

# Health and environment scorecard:

## Summary score – methods and results



### Introduction

The Health and environment scorecards provide key data on eight environmental health topics, across exposure, health impacts and policies. The summary score combines the values of scorecard indicators with sufficient data availability into a single overall measure.

### Methods

The development of the summary score largely follows the steps of the Organisation for Economic Co-operation and Development (OECD) for constructing composite indicators [1], although the summary score is not intended to serve as a full composite indicator:

- *The theoretical framework of the score* is based on a measurement concept for “environmental health”, defined by three dimensions: (1) level of exposure, (2) burden of disease attributable to environmental risk factors, and (3) presence or population coverage of policies that promote environmental health (laws, strategies, conventions, etc.).
- *The choice of indicators for the scorecards and the summary score* is based on their significance and availability. The source of data includes mostly WHO or other UN datasets [2]. The summary score is calculated from all indicators for which at least 60% of WHO member states have available data (Fig1). Given the correlations between exposure, health impact, and policy indicators, separate scores for each dimension were calculated in addition to the overall summary score (Spreadsheet 1).
- *Missing data* - Only countries with less than five missing indicators were included. Sensitivity analyses were performed by (1) imputing the mean value by WHO region and income group for numerical exposure and health impact indicators, and assuming a “no” for missing categorical policy indicators; and (2) imputing the mean value by WHO region and income group for all missing indicators.
- *Indicator normalization and calculation of score* - Scorecard indicator values were converted using the min-max method [1] to obtain normalized indicator with values between 0 and 1. The summary scores were calculated by first averaging indicators for each exposure, health impact, and policy category by environmental health topic of the scorecard using equal weights, then averaging the obtained values within each environmental health topic, and finally averaging those values across environmental health topics. If an indicator has different sub-indicators, such as the climate change policy indicator “Commitment to COP26 Health Programme,” the sub-indicators were equally weighted. When scorecard indicators were displayed in various forms (such as the first exposure indicator in air pollution), the source data were used (e.g., the amount of PM<sub>2.5</sub> in µg/m<sup>3</sup>). For the forest area change indicator, the percentage of forest change was used rather than the total amount of forest change, as the latter is dependent on the size of the country. The resulting summary score was transformed so scores range between 0 and 100. A higher score indicates a more favourable result.

### Results

The summary score was calculated for 183 WHO Member States from 25 indicators (Fig.1). The mean summary score was 51 and values ranged between 25 and 81. Results are shown in Fig. 2 by WHO Region and listed in Spreadsheet 1.

### Conclusions

- The primary goal of the summary score as part of the Health and environment scorecard is to condense various environmental health indicators into a single measure.
- The scores can be used to track changes in exposures, health impacts and policy implementation and to highlight information gaps.
- The Health and environment scorecards assist countries in situation assessment and priority setting.
- Every country can step up its efforts to reduce environmental determinants of health and to tackle the environmental planetary crisis.
- Large differences in environmental exposures, resulting health impacts and implemented policies exist between countries, also influenced by economic resources.

### References

1. Handbook on Constructing Composite Indicators: Methodology and User Guide. Paris: The Organization for Economic Cooperation and Development (OECD); 2008. Available: [https://www.oecd.org/en/publications/handbook-on-constructing-composite-indicators-methodology-and-user-guide\\_9789264043466-en.html](https://www.oecd.org/en/publications/handbook-on-constructing-composite-indicators-methodology-and-user-guide_9789264043466-en.html)
2. WHO. Health and Environment Country Scorecards: Reading guide. 2025 [cited 15 Apr 2025]. Available: <https://www.who.int/publications/m/item/health-and-environment-scorecards-reading-guide>

The scorecards are based on already published data (see scorecard reference section). They are a tool to measure and track the progress with respect to selected indicators. The summary scores should not be used to rank countries against one another, not only because of missing data for some countries, but more importantly due to the significant differences in national contexts—such as economic conditions or geographic characteristics—which likely have a substantial impact on the scores.

