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EXECUTIVE SUMMARY

- **Long-term forecasting** that takes a holistic multi-sector approach to policymaking **is necessary** in order to implement the 2030 Agenda.
- This work package demonstrates that such **long-term forecasting is feasible and sound**; the tools reviewed provide convergent, robust, and internally consistent projections to 2030.
- Many **SDG targets will not be achieved if the current situation continues**; poverty rates in particular are projected to remain high, despite a reduction in extreme poverty.
- On the other hand, several policy scenarios (described in Annex 1) that are **alternatives to the current path produce very positive results**.
- **Some of these narrow policy scenarios have wide-ranging effects** on economic and human development, far beyond the narrow sectoral policies they focus on (women's empowerment, governance, and social justice): **they act catalytically as integrators**.
- In broad terms, by 2030, the **"Women Empowerment" scenario performs best** on most indicators. The **"Social Justice" scenario** (quality of education, health, social protection) has the **greatest impact on human development**. The **"Governance" scenario** (security, effectiveness, transparency) **leads to the best outcome by 2050**. But the **"Integrated Push" scenario**, which combines many of the policies of the other scenarios, far outperforms every individual scenario.
- These **integrated policies deliver significantly better on many SDGs**; however, more scenarios and more refined analysis are needed to be able to outline the most effective and cost-efficient policy mix.
- Forecasts of 2050 are NOT a mere continuation of 2030 trends; **2050 allows for longer-term dynamics** to manifest themselves, especially demographics and far-reaching improvements in governance.
- In all scenarios analysed, some SDG targets (nutrition, wastewater collection) consistently lag behind compared to general improvements in all other sectors, and may require dedicated sector-specific policies.
- Similarly, in all scenarios except one, **carbon emissions are set to increase**, and in all scenarios, **water requirements remain very high** and may require dedicated sector-specific policies.
- Definite **targets need to be set** for several SDG indicators (e.g. 11.6.2, 12.3, 16.1.1.b) to be able to measure the performance of proposed policies for these important SDGs (sustainable cities and communities; responsible consumption and production; and peace, justice and strong institutions).

BACKGROUND AND CONTEXT

The 2030 Agenda for Sustainable Development extends beyond the horizon of typical short-to-medium term forecasting. An evaluation of the policy options needed to achieve the Sustainable Development Goals (SDGs) requires simulating policy impacts beyond mainstream statistical forecasting. It needs to factor in the fact that, over time and with new developments, statistical correlations used for forecasting change, and non-linearities kick in. Dedicated efforts are needed therefore to simulate trajectories and policy impacts beyond the short term.

The Agenda is a comprehensive plan of action for people, planet and prosperity that also seeks to strengthen global peace. The 17 SDGs at its heart are integrated and indivisible, and balance the three dimensions of sustainable development (the economic, the social, and the environmental). As a result, they address interdependent and overlapping sectors. Achieving certain SDG targets will also help achieve other, different SDGs; at the same time, investments toward some targets may mean a trade-off and reduced investment in other areas, making other SDG targets more difficult to reach. Uncovering these country-specific relationships and these trade-offs, and testing which policy orientations have the best overall impact, is key to helping craft realistic, cost-conscious policies, and dedicated efforts are therefore needed to evaluate these interdependencies between sectors.

This work package aims to evaluate these interlinkages; it makes long-term projections for different scenarios and factors in multi-sector interdependencies. By comparing the outcomes of several policy orientations, it looks for:

- i. **Areas that have accelerator effects** and can allow quick wins, preserve already achieved targets, or reinforce them and make them more resilient to threats;
- ii. **Policy actions that act as integrators** across the three dimensions of sustainability (economic, social, and environmental) and/or across sectors (education, health, economy, gender, governance, etc.), with consideration for synergies and trade-offs.

To this end, this work package posits long-term policy options and compares their impact on Egypt's SDG indicators by 2030. Based on projections and simulations of 2030 and beyond, it analyses how different policy orientations (economic development, social justice, investments in governance, women's empowerment) compare with each other; which produce accelerated progress in small sectors, which have slower but sustained effects, and which produce far-reaching positive outcomes in several broad areas.

By comparing different methodologies and scenarios, this work package credibly sketches the type of bold, integrated policies that will be necessary for Egypt to deliver optimally on the SDGs.

The scenarios are set at the strategic level and this work package does not prescribe in detail how these policies would be implemented, or coordinated and devolved at the subnational level. These issues are in part tackled by the other work packages under the UN SDG Mainstreaming Accelerating and Policy Support (MAPS) engagement with Egypt.

METHODOLOGY

Reference is made to the two technical papers underlying this policy note:

- World Bank Policy Research Working Paper 8463 - *Sustainable Development Goal Diagnostics: The Case of the Arab Republic of Egypt*. H. Amin-Salem, M.H. El-Maghrabi, I. Osorio Rodarte, J. Verbeek. (June 2018). <http://documents.worldbank.org/curated/en/532831528165791465/pdf/WPS8463.pdf>
- International Futures - *Sustainable Development Goals Report: Egypt 2030*. David Bohl, Taylor Hanna, Andrew Scott, Jonathan Moyer, Steve Hedden - Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies, University of Denver. (November 2018). <http://www.eg.undp.org/content/egypt/en/home/library/sustainable-development-goals--sdgs-/sustainable-development-goals-report--egypt-2030.html>

Based on extensive datasets (recent SDG indicator measurements and historical time series for Egypt and other countries), this work package utilizes:

- i) Cross-country regressions to understand how Egypt is performing currently and how it is likely to perform in 2030 vis-à-vis select SDG indicators and related variables;
- ii) Simulations of SDG indicators in 2030 using the comprehensive International Futures model, which takes into account synergies across sectors and feedback loops and is calibrated empirically, using long time series from many regions and countries.

The projections into 2030 of select SDG indicators and key macroeconomic variables (GDP, Human Development Index score, poverty, etc.) for each policy option are then compared to each other and to baseline scenarios to identify which policy elements are likely to act as accelerators and integrators.

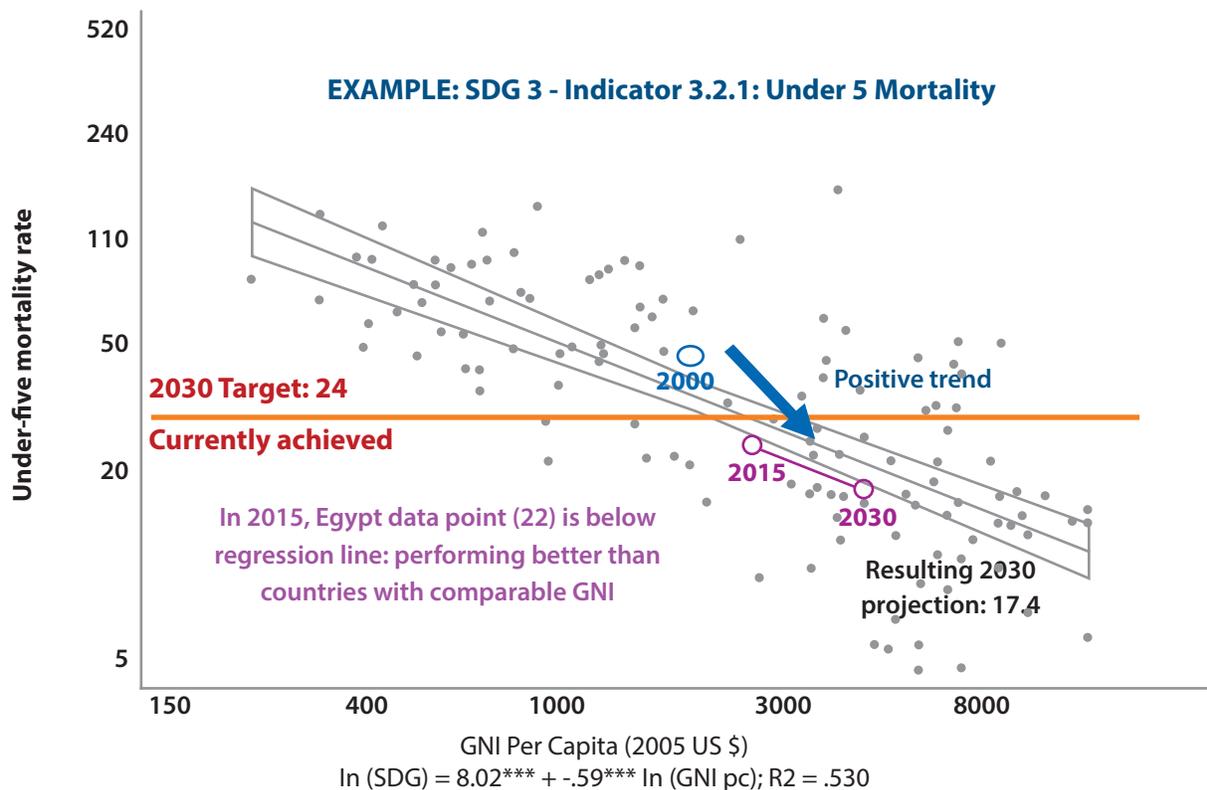
This work package focuses on comparing broad policy orientations in support of policymaking. It does not attempt to predict the outcomes of SDG targets in 2030. Simulations of Egypt's performance against SDG targets in 2030 are not predictions, as these outcomes depend on the policies that will be adopted. Similarly, the baseline scenarios "business-as-usual" and "Current Path" cannot be regarded as the most likely predictions, since they do not take into account future changes in policy orientation.

