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ISSN: 2788-5836



UNITED NATIONS

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# ECLAC Statistical Briefings

No. 10 | September 2023

## The Sustainable Development Goal indicators: prospective scenarios for 2030

### Contents

1. Constructing the 2030 projections for the SDG indicators.....	2
2. Outlook for the attainment of the 2030 targets in Latin America and the Caribbean as of 2023 .....	4
Bibliography .....	7

The 2030 Agenda for Sustainable Development includes a set of goals and targets to be met by 2030 with the aim of securing people's well-being through sustained economic growth without neglecting the maintenance and conservation of the planet's ecosystems. The international statistical community, led by Member States and supported by the United Nations, has created a global indicator framework for the monitoring and statistical follow-up of the Sustainable Development Goals (SDGs) to facilitate the task of reviewing, adjusting and implementing public policies that can contribute to fulfilment of the commitments accepted. In addition, regional, national and thematic monitoring systems have been devised to supplement the global framework, reflecting particular common challenges with specifications that support decision-makers in their analysis and subsequent actions.

National, regional and international efforts to generate the statistical information necessary for the production of SDG indicators have increased the amount of official data available, making it possible to build dashboards, dissemination platforms and online information systems that facilitate monitoring and analysis.

With less than a decade to go until the deadline set by Member States in 2015, it is vital to consider the results achieved and the way the situation has evolved, concentrating on what still lies ahead so that future scenarios can be envisaged and likely gaps between the forecasts for the selected metrics and the expectations of meeting the 2030 Agenda targets can be identified.

In other words, given current conditions, the speed and direction of the trajectories observed and a set of variables that impact the behaviour of these, it should be possible, statistical information permitting, to forecast the future behaviour and outcomes of the SDG indicators and compare them with the thresholds set by the 2030 targets.

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## 1. Constructing the 2030 projections for the SDG indicators

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Since 2020, ECLAC has used the Forum of the Countries of Latin America and the Caribbean on Sustainable Development as an occasion to present some prospective scenarios for the 2030 goals in the region, which have been included in the annual reports it has presented to the Forum.<sup>1</sup> The information used in these analyses comes from the United Nations Global SDG Indicators Database, with the indicators in turn having been identified by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, whose membership comprises a restricted set of Member States representing the different regions of the world. These undertook the task of producing a global indicator framework with the support of the United Nations to track and monitor progress towards the SDGs.

This set of statistical series has been supplemented by the indicators prioritized by the Statistical Coordination Group for the 2030 Agenda in Latin America and the Caribbean of the Statistical Conference of the Americas of the Economic Commission for Latin America and the Caribbean (ECLAC, 2019) with a view to incorporating additional metrics that reflect some challenges common to the countries of the region in the spirit of the 2030 Agenda.

Although different methodologies have been proposed at the international and national levels to calculate scenarios up to 2030, the decision was taken to develop a three-step approach to obtaining the results sought:

1. Calculation of projections to 2030 of statistical series with enough data available for the proposed methodology to be applied.
2. Identification of gaps by comparing the projections with the thresholds set for 2030.
3. Selection of a format for viewing and presenting the results that facilitates comprehension and analysis.

The models used to project the statistical series for the indicators employed in these exercises depend on the nature of the indicator itself, the availability of secondary information and the quality of the available data. For all statistical series, an autoregressive integrated moving average (ARIMA) model was used and, where data availability permitted, panel data econometric models were constructed on the basis of the literature review and model discrimination using different statistical tests. For series with little information or no significant explanatory variables, the panel regression was omitted and the ARIMA model alone was used for projection. Dickey-Fuller (1979) unit root tests were also performed with this approach to determine the stationarity of the series. Once the test had been performed, a first-order autoregressive model was employed if the series to be projected did not have a unit root and a differenced first-order autoregressive model if the indicator had one or more unit roots.

For series with enough information to make projections using a panel data model, the most appropriate specification was determined and regressions were estimated using ordinary least squares (OLS), random effects and fixed effects models. Subsequently, the Hausman test (Durbin, 1954) was performed to choose between the fixed and random effects models and the test developed by Breusch and Pagan (1979) to decide between the random effects and OLS models.

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<sup>1</sup> See [online] <https://www.cepal.org/en/topics/2030-agenda-sustainable-development/forum-countries-latin-america-and-caribbean-sustainable-development-and-regional-follow-2030-agenda>.