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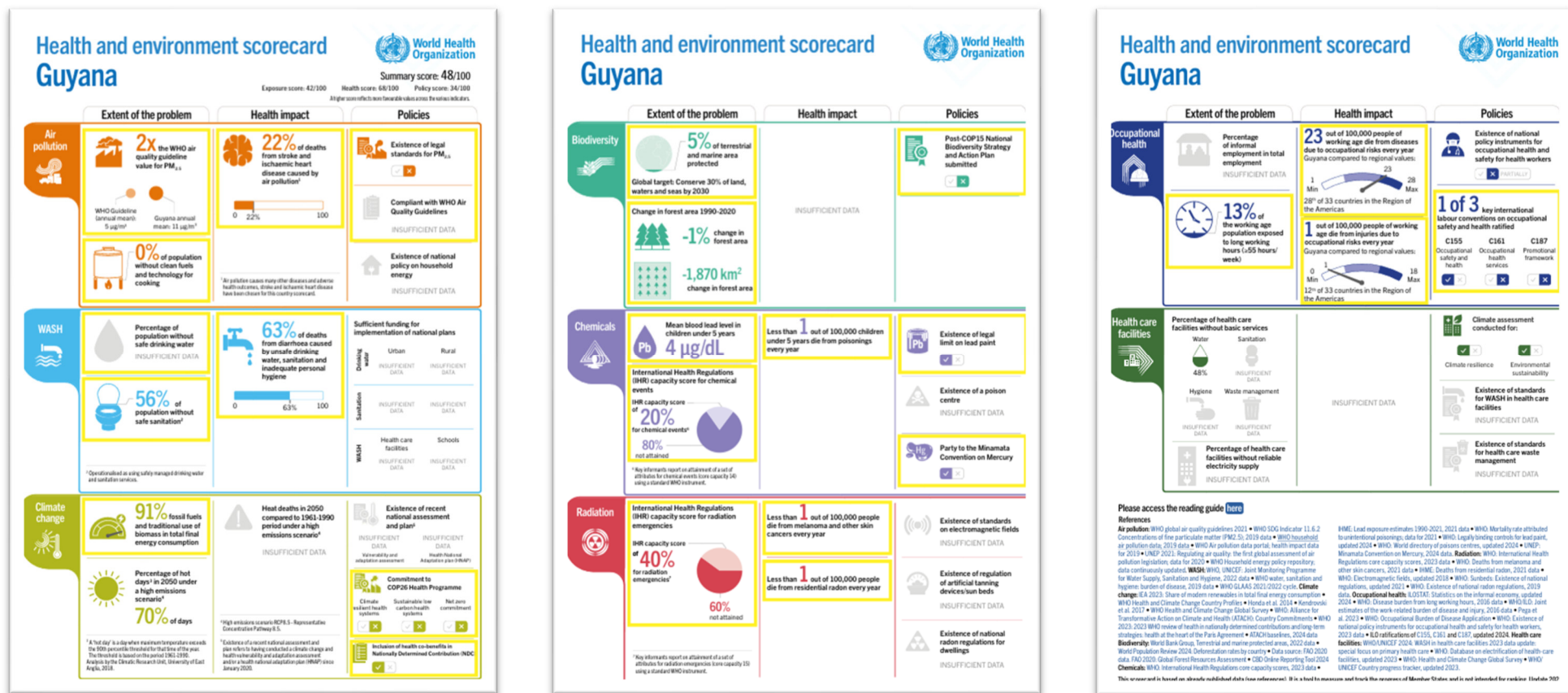
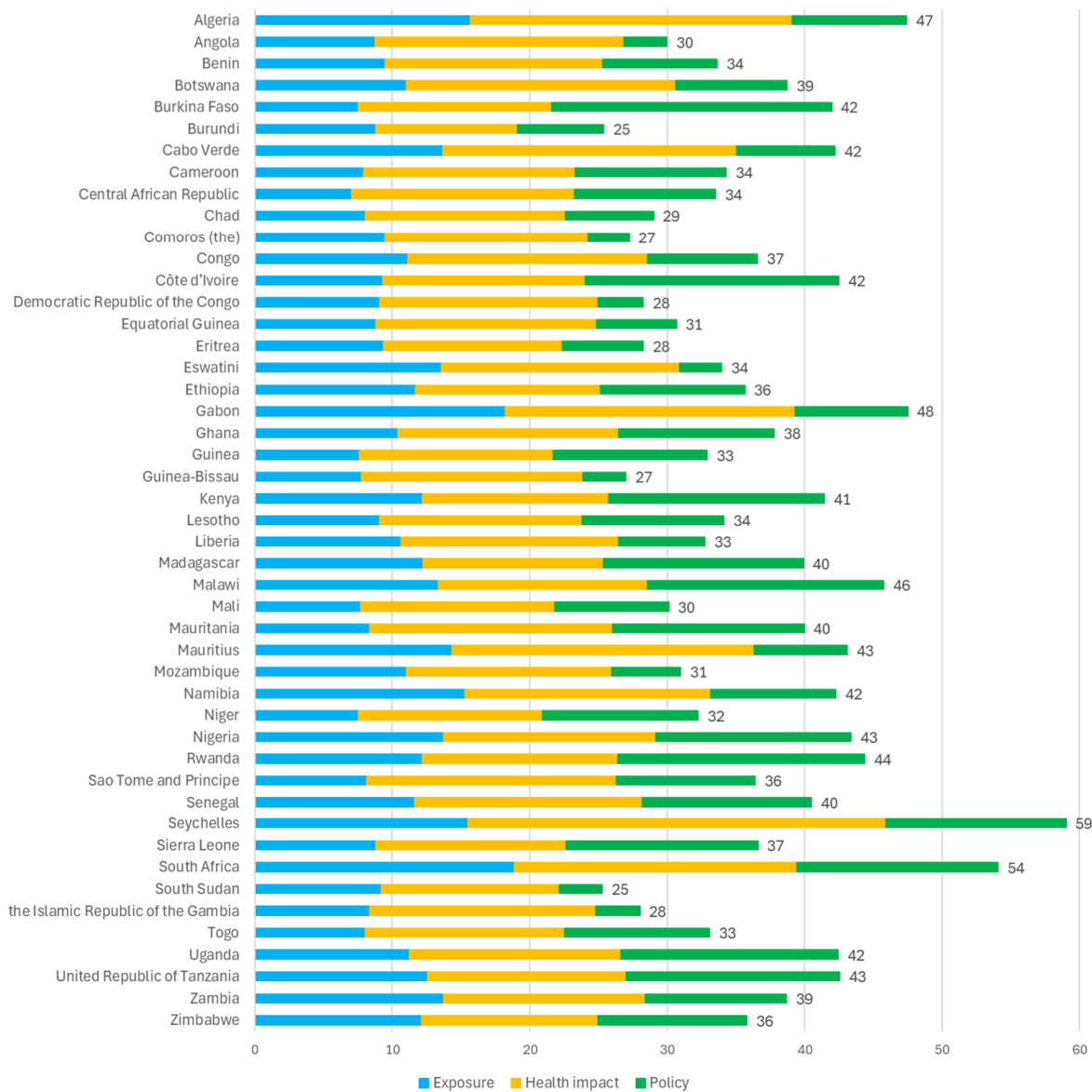