As each SDG is measured by multiple indicators, the analysis is at the indicator level; select indicators are measured against SDG targets set at the global level in the 2030 Agenda, or set by Egypt in its sustainable development strategy, Egypt's Vision 2030. Since some of the 169 SDG indicators are not simulated and some indicators have no assigned quantitative target, this policy note makes use of select indicators across several SDGs.

The methodologies of the forecasting tools used, and their respective strengths and weaknesses, are laid out below.

The World Bank Trajectory Analysis (WBTA) uses cross-country regressions of SDG indicator achievements versus GNI per capita to identify, for Egypt, SDG targets that have the potential to be reached, passed or missed. The analysis reflects what is expected in 2030 given the indicators at the starting point in 2015 and the country's expected GNI per capita in 2030.

Figure 1: Illustration of World Bank Trajectory Analysis (WBTA) methodology



On that basis, the trajectory analysis projects Egypt’s performance on 14 SDG indicators in 2030, as well as its under- or over-performance compared to countries with similar GNI. It also identifies upward or downward trends in Egypt’s performance between 2010 and 2015. **This analysis of performance points qualitatively to sub-sectors which require more attention — areas where GNI growth is not enough to lift the concerned SDG indicators toward their targets and where dedicated policy support could be needed.**

The cross-country regressions take a “business-as-usual” approach and do not make hypotheses about Egypt’s future social and economic policies, but rather internalize countries’ experiences at different levels of GNI, allowing them to some extent to anticipate Egypt’s future trajectory.

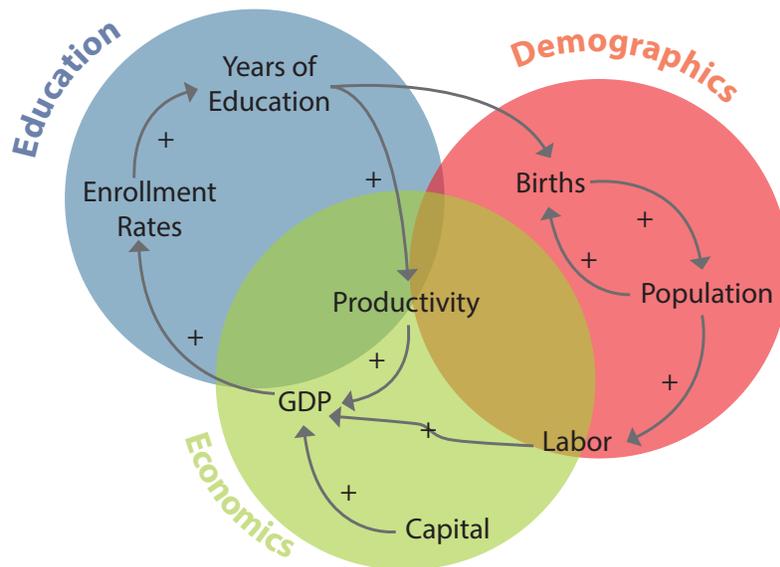
The International Futures (IFs) model integrates relationships between 12 core systems, including agriculture, demographics, economics, education, energy, environment, finance, governance, health, infrastructure, international politics, and technology, based on long time series from 186 countries. The IFs model forecasts 94 variables that are related to SDG indicators. Forty-seven of these variables include explicit, numerical targets that can be used to assess Egypt’s progress.

These core systems are dynamically connected, so the IFs model can simulate how changes in one system may lead to changes across others. IFs generates more variables and relationships from a broader range of critical development systems than any

other open-source model. As a result, IFs is a strongly integrative, non-linear model where a variable/indicator in one sector can affect development outcomes/indicators in other, sometimes distant-seeming, sector.

The International Futures model explicitly models dynamics in social, environmental and governance sub-systems and their interaction with economic and demographic sub-systems, as shown in Figure 2 below.

Figure 2: Graphic representation of the relations and feedback loops of one submodule of the International Futures model



Finally, the model is set up to help simulate alternative policies, allowing the identification of those that yield the most significant results regarding specific indicators and SDG targets.

In order to be able to compare contrasting policy impacts, alternative scenarios were created which hypothesized ambitious intermediate policy achievements in different areas, such as women’s empowerment, governance, and economic development. The policy achievements taken as assumptions may be simplified in a later analysis.

For this analysis, five alternative scenarios were designed to help explore the impact of different policies on economic and social development indicators, including the baseline/Current Path scenario.¹ Forecasts are run for each scenario described in detail in Annex 1: (1) the “Economic Development” scenario, (2) the “Social Justice” scenario, (3) the “Women’s Empowerment” scenario, (4) the “Governance” scenario, and (5) the “Integrated Push” scenario. The effects on SDG indicators are compared to identify which policies have the most significant impact as **accelerators** and which policy mixes could be **integrators**.

¹ The Current Path scenario is simply the result of running the IFs model based on initial conditions, without specific policy outcomes expected. In the case of Egypt, adjustments were made, after consultations, to accommodate: (1) a slower reduction in fertility rates than at the current trend; (2) increased gas production resulting from the recent discovery of additional reserves. Policy outcomes of economic reforms started in 2016 may not be fully taken into account.

FINDINGS

This section details the findings of the different simulations described above.

Finding 1:

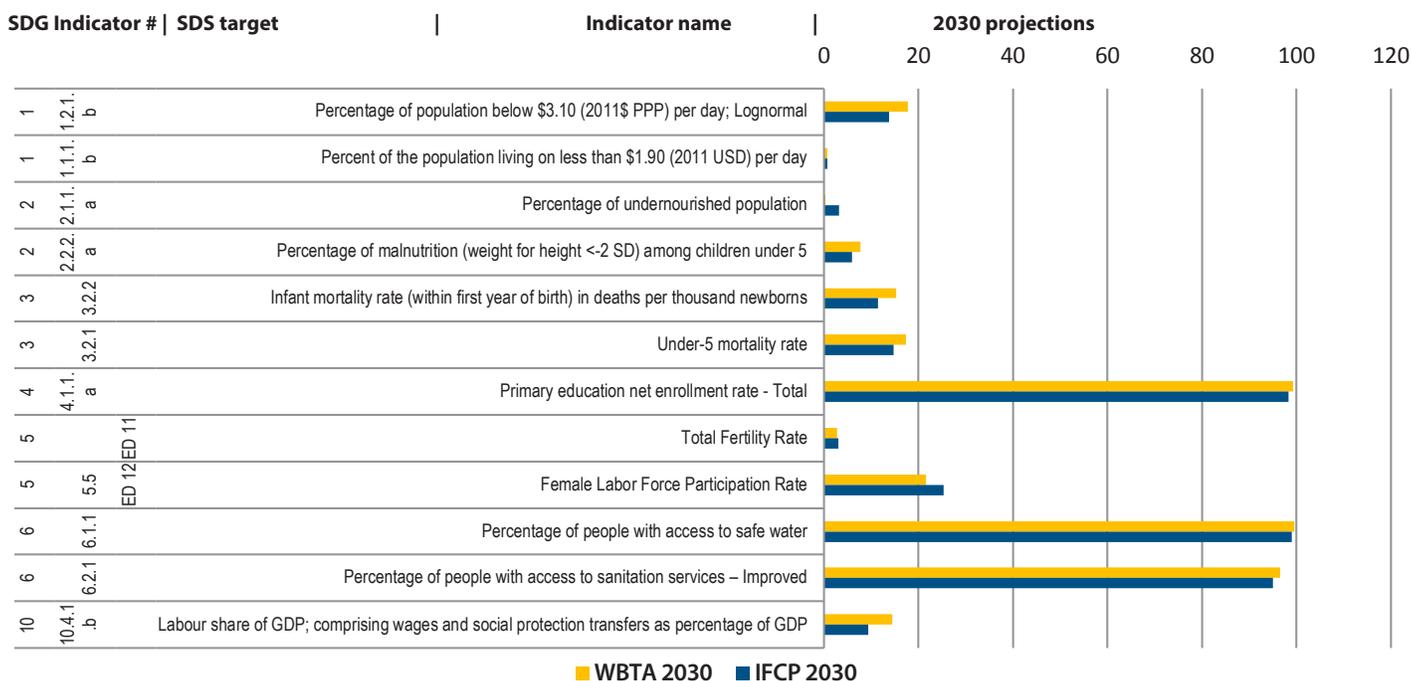
The World Bank’s Trajectory Analysis of “business-as-usual” and the International Futures’ “Current Path” scenario converge (not more than 30 percent difference in a sample of SDG targets by 2030).

This provides important reassurance of the robustness of the two very different methodologies and the soundness of long-term projections for policy analysis. This comes on top of other checks of the internal consistency of the model used and the general alignment of the trends simulated with elements of Egypt’s socio-economic dynamics.

For example, the World Bank analysis forecasts access to improved sanitary services (Goal 6, Target 6.2.1) to reach 96.5 percent, whereas the International Futures’ model in the Current Path scenario (IFCP) forecasts 95 percent. Similarly, both WBTA and IFCP forecast the extreme poverty rate will fall to 0.7 percent.

Figure 3 below illustrates these two projections, showing their convergence.

Figure 3: Forecasted values of SDG indicators in 2030 using two methodologies simulating business-as-usual scenarios, WBTA and IFCP



Finding 2:

Under the IFCP and WBTA forecasts of a “business-as-usual” approach, only 43 percent of selected SDG targets will be achieved, and poverty targets are narrowly missed.

Of 14 selected SDG target indicators across 10 SDGs, both the IFCP and WBTA forecast that six (43 percent) will be achieved by 2030. From this selection of target indicators, according to the IFCP forecast, target indicators for indicators 3.2.1, 3.2.2, 4.1.1.a, 4.1.1.b, 4.1.1.d, 6.1.1 and 7.1.1 will be achieved, while targets for indicators 1.1.2.b, 1.1.1.c, 2.2.2.a, 3.7.1, 5.5, and 6.2.1 will be missed. The WBTA forecast is similar, except target 3.2.2 is missed and target 5.5 is barely achieved (see Annex 2 for all SDG targets and indicators).

As highlighted above, these “business-as-usual” forecasts assume Egypt continues on its current path with no significant policy changes, no technological revolution, and no unforeseen crises or natural disasters.

Some of the missed targets are missed by a narrow margin, as shown in the diagram below. For example, the IFCP forecasts that in 2030, 17.2 percent of the Egyptian population will be living in poverty (defined as living on less than \$3.10 a day). Using the WBTA projection, the forecasted poverty rate is 17.8 percent. Both forecasts fail to meet the goal of halving poverty from the 2015 level of 22.3 percent to the 2030 target of 11.15 percent (Goal 1, Indicator 1.1.2).

This would be in contrast to Egypt’s past performance in achieving Millennium Development Goal 1; Egypt reduced extreme poverty (the population on less than \$1.25 per day) by over 62 percent between 1990 and 2008, successfully meeting targets under MDG 1 (halving the 2000 poverty rate by 2015).

Figure 4: Comparison of IFCP and WBTA forecasts for 2030

SGDs	SDS	Indicator Description	Target	WBTA	IFCP	WBTA	IFCP
				Forecasted	Deviation		
Goal 1. End poverty in all its forms everywhere							
1	1.1.1.b	Percentage of the population living on less than \$1.90 (2011 USD) per day	0.65	0.7	0.7	-8%	-7%
	1.2.1.b	Percentage of population below \$3.10 (2011\$ PPP) per day; Lognormal	11.1	17.75	13.7	-60%	-19%
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture							
2	2.2.2.a	Percentage of malnutrition (weight for height <-2 SD) among children under 5	3	7.7	5.9	-157%	-49%
Goal 3. Ensure healthy lives and promote well-being for all at all ages							
3	3.2.2	Infant mortality rate (within first year of birth) in deaths per thousand newborns	12	15.3	11.4	-28%	5%
	3.2.1	Under-5 mortality rate	24	17.4	14.7	28%	63%
	3.7.1	Contraception Use (percent of fertile women)	97	66	68.6	-32%	-41%
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all							
4	4.1.1.a	Primary education net enrolment rate – Total	97	99.3	98.3	2%	1%
	4.1.1.b	Primary education gross enrolment rate – Total	100	101.4	101.6	1%	2%
	4.1.1.d	Lower secondary education gross enrolment rate - Total	100	106.7	95	7%	-5%
Goal 5. Achieve gender equality and empower all women and girl							
5	ED 11	Total Fertility Rate	2.4	2.8	3	-17%	-20%
	5.5	ED 12 Female Labour Force Participation Rate	35	35	21.6	0%	-38%
Goal 6. Ensure availability and sustainable management of water and sanitation for all							
6	6.1.1	Percentage of people with access to safe water	97	99.6	99	3%	2%
	6.2.1	Percentage of people with access to sanitation services – Improved	97	96.5	95	-1%	-2%
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all							
7	7.1.1	Percentage of population with access to electricity - Total	97	100	99.9	3%	3%

To put poverty rate forecasts in context, Egypt's GDP per capita (at PPP) is projected to grow from \$10,250 in 2015 to \$14,270 by 2030, or roughly the level of Brazil in 2018. This growth will lead to a reduction in poverty and an expansion of the middle class, but will not be enough to meet the SDG poverty target.

It is projected that ten million fewer Egyptians will be living in poverty in 2030 than in 2015 (as defined by the population living below Egypt's current national poverty line, equivalent to \$3.40 per day at 2011 USD), while the middle-class population (those living on between \$10 and \$50 per day) is forecast to more than double by 2030. Meanwhile, Egypt's large population means that in 2030 as many as 16.7 million people could be living on less than \$3.10 a day and over 340,000 may still be living in extreme poverty.

Finding 3:

Compared to countries with similar GNIs, Egypt is underperforming on the SDGs. This may point to structural problem, and indicate that Egypt's level of economic development could be better deployed in terms of achieving the SDGs.

This is an important finding of the World Bank Trajectory Analysis. The sub-sectors where Egypt is performing worse than predicted by its GNI level are domestic material consumption, social assistance programmes, employed population below the international poverty line aged 15-24, and trained teachers, among others. In contrast, the indicators on which Egypt is performing better than predicted by its GNI level are under-5 mortality, improved water sources, access to electricity, and urban slums.

While this finding is the result of cross-country regression that does not identify the source of the under- or over-performance, it indicates that, beyond GNI, other structural factors are contributing to the achievement of SDG targets.