Once the regressions had been estimated, the coefficients obtained were used to generate projections in scenarios with a high probability of the explanatory variables arising and to predict the values of the series for 2030. In the case of these explanatory variables, the projections were made using estimates from international organizations such as the International Monetary Fund, the observed trend, the average change, increasing or decreasing rates of change or the unchanged variable, as best suited the series observed.

A quantitative threshold to be reached by 2030 was set for each series. The thresholds were taken from the 2030 Agenda or, if no explicit threshold was specified there, were based on official documents from United Nations specialized agencies or carried over from different international commitments entered into by Member States.

The base year was set according to the availability of data for 2015: if no data were available for 2015, the data were interpolated, and if interpolation was not possible, the value estimated by the ARIMA model was used. If none of the above options was viable, the closest year after and before 2015 was used as the base year.

$$Gap = \frac{|Threshold_y - Projection_y|}{|Threshold_y - Base_y|}$$

where subscript  $y$  is the variable of interest; threshold means the threshold targeted for 2030; and projection means the estimate of the panel model or ARIMA (in the event that no panel data estimate is available).

Lastly, to facilitate the reading of the results in terms of attainment of the targets set, a traffic light with three colours (green, amber and red) was constructed to compare the gap between the value estimated for 2030 and the target value with the gap that existed in a base year (Bidarbakhtnia, 2017).

Depending on the value obtained with the above formula, the following colours were assigned.

$$\begin{aligned} \text{Green: } & Gap \leq 0.1 \\ \text{Yellow: } & 0.1 < Gap < 1 \\ \text{Red: } & Gap \geq 1 \end{aligned}$$

Green indicates that the threshold has been reached or will be on current trends; yellow that the trend is in the right direction but the pace of progress is too slow for the threshold to be reached, so that an extra effort will be required; and red that the trend is in the wrong direction and so the target will not be met. The series were aggregated at the indicator, target and SDG level by implementing the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) proposal whereby equal weights are used across series for the same indicator and across indicators for the same target (Bidarbakhtnia, 2017).

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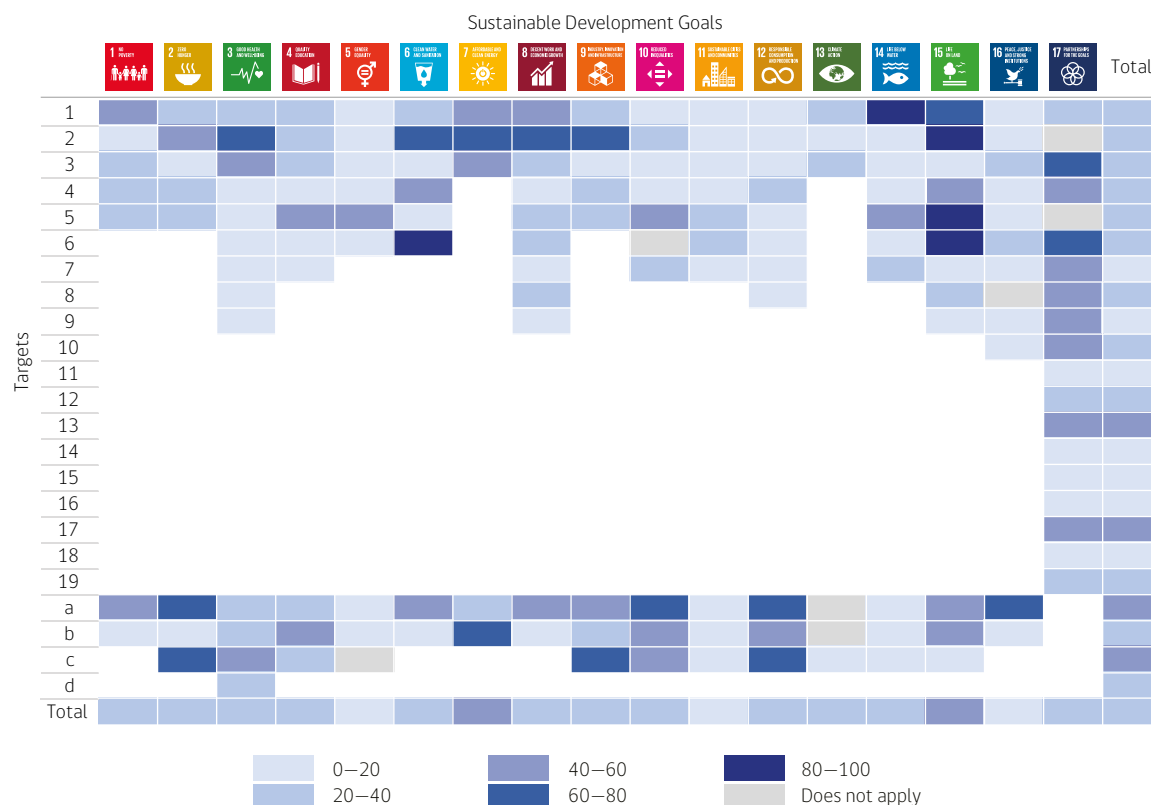
## 2. Outlook for the attainment of the 2030 targets in Latin America and the Caribbean as of 2023