Fig. 1: Indicators for calculating the summary score –indicators with a yellow frame are used for calculating the summary score

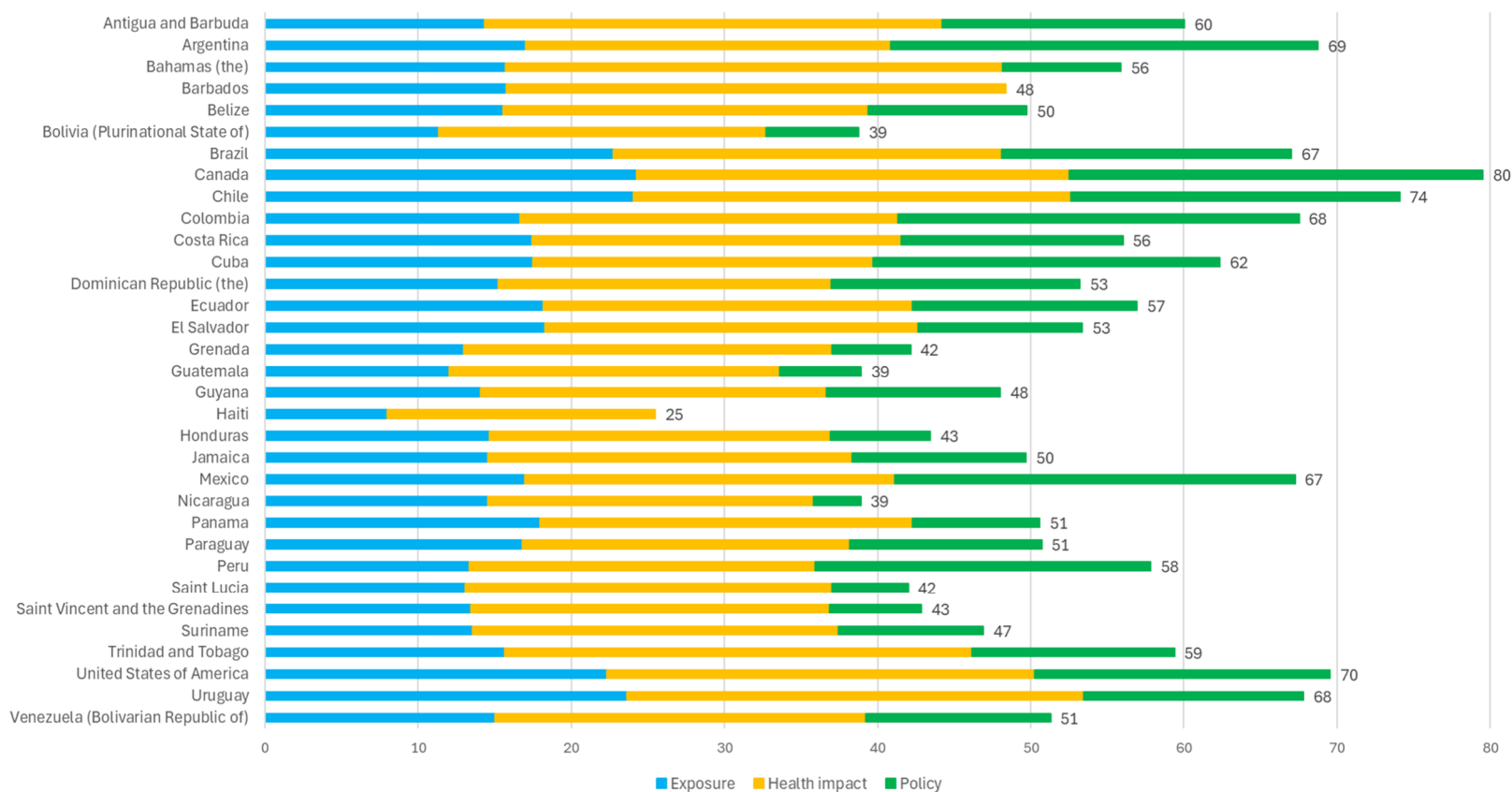
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## WHO African Region (AFRO)