Finding 4:

Projections from the World Bank Trajectory Analysis that are based purely on GNI lag consistently behind the simulation of the International Futures (IFs) forecast, which uses a more complex, whole-of-society, whole-of-government model. This illustrates that cross-sector feedback loops contribute positively and that mixed policies that tackle several dimensions simultaneously will have added non-linear, mutually reinforcing benefits.

With reference to Figure 1 above, the IFCP forecasts, which use a holistic model, are consistently more optimistic than the WBTA on indicator-by-indicator linear projections. This finding is a qualitative validation that there are interdependencies between sectors and associated positive feedback loops that are not captured by GNI. As with Finding 3, the exact sources of over-performance within the holistic model compared to the linear GNI-based projections cannot be identified from these results alone.

Finding 5:

Scenarios that go beyond "business-as-usual" yield improvement on all observed SDG indicators, but scenarios that invest in women, people, or governance outperform (in that order) a scenario focused on economic aspects. All are outperformed by the "Integrated Push" scenario that mixes several policy priorities.

In contrast to the IFCP scenarios where 31 percent of 13 SDG targets covering 6 SDGs are reached in 2030, the proportion of SDG targets reached under alternative policy scenarios is higher and varies between 38 percent (the Governance scenario) and 62 percent (the Integrated Push scenario), as shown in Figure 5 below. While the number of targets reached from a sample of SDG indicators is debatable as a measure of success, it is complemented by the measure of deviation of forecasted SDG indicators from SDG targets, which follows the same patterns: the "Integrated Push" scenario presents the largest positive deviation (highlighted in dark green) and the smallest negative deviations (highlighted in light red), followed by Women's Empowerment.

Figure 5: Projected performance of 6 policy scenarios on 13 SDG targets across 6 SDGs in 2030

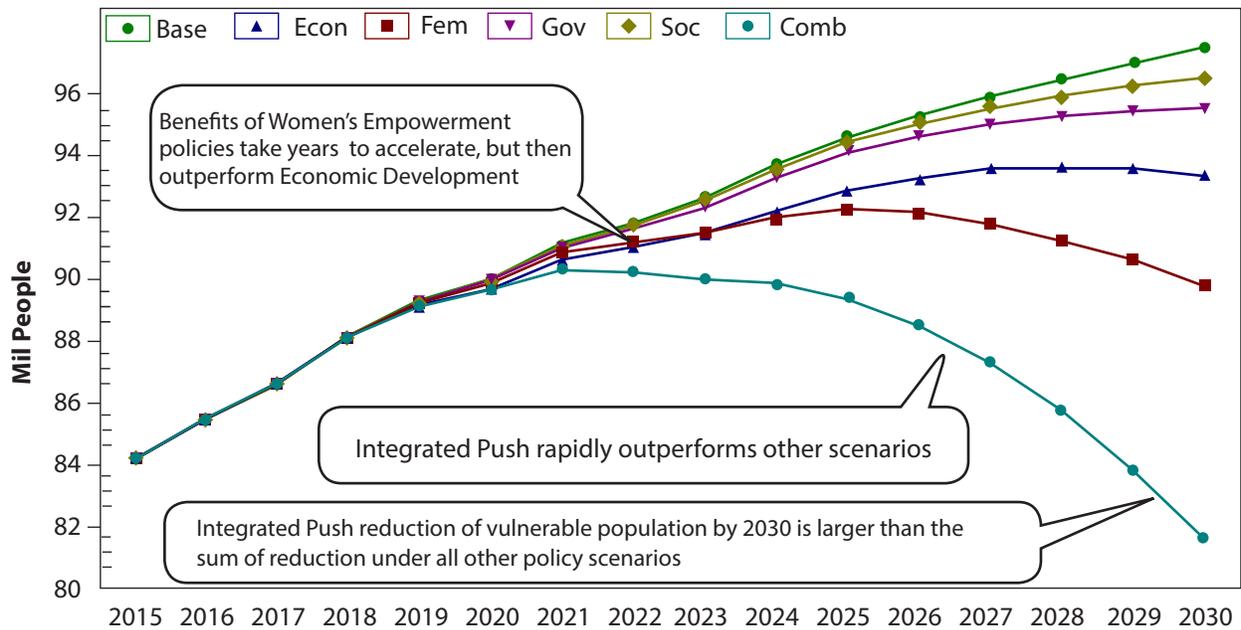
SDGs	SDS	Indicator(s) Description	Estimated 2015	Target	Current Path	Economic Development	Social Justice	Governance	Women Empowerment	Integrated Push	Forecasted values						Deviation From Target					
											Current Path	Economic Development	Social Justice	Governance	Women Empowerment	Integrated Push	Current Path	Economic Development	Social Justice	Governance	Women Empowerment	Integrated Push
Goal 1. End poverty in all its forms everywhere																						
1	1.2.1.b	Percentage of population below \$3.10 (2011\$ PPP) per day; Lognormal	22.3	11.1	13.7	11.3	11.5	12.3	11	6.1	-23%	-2%	-4%	-11%	1%	45%						
	1.1.1.b	Percent of the population living on less than \$1.90 (2011 USD) per day	1.3	0.65	0.7	0.5	0.4	0.5	0.4	0.1	-8%	23%	38%	23%	38%	85%						
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture																						
2	2.1.1.a	Percentage of undernourished population	4.5	3	3.2	3	3.1	3.1	3.1	2.8	-7%	0%	-3%	-3%	-3%	7%						
	2.2.2.a	Percentage of malnutrition (weight for height <-2 SD) among children under 5	7	3	5.9	5.8	5.7	5.8	5.8	5.4	-97%	-93%	-90%	-93%	-93%	-80%						
Goal 3. Ensure healthy lives and promote well-being for all at all ages																						
3	3.2.2	Infant mortality rate (within first year of birth) in deaths per thousand newborns	17.8	12	11.4	10.9	9.3	11.1	10.9	8.5	5%	9%	23%	8%	9%	29%						
	3.7.1	Contraception use (percent of fertile women)	58.5	97	68.6	69.9	69	69.4	70	72.4	-29%	-28%	-29%	-28%	-28%	-25%						
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all																						
4	4.1.1.c	Primary education gross completion rate - Total	97.7	97	100	100.5	100.5	100.3	100.5	101.7	3%	4%	4%	3%	4%	5%						
	4.1.1.e	Lower secondary education graduation rate - Total	78.8	97	82.2	83.5	85.4	83.1	83.7	88.2	-15%	-14%	-12%	-14%	-14%	-9%						
Goal 6. Ensure availability and sustainable management of water and sanitation for all																						
6	6.1.1	Percentage of people with access to safe water	98.8	97	99	99	100	99.1	99	100	2%	2%	3%	2%	2%	3%						
	6.2.1	Percentage of people with access to sanitation services – Improved	50	97	94.8	94.9	97.6	95	94.9	97.8	-2%	-2%	1%	-2%	-2%	1%						
	6.3.1.a	Percentage of people connected to wastewater collection system	44.3	97	45.8	46	49.2	45.9	46.1	50.3	-53%	-53%	-49%	-53%	-52%	-48%						
	6.4.2	Freshwater withdrawal as a percentage of available freshwater resources	148.8	74.4	138.5	138.5	138.5	138.6	138.3	138.3	-86%	-86%	-86%	-86%	-86%	-86%						
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all																						
7	7.1.1	Percentage of population with access to electricity - Total	99.7	97	99.9	99	100	99.1	98.9	100	3%	2%	3%	2%	2%	3%						
Percentage of SDG target achieved (from this selection of 13 targets across 6 SDGs)											31%	46%	46%	38%	46%	62%						

Finding 6:

The time element is important, as some dynamics and feedback loop effects require a longer period of time to take effect. Some scenarios lag behind for years, before catching up and out-performing others. This is consistent across several indicators and can be generally traced to demographic effects, which operate on a longer timescale.

Figure 6 below illustrates how the time dimension affects policy performance.