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A lack of data to implement follow-up and monitoring mechanisms for the SDG indicators has been a major challenge in efforts to collect sufficient evidence for decision-making, and has been a particular obstacle to the construction of projections for 2030. Going by the data available as of January 2023, it can be seen that there are still major challenges to be addressed in this area (see figure 1).

» **Figure 1. Latin America and the Caribbean: data available by Sustainable Development Goal (SDG) target relative to total data available in the period 2015–2022**

(Percentages)



Source: United Nations, SDGs in Latin America and the Caribbean: Statistical knowledge management hub, April 2023 [online] <https://agenda2030lac.org/estadisticas/availability-comparable-data-indicators-follow-up-2030-agenda.html?lang=en>.

Note: For each target, the average percentage of annual data available for each indicator in the period is shown. In the case of indicators compiled from more than one statistical series, the series for which data were available for the most years was taken. See the source cited for more information.

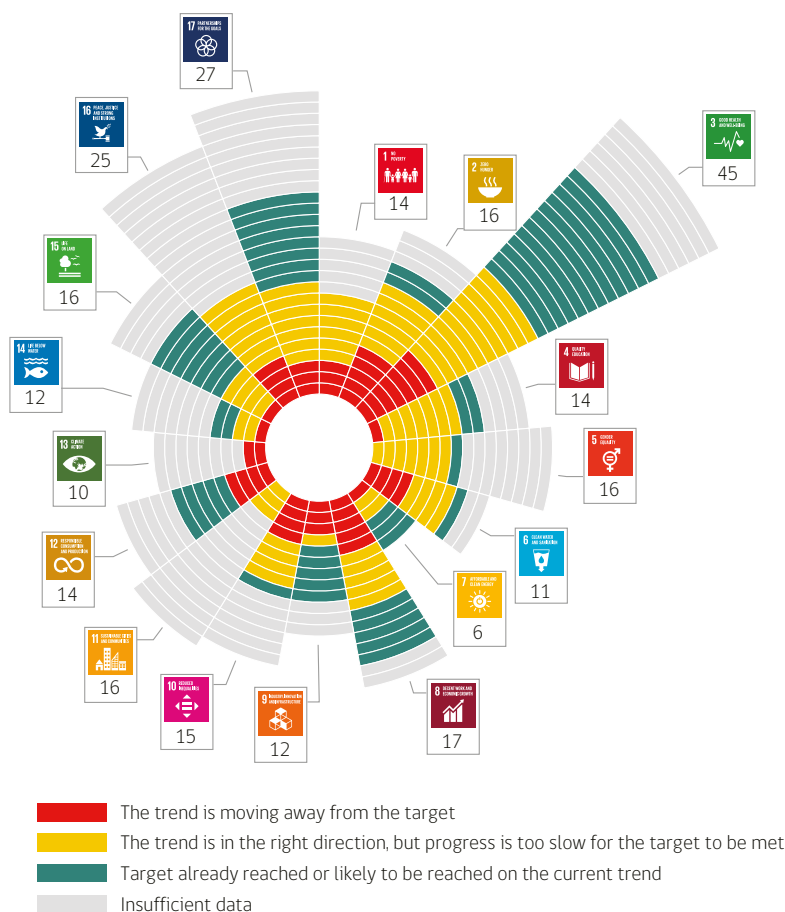
The methodology used to calculate the forward-looking scenarios proposed is even more demanding in terms of the information needed to apply it, so the likelihood of having a complete dashboard is contingent on there being sufficient data. Given the data available in 2023 and the situation as regards the adequacy of the information for applying the proposed traffic light methodology at the regional level, it was possible to project a subset of 172 SDG indicators (see figure 2). The results of this exercise were presented in the report by ECLAC to the Forum of the Countries of Latin America and the Caribbean on Sustainable Development (ECLAC, 2023).

