see the World Bank's [income group classifications](#) and the U.S. Department of State's [Independent States in the World](#) list.



## Temporal Coverage

Figure 5 provides source information and year(s) of measurement depicted in most cases for each USAID Roadmap metrics.

**FIGURE 5.** Temporal Coverage of the Roadmap Metrics

USAID Roadmap Metric	Source Indicator Name	Report/Index/Database Name	Year(s) of Measurement
Biodiversity & Habitat Protections	Biodiversity & Habitat Protections	2018 Environmental Performance Index	Varies by Component (2014-2017)
Business Environment	Business Environment	Legatum Prosperity Index 2017	2017
Child Health	Child Health	Natural Resource Protection and Child Health Indicators, 2016 Release	2016
Civil Society & Media Effectiveness	Diagonal Accountability Index	V-Dem Dataset Version 8	2017
Economic Gender Gap	Economic Participation and Opportunity Sub-Index	WEF Global Gender Gap Report 2017	2016
Education Quality	% of Students Achieving Minimum Reading Proficiency toward the End of Primary Education	Global data set on education quality (1965-2015)	Varies by Country (2005-2015)
Efficiency of Tax Administration	Efficiency of Tax Administration	2016 Institutional Profiles Database	2016
Export Diversification	Export Concentration Index	Online Database (Accessed Apr '18)	2016
GDP Per Capita (PPP)	GDP Per Capita (PPP)	Online Database (Accessed July '18)	2017
Government Effectiveness	Government Effectiveness	Online Database (Accessed Nov '17)	2016
Information & Communications Technology (ICT) Use	ICT Use	WEF, The Global Competitiveness Index database 2007-2017	2017
Liberal Democracy	Liberal Democracy Index	V-Dem Dataset Version 8	2017
Open Government	Open Government Factor	WJP Rule of Law Index 2017-2018	2017
Poverty Rate (\$5/Day)	Poverty Headcount Ratio (\$5/Day, PPP)	Online Database (Accessed May '18)	Varies by Country (2008-2016)
Safety & Security	Safety & Security	Legatum Prosperity Index 2017	2017
Social Group Equality	Social Group Equality in Respect to Civil Liberties	V-Dem Dataset Version 8	2017
Trade Freedom	Trade Freedom	2018 Index of Economic Freedom	2017

## Imputation

To reduce changes in country scores caused by data gaps, individual country-metric data gaps are filled by “carrying forward” indicator observations over the 2006-2017 period from their most recent observation in the period through to 2017.<sup>25</sup> Figure 6 provides an illustrative example of the “carrying forward” approach between the original dataset (at left) and the imputed dataset (at right), with imputations marked in blue and in bold.

**FIGURE 6.** Illustrative Example of the Carry-Forward Approach

	Original Raw Data					Imputed Roadmap Dataset				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
<b>Child Health</b>	0.39	0.4	0.41	0.42		0.39	0.4	0.41	0.42	<b>0.42</b>
<b>Poverty Rate</b>		0.21					0.21	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>
<b>Export Diversification</b>	0.62	0.62	0.65	0.66		0.62	0.62	0.65	0.66	<b>0.66</b>
<b>ICT Use</b>	0.46	0.53	0.5	0.5	0.53	0.46	0.53	0.5	0.5	0.53

## Aggregation

Overall “Commitment” and “Capacity” composite scores are calculated using the arithmetic mean of all available scaled components for each country. The Commitment Index comprises seven underlying metrics, each receiving an equal weight (i.e. one-seventh weighting, if all sub-components are present after imputation). The Capacity Index comprises ten underlying metrics, each receiving an equal weighting of one-tenth in aggregation, if all sub-components are present after imputation. If dimension components (i.e. individual metrics) of either index are missing after imputation, Commitment and Capacity scores are still generated using an arithmetic mean of all available components, but only when at least six of ten Capacity metrics are present and four of seven Commitment metrics are present

<sup>25</sup> Per Figure 5, the Education Quality and Poverty Rate metrics are the exceptions in this regard, pulling forward from 2005-2015 and 2008-2016, respectively.

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