Figure 6: Performance of different policy scenarios over time



To explore this effect further, projections under the six policy scenarios were extended to 2050. Over the longer term, Governance performs better (see Figure 7 below).

Figure 7: Effects of different scenarios on selected indicators in 2030 and 2050; darker colours represent more “positive” outcomes. White fonts highlight the best performance.

	2015	2030					2050				
	Current Path	Current Path	Econ	Soc	Fem	Gov	Current Path	Econ	Soc	Fem	Gov
Education average years (pop 15+)	7.1	8.5	8.5	8.6	8.5	8.5	9.9	10.0	10.4	10.3	10.0
GDP at MER (Market Exchange Rates) billion USD	268	577	633	595	614	612	1,376	1,638	1,586	1,403	1,739
Share of Global GDP percent	0.33	0.45	0.49	0.46	0.48	0.48	0.57	0.67	0.65	0.58	0.72
GDP per capita thousand USD	10.1	13.3	14.2	13.5	14.2	13.8	18.0	20.3	19.9	20.4	21.2
GDP growth rate annual percent change	4.4	5.4	6.4	5.8	6.2	6.4	3.5	3.8	4.1	3.0	4.4
Government revenue billion USD	67	170	187	180	182	182	452	545	543	477	581
HDI index	0.69	0.73	0.74	0.75	0.74	0.74	0.79	0.8	0.81	0.81	0.8
HDI ranking out of 186 countries	103	104	104	100	104	104	112	107	103	104	106
Poverty million people	20.9	16.7	13.9	14.1	12.9	15.1	16.3	11.1	9.8	8.0	9.6
Poverty percent of population	22.3	13.7	11.3	11.5	11.0	12.3	10.0	6.8	6.0	5.8	5.9
Life expectancy years	71.3	73.8	74.0	75.0	74.0	73.9	76.6	76.9	77.8	77.0	77.0

Note: GDP and GDP per capita figures represented in 2011 US Dollars. HDI is the Human Development Index, a UN composite index measuring achievement across life expectancy, average years of education, and gross national income (GNI) per capita. HDI rankings displayed are for the designated year (2015, 2030, or 2050) and out of the 186 countries forecast in IFs. Poverty refers to the population living on less than \$3.10/day. Scenario abbreviations are as follows: ‘Econ’ is Economic Development, ‘Soc’ is Social Justice, ‘Fem’ is Women Empowerment, and ‘Gov’ is Governance. Source: IFs 7.36.

Finding 7:

Some specific SDG targets will remain elusive (e.g. nutrition) and targets will not be achieved in 2030, based on the policy scenarios analysed.

With reference to Figure 5 above, targets for **malnutrition** (SDG indicator 2.1.1), **access to wastewater collection systems** (SDG indicator 6.3.1.a) and **water scarcity** (SDG indicator 6.4.2) would be consistently missed by 2030 under all the policy scenarios forecasted. This indicates that, regardless of the general integrated policies adopted, these SDG targets may be particularly difficult to reach. It is noteworthy that these targets are missed in all scenarios, but in different ways. Across the policy scenarios simulated, forecasted fresh water withdrawal is almost constant, and so is malnutrition. On the other hand, access to a wastewater collection system and contraception use (SDG indicator 3.7.1) varies significantly between scenarios, but without coming close to the targets.

Finding 8:

Nearly all of the scenarios selected in this study show an increase in carbon emissions (as shown in the International Futures paper), with the “Integrated Push” scenario increasing emissions nearly 8 percent by 2030 relative to the Current Path scenario, and over 20 percent by 2050, for a cumulative 400 million tons of additional carbon emissions (an amount similar to the total emissions produced by Egypt between 1960 and 1995). The exception to this is the Women Empowerment scenario, which, by slowing population growth, is actually associated with a reduction in carbon emissions by 2050, relative to the Current Path.

Similarly, as indicated in Finding 7, **freshwater withdrawals stay very high and above target** across all policy scenarios.

Finding 9:

The tools used for this analysis do not cover all 169 SDG indicators. At the same time, some indicators are simulated that have not yet received a national target (e.g. 11.6.2, 12.3, 16.1.1.b). This situation prevents a full analysis of achievements by 2030.

In addition, **there is no known prioritization of SDGs (weighting the achievement of some SDGs more heavily than others) that will enable the comparison of policy scenarios quantitatively.**

SUMMARY OF TRADE-OFFS AND SYNERGIES BETWEEN SCENARIOS

Economic Development quite expectedly leads to the greatest growth in GDP, but only slightly ahead of scenarios **Women Empowerment** and **Governance**. As an important part of this scenario, improving business regulation means that businesses have less incentive to operate and hire informally, leading to a 31 percent drop in informality from 2018 levels – the greatest reduction of the four scenarios. Assumed increases in vocational enrolment as well as science and engineering graduates make for a more capable and productive workforce while investments in R&D and higher levels of trade and foreign investment fuel more productive industries. Moreover, economic growth and job formalization lead to an expansion in the tax base, resulting in an annual \$17 billion increase in government revenues and a \$77 billion cumulative increase relative to the Current Path by 2030. This means that with such a broad and sustained economic policy, the government could also invest more in social services and physical infrastructure

Women Empowerment leads to broadly positive outcomes in all areas but is also associated with an increase in the unemployment rate due to more people entering the labour force. Gains from a push to expand Women participation in the labour force could be amplified therefore when combined with policies encouraging job creation.

Social Justice increases access to and quality of education, sees improvements in health outcomes, and provides additional income via transfers to poorer households. As a result, it has the greatest impact on human development and related outcomes, and is the only scenario which leads to a change in Egypt's global HDI ranking, from 103rd of 186 countries in 2015 to 100th in 2030.² However, it achieves fewer results in economic growth, although with the prospect of some catching up in the longer term.

Governance (security, effectiveness, transparency) leads very good results by 2030 and **to the best outcome by 2050**. Improvements in governance may not yield immediately impressive results, in comparison to the other scenarios. But because improvements in governance change the way that elements of economic and human development interact, a focus on governance today has the potential to pay off considerably in the long run, and this scenario therefore outperforms the Economic Development scenario over this longer timescale.

Integrated Push has the strongest impact across nearly all indicators examined in this report. By 2030, Egypt moves from the 100th highest GDP per capita in 2015 to the 88th, where it is projected to reach \$16,000, roughly the level of Thailand today. On some variables, the improvement shown in Integrated Push exceeds the sum of improvements of all sub-scenarios taken individually. For instance, in Integrated Push by 2030, GDP is \$150 billion higher than under the Current Path, whereas the sum of the gains in the other four scenarios is only \$145 billion. This demonstrates that intervention packages are working together to produce synergies that are only achievable in combination.

² Egypt in 2030 under this scenario would rank 79th according to the 2015 values of HDI.

RECOMMENDATIONS

Recommendation A.

Drawing on Findings 2 and 5, **Egypt can set itself more ambitious targets and policies** for SDGs that have already achieved at present or will be achieved in 2030 under all policy scenarios; **these areas include extreme poverty, infant mortality, electrification, and education**. More ambitious targets may have a ripple effect on other fields (e.g. quality education can complement universality of primary and secondary education and have positive effects on employment and growth, while in addition to targets for universal electrification, targets can be set for more grid-connected renewable energy generation, which could reduce electricity generated from gas, possibly impacting positively on the overall trade balance and greenhouse gas emissions).

Additional simulations can help determine more ambitious but still realistic scenarios for these sectors.

Recommendation B.

Drawing on Findings 3 and 4, **dedicated investment in social protection, the income of the young working poor, capacity building of teachers, and reinforcement of relevant institutions** may help reap the full benefits of Egypt's economic development and of its status as a middle-income country.

More analysis is needed to uncover which policy items have caused Egypt to perform lower than expected in the identified sub-sectors.

Recommendation C.