Specifically, enough data were available to achieve the following results:

- » A total of 492 statistical series were analysed.
- » These series relate to 172 indicators out of a total of 260.
- » It was possible to evaluate 126 targets (out of a total of 179) for the likelihood of their being successfully met by 2030.
- » The SDGs with the fewest series studied were Goal 11 (Sustainable cities and communities), with three series; Goal 13 (Climate action), with six series; and Goals 7 (Affordable and clean energy) and 14 (Life below water), with eight series each.

» **Figure 2. Latin America and the Caribbean: Sustainable Development Goal (SDG) indicators by likelihood of the threshold set being reached by 2030**

(Number)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Halfway to 2030 in Latin America and the Caribbean: progress and recommendations for acceleration, 2023 (LC/FDS.6/3)*, Santiago.

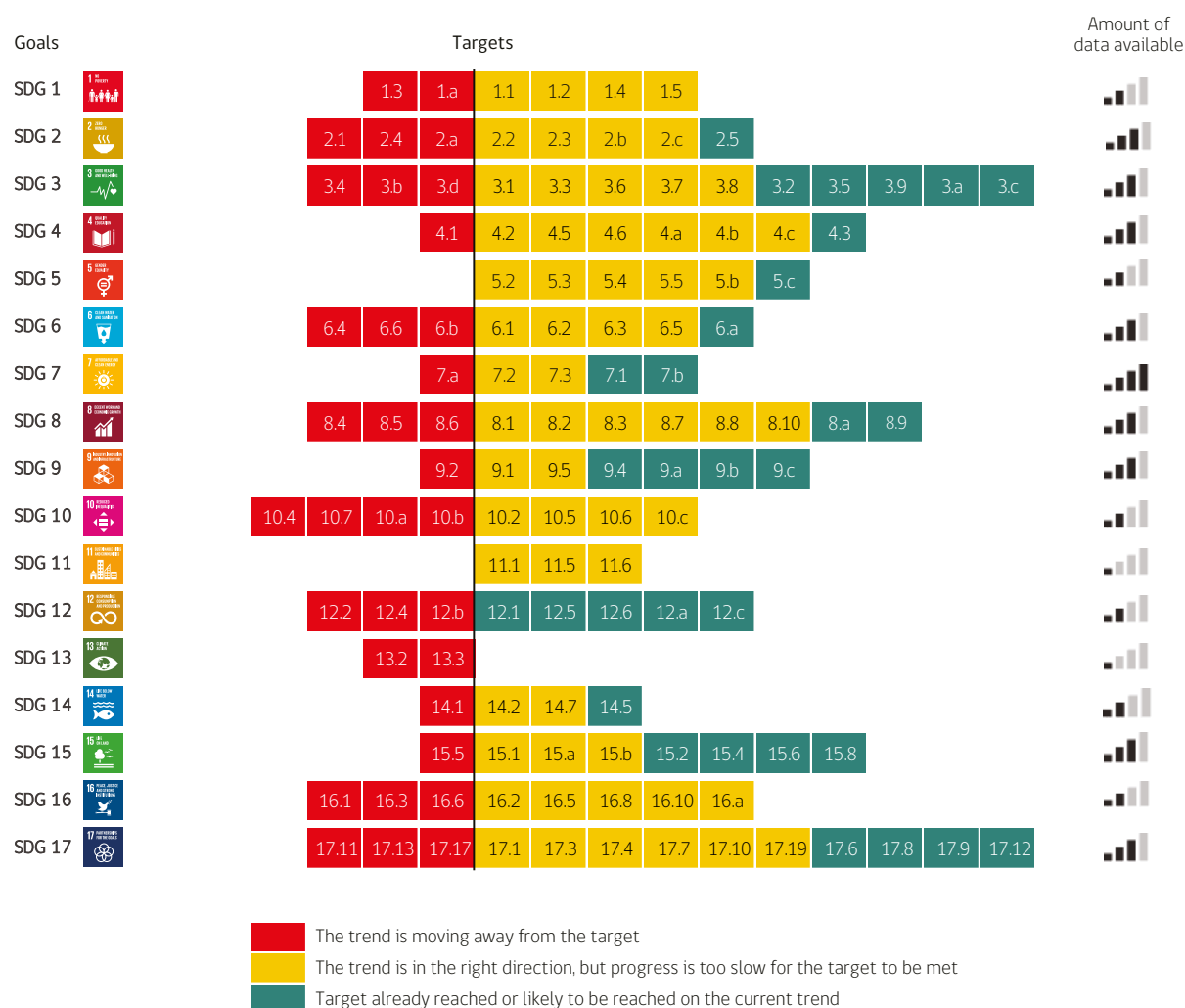
Note: Includes 30 indicators prioritized for the region. Repeated indicators are included in all relevant SDGs.