As shown by Findings 5 and 6, only some SDG targets will be reached via a "business-as-usual" and economic push scenario; instead, important policy changes that are cross-sectoral, integrated and long-term are needed to put Egypt on track to achieving a majority of SDG targets. Achieving the SDGs will take longer and be more difficult than achieving the MDGs, and requires **comprehensive, patient, strategic policy orientation to put in place and maintain a holistic, long-term policy package that tackles several dimensions at the same time**, as exemplified by the "Integrated Push" scenario.

Finding 6 shows that this **integrated policy orientation will need to include strong elements of women's empowerment, social justice and strengthened governance**. This multi-headed policy strategy marks a departure from narrowly focused policy orientations. Setting the stage early for such integrated policies is important.

Further policy analysis is required to facilitate policymaking by providing certainty that the different simulations are all consistent, robust and point to the same policy options, and certainty that the policy package proposed is not redundant and presents the most efficient and cost-effective policy mix.

Recommendation D.

Drawing on Finding 7, **dedicated attention should be paid to malnutrition (SDG indicator 2.1.1), access to wastewater collection systems (SDG indicator 6.3.1.a) and water scarcity (SDG indicator 6.4.2)**. A successful policy mix will need to include additional policy actions to tackle these sub-sectors. It is important not to neglect these difficult targets as they

could in fact be the key to unlocking progress in other areas. Indicator 6.3.1, for example, would be the key to jumpstart and increase recycling of wastewater, a potential contributor to reducing fresh water withdrawals.

Additional creative policy options need to be explored that contemplate transformation of food systems, behavioural change, and less water-intensive production, in order to have an impact on malnutrition, create new jobs, and increase sustainability of natural resources.

Recommendation E.

Drawing on Finding 8, to address environmental sustainability, **additional scenarios need to be explored that include policy options more explicitly targeting greenhouse gas emissions and/or reducing vulnerability to water scarcity.**

Recommendation F.

Drawing on Finding 9, as part of efforts to support the implementation of the SDGs, **more policy analysis is needed**, to provide richer findings and more readily actionable recommendations that are fully tested for consistency and robustness.

Complete SDG targets need to be set for Egypt, as initiated in Egypt's Vision 2030, the country's sustainable development strategy.

To assist in evaluation of policy options, a prioritization of SDG targets or policy-level decisions regarding which SDG indicators carry more weight, and which are considered redundant, should be considered.

Modelling tools could be made more complete by simulating more extensive sets of the 169 SDG indicators.

As part of monitoring progress against SDG indicators, data collection needs to be more comprehensive by covering more of the 169 indicators; it must also be more precise and disaggregated at the subnational level, and made easily accessible.

ANNEX 1: Assumptions made for each policy scenario

Scenario	Assumptions
Economic Development (Econ)	Unemployment falls from 12.6 percent in 2018 to 4.6 in 2030, achieving Egypt's 2030 target. (Current Path value in 2030: 12.2 percent)
	Lower secondary vocational enrolment (as a percentage of enrolment in all programmes) increases from 3 percent in 2018 to 13 percent in 2030, and upper secondary vocational enrolment increases from 47 percent in 2018 to 67 percent in 2030. (Current Path value in 2030: 3 percent for lower and 47 percent for upper secondary)
	The percent of tertiary graduates in science and engineering fields increases from 20 percent in 2018 to 30 percent in 2030. (Current Path value in 2030: 21 percent)
	Exports as a percent of GDP increase from 12 percent in 2018 to 15.7 percent in 2030. (Current Path value in 2030: 13.3 percent)
	FDI as a percent of GDP increases from 43 percent in 2018 to 55 percent in 2030. (Current Path value in 2030: 46 percent)
	Government spending on research and development increases from 0.04 percent of GDP in 2018 to 0.19 percent in 2030. (Current Path value in 2030: 0.04 percent)
	Government regulation improves, according to the World Bank's Governance Regulatory Quality indicator, from a score of 1.8 in 2018 to 2.5 in 2030, roughly the level of Morocco today. (Current Path value in 2030: score of 2.06)
Social Justice (Soc)	Welfare transfers to unskilled households increases slightly from 9.5 percent of GDP in 2018 to 10 percent of GDP in 2030, whereas along the Current Path it falls to 8.6 percent of GDP. (Current Path value in 2030: 8.6 percent)
	Tertiary graduation rates increase from 14 percent of tertiary students in 2018 to 24 percent in 2030. (Current Path value in 2030: 15 percent)
	The death rate from noncommunicable diseases falls slightly from 4.8 per 1,000 in 2018 to 4.7 in 2030. (Current Path value in 2030: 5.08 deaths per 1,000)
	The burdens of child and maternal mortality decrease; child mortality falls from 22 deaths per thousand in 2018 to 12 in 2030 and adult female mortality falls from 1.9 to 1.4 deaths per thousand by 2030. (Current Path value in 2030: 15 deaths per 1,000 for children and 1.6 for adult women)
	Government spending on education increases from 3.7 percent of GDP in 2018 to 5 percent in 2030. (Current Path value in 2030: 3.71 percent)
	Government spending on health increases from 2.1 percent of GDP in 2018 to 2.8 percent in 2030. (Current Path value in 2030: 2.21 percent)
	Government spending on infrastructure, as a percent of GDP, remains at the same level, whereas along the Current Path it drops one percentage point by 2030. (Current Path value in 2030: 3.04 percent)
	Educational quality improves, bringing average primary test scores from 32 in 2018 to 39 in 2030 (at the level of Jordan today) and average secondary test scores from 44 in 2018 to 49 in 2030. (Current Path value in 2030: average scores of 36 for primary and 45 for secondary)

Governance (Gov)	Government effectiveness improves, according to the World Bank's Governance Effectiveness index, from 1.76 in 2018 to 2.9 in 2030, roughly the level of Italy and Botswana today. (Current Path value in 2030: score of 2.05)
	Government transparency improves, according to Transparency International's Corruption Perception Index, from a score of 3 in 2018 to 4.5 in 2030, roughly the level of Oman and Jordan today. (Current Path value in 2030: score of 3.4)
	The threat of internal conflict is effectually eliminated, moving along the IFs Internal War Index from a score of 0.4 in 2018 to 0.05 in 2030. (Current Path value in 2030: score of 0.19)
Women Empowerment (Fem)	Female labour participation increases from 23 percent in 2018 to 38 percent in 2030, exceeding Egypt's 2030 target of 35 percent. (Current Path value in 2030: 25 percent)
	By 2030, gender empowerment improves, according to the UNDP's Gender Empowerment Measure (GEM) from 0.29 in 2018 to 0.5 in 2030, roughly the level of Oman and Qatar today. (Current Path value in 2030: score of 0.3)
	Fertility falls from 3.3 children per woman to 2 by 2030. (Current Path value in 2030: 3 children per woman)

ANNEX 2: Summary of consultations on Work Package 1 findings

Following the work on both papers, three opportunities for reflection and feedback were created:

- As part of the stocktaking meeting of all MAPS work packages on 26 November 2018, the issues below were identified for follow-up:
 - Recommendations should be more specific; detailed suggestions on what should be done by whom to improve performance in order to implement the SDGs, and backed by solid evidence suitable for policymaking, are to be tackled through more detailed consultations with the Ministry of Planning, Monitoring and Administrative Reform (MoPMAR).
 - Underperforming SDGs call for dedicated attention and detailed recommendations of what can be achieved and how.
 - All policy recommendations have budget/financial implications that are important to estimate; costing the policy recommendations put forward would be key, keeping in mind that different organizations are examining this issue (the Organisation for Economic Co-operation and Development, the World Bank, the International Monetary Fund, the National Council for Women) from different angles. Analysis of the current and expected development financing flows would also help set priorities and incentives for different financing sources.
 - Additional targets and indicators need to be set more clearly for Egypt, which requires a dedicated exercise.
 - Policy recommendations should recognize that the policy space is not blank; existing policies need to be taken into consideration and new policy recommendations should be based on them.
- Further, technical aspects of the implementation of the International Futures model were held on 13 December 2018 with technical colleagues at MoPMAR and the Central Agency for Public Mobilization and Statistics (CAPMAS), where it was stressed that the way forward should include:
 - Testing the robustness by running the model with more recent Government of Egypt (GoE) data in place of preloaded data, testing the sensitivity to different data sources, checking forecasting accuracy and making spot checks of empirical coefficients used in the model equations to validate them in the Egyptian context. Where possible, this model should be tested against others for validation (general accounts models, computable general equilibrium models, etc.) so that the GoE has a battery of models at its disposal for robust decision-making.
 - Clarify that while the model is public, forecasts may not be or may always need to be accompanied by the cautionary note that they are not predictions, as results depend on policies.
 - Embed the tool more solidly in the work of initial trainees as a focus group, so that there is more time to test it comprehensively with different data, different policy assumptions and link it with other tools such as I-Stimulate and computable general equilibrium models, GTAP-Power, etc.
 - Breakdown policy assumptions into more detailed scenarios to be tested and compared, so that the policy recommendations of the different scenarios can be more detailed and less vague. As it stands, the policy assumptions are too ambitious and too high level to be used as policy recommendations.
 - Need for additional scenarios that contemplate an environmental policy push and others.