Thus, once the projections had been calculated and the traffic lights derived by comparing the projected values with the target values represented by the thresholds set for each of the statistical series available, we calculated the traffic lights for each of the indicators analysed, classifying them by means of the proposed colour scheme, which indicates the likelihood of the thresholds being met by 2030.

These results are summarized in an aggregate traffic light for each target, providing a more intuitive overview of achievements and pending challenges in Latin America and the Caribbean with respect to the commitments derived from the 2030 Agenda.

The outlook is positive for 25% of the targets it was possible to project to 2030, while for the remaining 75% policy actions are needed to support and accelerate current progress in cases where this is in the right direction but too slow to reach the thresholds set (48% of targets) or to reverse the trend in cases where the situation is actually expected to worsen relative to the 2015 starting point (27% of targets) (see figure 3).

» Figure 3. Latin America and the Caribbean: Sustainable Development Goal (SDG) targets by likelihood of their being met by 2030 and proportion of indicators projected per Goal



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Halfway to 2030 in Latin America and the Caribbean: progress and recommendations for acceleration*, 2023 (LC/FDS.6/3), Santiago.

Apart from analysing the results, it is important to stress the usefulness of these exercises in providing a window on possible future situations so that action can be taken to consolidate processes that are on track and, most importantly, to implement corrective measures in time to help achieve the goals of the 2030 Agenda.

However, a key factor is the availability of quality data and statistical information so that continuous evaluation and monitoring mechanisms can be developed in support of decision-making. Members of the international statistical system as a whole are continuing their efforts to strengthen national statistical capabilities with a view to increasing the production of official statistics, and in particular the primary information needed to calculate the SDG indicators. The countries of the region have shown a sustained commitment to the 2030 Agenda when it comes to the establishment of mechanisms and statistical monitoring of the SDGs, working to construct global indicators at the national level, proposing new metrics that are consistent with the 2030 Agenda but more relevant to their national development plans and promoting horizontal cooperation and dissemination of good practices in data production and efforts to improve information sources, not only by consolidating traditional statistical data collection operations but also by exploring and incorporating new data sources and information generation mechanisms such as social networks, satellite imagery and geospatial data.

New technologies and the Internet of things are driving a paradigm shift in the design of statistical processes, especially in the field of official statistics, and mark an important turning point in official data production for the calculation of the SDG indicators to measure progress towards the goals of the 2030 Agenda for Sustainable Development committed to in 2015.


Only with more and better data for the 2030 Agenda will it be possible to produce relevant prospective analyses based on robust methods and quality information so that the challenges ahead can be identified. The type of exercise described here is a practice that should be promoted, with Member States encouraged to choose approaches suited to their national contexts that can provide more monitoring mechanisms to help governments take the necessary actions and achieve the SDGs.

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This bimonthly publication is produced by the Statistics Division of the Economic Commission for Latin America and the Caribbean (ECLAC) under the general coordination of Rolando Ocampo, Director of the Division. This number was prepared by Daniel Taccari.

The views expressed in this document, a translation of a Spanish original which did not undergo formal editing, are those of the authors and do not necessarily reflect the views of the Organization or the countries it represents.

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S.23-00631



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