- Translate forecasting report into Arabic and reach out to other relevant institutions and their statistical/forecasting units: the Ministry of Finance, the Ministry of Investment and International Cooperation, the Central Bank of Egypt, the Governance Center in the National Management Institute, the Information and Decision Support Center, and relevant university faculties.
- Finally, discussions were held between on 19 December 2018 to further compare findings of MAPS work packages, where it was noted that:
 - Egypt's forecasted SDG indicators in 2030 are below target, but this is the case for many countries and confirms that the 2030 Agenda is ambitious. However, some SDG targets may be lower for Egypt, as part of the localization of SDGs, but they need to be set officially. Conversely there may also be a need to adapt some important SDG indicators that may be misleading; for example, water network connectivity is good but does not translate into actual water supply.
 - While very different in approach, trajectory analyses and International Futures make similar forecasts for "business-as-usual", which participants found to be an indication the models were robust and accurate.
 - Scenarios incorporating different policies towards environment sustainability should be incorporated, as they are likely options, judging from global trends.
 - Policy priorities suggested are generally aligned with the United Nations Partnership for Development Framework (UNPDF), which opens the door to integrated policies and a holistic approach on the part of MoPMAR; quantitative projection and tools that ministries recognize and need in their policymaking processes are needed, and that methodology should be owned by the government, as it is all about the process.
 - Some difficult sectors such as nutrition are a long-lasting problem in almost all forecasts, but they are too important to be left unaddressed. Some strong changes in assumptions (such as deep-seated changes in food systems, behavioural changes, innovations, and market transformation) need to be tested.
 - Some advocacy work is needed to make the more surprising results better known and detailed enough to be used for policymaking; for example, stronger fiscal policy and lowering corruption or increasing transparency have a very large medium-to-long-term effect on development indicators.
 - More details and refinement in the policy options are needed; for example, scenarios that incorporate strong economic policies could easily specify general orientations, such as pro-labour or pro-poor. Similar refinements are needed when measuring the different type of unemployment policies.
 - For the women's empowerment scenarios, lower-level policy outputs that tie in closely with labour force participation were proposed for study/modelization: a shrinking public sector, safety on the streets, nurseries, tax incentives to hire women, and mobility adapted for women – noting that employment opportunities are not always geographically accessible to women.

*Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development**

Sustainable Development Goal indicators should be disaggregated, where relevant, by income, sex, age, race, ethnicity, migratory status, disability and geographic location, or other characteristics, in accordance with the Fundamental Principles of Official Statistics.¹

Goals and targets (from the 2030 Agenda for Sustainable Development)	Indicators
Goal 1. End poverty in all its forms everywhere	
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	1.2.1 Proportion of population living below the national poverty line, by sex and age
	1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1.4.1 Proportion of population living in households with access to basic services
	1.4.2 Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure
1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	1.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
	1.5.2 Direct economic loss attributed to disasters in relation to global Gross Domestic Product (GDP)
	1.5.3 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030
	1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies

1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	1.a.1 Proportion of domestically generated resources allocated by the government directly to poverty reduction programmes
	1.a.2 Proportion of total government spending on essential services (education, health and social protection)
	1.a.3 Sum of total grants and non-debt-creating inflows directly allocated to poverty reduction programmes as a proportion of GDP
1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	1.b.1 Proportion of government recurrent and capital spending to sectors that disproportionately benefit women, the poor and vulnerable groups
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	2.1.1 Prevalence of undernourishment
	2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	2.2.1 Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age
	2.2.2 Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	2.3.1 Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size
	2.3.2 Average income of small-scale food producers, by sex and indigenous status
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2.4.1 Proportion of agricultural area under productive and sustainable agriculture

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities
	2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction
2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	2.a.1 The agriculture orientation index for government expenditures
	2.a.2 Total official flows (official development assistance plus other official flows) to the agriculture sector
2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	2.b.1 Agricultural export subsidies
2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	2.c.1 Indicator of food price anomalies
Goal 3. Ensure healthy lives and promote well-being for all at all ages	
3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1 Maternal mortality ratio
	3.1.2 Proportion of births attended by skilled health personnel
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under5 mortality to at least as low as 25 per 1,000 live births	3.2.1 Under5 mortality rate
	3.2.2 Neonatal mortality rate
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations
	3.3.2 Tuberculosis incidence per 100,000 population
	3.3.3 Malaria incidence per 1,000 population
	3.3.4 Hepatitis B incidence per 100,000 population
	3.3.5 Number of people requiring interventions against neglected tropical diseases

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
	3.4.2 Suicide mortality rate
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders
	3.5.2 Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol
3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1 Death rate due to road traffic injuries
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.1 Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods
	3.7.2 Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)
	3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution
	3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)
	3.9.3 Mortality rate attributed to unintentional poisoning
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older

<p>3.b Support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all</p>	<p>3.b.1 Proportion of the target population covered by all vaccines included in their national programme</p>
<p>3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States</p>	<p>3.b.2 Total net official development assistance to medical research and basic health sectors</p>
<p>3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks</p>	<p>3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis</p>
<p>3.c.1 Health worker density and distribution</p>	<p>3.c.1 Health worker density and distribution</p>
<p>3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness</p>	<p>3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness</p>
<p>Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	
<p>4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes</p>	<p>4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex</p>
<p>4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education</p>	<p>4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex</p>
<p>4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university</p>	<p>4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex</p>
<p>4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</p>	<p>4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex</p>
<p>4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations</p>	<p>4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill</p>
<p>4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated</p>	<p>4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated</p>

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.a.1 Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)
4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries	4.b.1 Volume of official development assistance flows for scholarships by sector and type of study
4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1 Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country
Goal 5. Achieve gender equality and empower all women and girls	
5.1 End all forms of discrimination against all women and girls everywhere	5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex
5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	5.2.1 Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age

	5.2.2 Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	5.3.1 Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18
	5.3.2 Proportion of girls and women aged 15–49 years who have undergone female genital mutilation/cutting, by age
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.1 Proportion of seats held by women in (a) national parliaments and (b) local governments
	5.5.2 Proportion of women in managerial positions
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1 Proportion of women aged 15–49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care
	5.6.2 Number of countries with laws and regulations that guarantee full and equal access to women and men aged 15 years and older to sexual and reproductive health care, information and education
5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure
	5.a.2 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control
5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	5.b.1 Proportion of individuals who own a mobile telephone, by sex
5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1 Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment

Goal 6. Ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated
	6.3.2 Proportion of bodies of water with good ambient water quality
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0–100)
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan
6.b Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity
	7.1.2 Proportion of population with primary reliance on clean fuels and technology

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	8.1.1 Annual growth rate of real GDP per capita
8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	8.2.1 Annual growth rate of real GDP per employed person
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	8.3.1 Proportion of informal employment in non-agriculture employment, by sex
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead	8.4.1 Material footprint, material footprint per capita, and material footprint per GDP
	8.4.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities
	8.5.2 Unemployment rate, by sex, age and persons with disabilities

8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1 Proportion of youth (aged 15–24 years) not in education, employment or training
8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	8.7.1 Proportion and number of children aged 5–17 years engaged in child labour, by sex and age
8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
	8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate
	8.9.2 Proportion of jobs in sustainable tourism industries out of total tourism jobs
8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	8.10.1 (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults
	8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider
8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries	8.a.1 Aid for Trade commitments and disbursements
8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	8.b.1 Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road
	9.1.2 Passenger and freight volumes, by mode of transport

9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	9.2.1 Manufacturing value added as a proportion of GDP and per capita
	9.2.2 Manufacturing employment as a proportion of total employment
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	9.3.1 Proportion of small-scale industries in total industry value added
	9.3.2 Proportion of small-scale industries with a loan or line of credit
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	9.4.1 CO ₂ emission per unit of value added
	9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	9.5.1 Research and development expenditure as a proportion of GDP
	9.5.2 Researchers (in full-time equivalent) per million inhabitants
9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure
	9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	9.b.1 Proportion of medium and high-tech industry value added in total value added
	9.c.1 Proportion of population covered by a mobile network, by technology
Goal 10. Reduce inequality within and among countries	
10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	10.1.1 Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	10.2.1 Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities
10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law
10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	10.4.1 Labour share of GDP, comprising wages and social protection transfers
10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations	10.5.1 Financial Soundness Indicators
10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions	10.6.1 Proportion of members and voting rights of developing countries in international organizations
10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies	10.7.1 Recruitment cost borne by employee as a proportion of yearly income earned in country of destination
	10.7.2 Number of countries that have implemented well-managed migration policies
10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements	10.a.1 Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff
10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes	10.b.1 Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)
10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent	10.c.1 Remittance costs as a proportion of the amount remitted
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	11.3.1 Ratio of land consumption rate to population growth rate
	11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	11.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
	11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities
	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities
	11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	11.a.1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city

<p>11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels</p>	<p>11.b.1 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030</p>
	<p>11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies</p>
<p>11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials</p>	<p>11.c.1 Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials</p>
<p>Goal 12. Ensure sustainable consumption and production patterns</p>	
<p>12.1 Implement the 10Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries</p>	<p>12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies</p>
<p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p>	<p>12.2.1 Material footprint, material footprint per capita, and material footprint per GDP</p>
	<p>12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</p>
<p>12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</p>	<p>12.3.1 Global food loss index</p>
<p>12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment</p>	<p>12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement</p>
	<p>12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment</p>
<p>12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p>	<p>12.5.1 National recycling rate, tons of material recycled</p>
<p>12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>	<p>12.6.1 Number of companies publishing sustainability reports</p>

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	12.7.1 Number of countries implementing sustainable public procurement policies and action plans
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	12.a.1 Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels
Goal 13. Take urgent action to combat climate change and its impacts²	
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	13.1.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
	13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030
	13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
13.2 Integrate climate change measures into national policies, strategies and planning	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)

<p>13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula</p> <p>13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</p>
<p>13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible</p>	<p>13.a.1 Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the \$100 billion commitment</p>
<p>13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities</p>	<p>13.b.1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities</p>
<p>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	
<p>14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p>	<p>14.1.1 Index of coastal eutrophication and floating plastic debris density</p>
<p>14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</p>	<p>14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches</p>
<p>14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels</p>	<p>14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations</p>
<p>14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics</p>	<p>14.4.1 Proportion of fish stocks within biologically sustainable levels</p>

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	14.5.1 Coverage of protected areas in relation to marine areas
14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation ³	14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing
14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries
14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	14.a.1 Proportion of total research budget allocated to research in the field of marine technology
14.b Provide access for small-scale artisanal fishers to marine resources and markets	14.b.1 Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries
14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"	14.c.1 Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nations Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a proportion of total land area
	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest management
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	15.3.1 Proportion of land that is degraded over total land area
15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	15.4.1 Coverage by protected areas of important sites for mountain biodiversity
	15.4.2 Mountain Green Cover Index
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.5.1 Red List Index
15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	15.7.1 Proportion of traded wildlife that was poached or illicitly trafficked
15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020
15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	15.a.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems
15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	15.b.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

15.c.1 Proportion of traded wildlife that was poached or illicitly trafficked

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.1.1 Number of victims of intentional homicide per 100,000 population, by sex and age

16.1.2 Conflict-related deaths per 100,000 population, by sex, age and cause

16.1.3 Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months

16.1.4 Proportion of population that feel safe walking alone around the area they live

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children

16.2.1 Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month

16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation

16.2.3 Proportion of young women and men aged 18–29 years who experienced sexual violence by age 18

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

16.3.1 Proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms

16.3.2 Unsensenced detainees as a proportion of overall prison population

16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime

16.4.1 Total value of inward and outward illicit financial flows (in current United States dollars)

16.4.2 Proportion of seized, found or surrendered arms whose illicit origin or context has been traced or established by a competent authority in line with international instruments

16.5 Substantially reduce corruption and bribery in all their forms	16.5.1 Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months
	16.5.2 Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months
16.6 Develop effective, accountable and transparent institutions at all levels	16.6.1 Primary government expenditures as a proportion of original approved budget, by sector (or by budget codes or similar)
	16.6.2 Proportion of population satisfied with their last experience of public services
16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	16.7.1 Proportions of positions (by sex, age, persons with disabilities and population groups) in public institutions (national and local legislatures, public service, and judiciary) compared to national distributions
	16.7.2 Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group
16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance	16.8.1 Proportion of members and voting rights of developing countries in international organizations
16.9 By 2030, provide legal identity for all, including birth registration	16.9.1 Proportion of children under 5 years of age whose births have been registered with a civil authority, by age
16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	16.10.1 Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months
	16.10.2 Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information
16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	16.a.1 Existence of independent national human rights institutions in compliance with the Paris Principles
16.b Promote and enforce non-discriminatory laws and policies for sustainable development	16.b.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Finance	
17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	17.1.1 Total government revenue as a proportion of GDP, by source
	17.1.2 Proportion of domestic budget funded by domestic taxes
17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of Gross National Income for Official Development Assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries	17.2.1 Net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' Gross National Income (GNI)
17.3 Mobilize additional financial resources for developing countries from multiple sources	17.3.1 Foreign Direct Investment (FDI), official development assistance and South-South cooperation as a proportion of total domestic budget
	17.3.2 Volume of remittances (in United States dollars) as a proportion of total GDP
17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress	17.4.1 Debt service as a proportion of exports of goods and services
17.5 Adopt and implement investment promotion regimes for least developed countries	17.5.1 Number of countries that adopt and implement investment promotion regimes for least developed countries
Technology	
17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	17.6.1 Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation
	17.6.2 Fixed Internet broadband subscriptions per 100 inhabitants, by speed

17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	17.7.1 Total amount of approved funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies
17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	17.8.1 Proportion of individuals using the Internet
Capacity-building	
17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	17.9.1 Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries
Trade	
17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda	17.10.1 Worldwide weighted tariff-average
17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020	17.11.1 Developing countries' and least developed countries' share of global exports
17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access	17.12.1 Average tariffs faced by developing countries, least developed countries and small island developing States
Systemic issues	
Policy and institutional coherence	
17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence	17.13.1 Macroeconomic Dashboard
17.14 Enhance policy coherence for sustainable development	17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development

17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	17.15.1 Extent of use of country-owned results frameworks and planning tools by providers of development cooperation
Multi-stakeholder partnerships	
17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	17.16.1 Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the sustainable development goals
17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	17.17.1 Amount of United States dollars committed to (a) public-private partnerships and (b) civil society partnerships
Data, monitoring and accountability	
17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	17.18.1 Proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics
	17.18.2 Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics
	17.18.3 Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding
17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries	17.19.1 Dollar value of all resources made available to strengthen statistical capacity in developing countries
	17.19.2 Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration



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