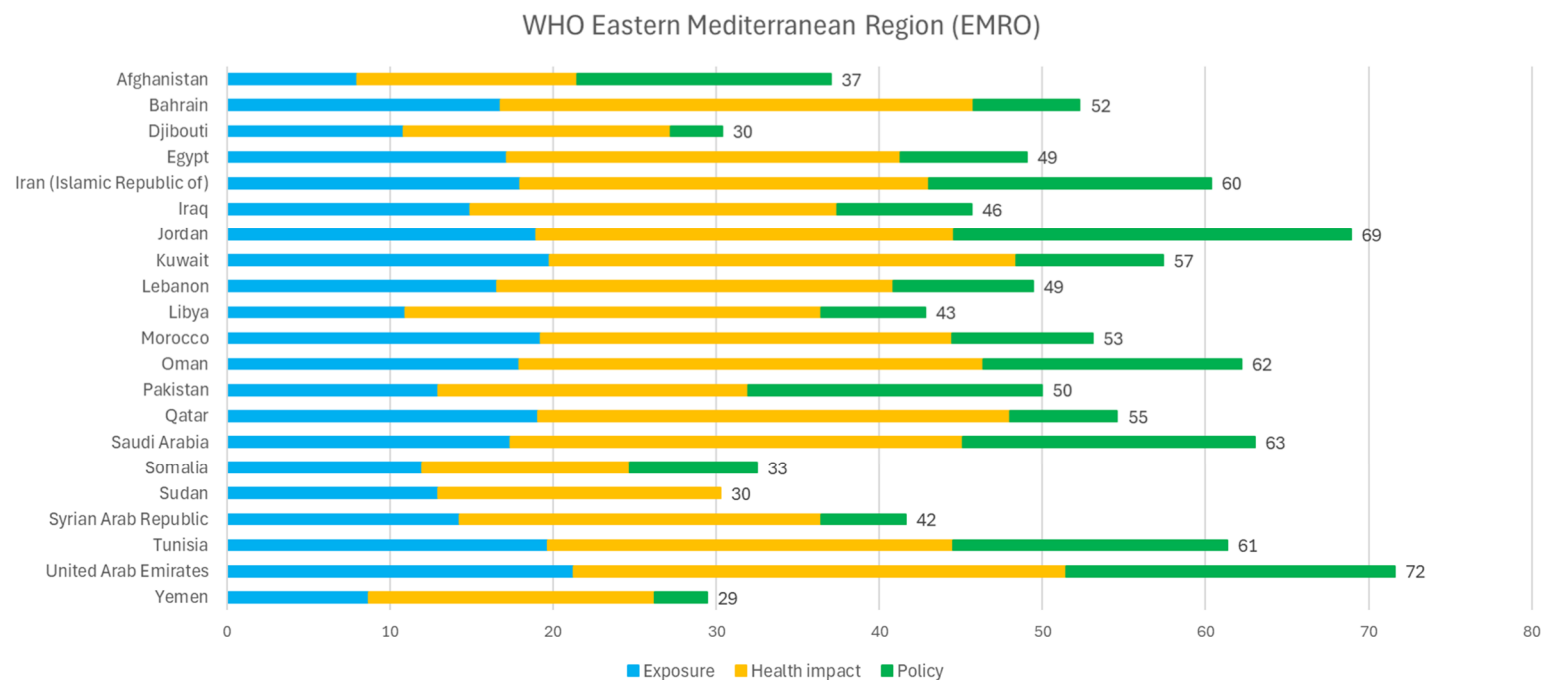


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### WHO Region of the Americas (PAHO)

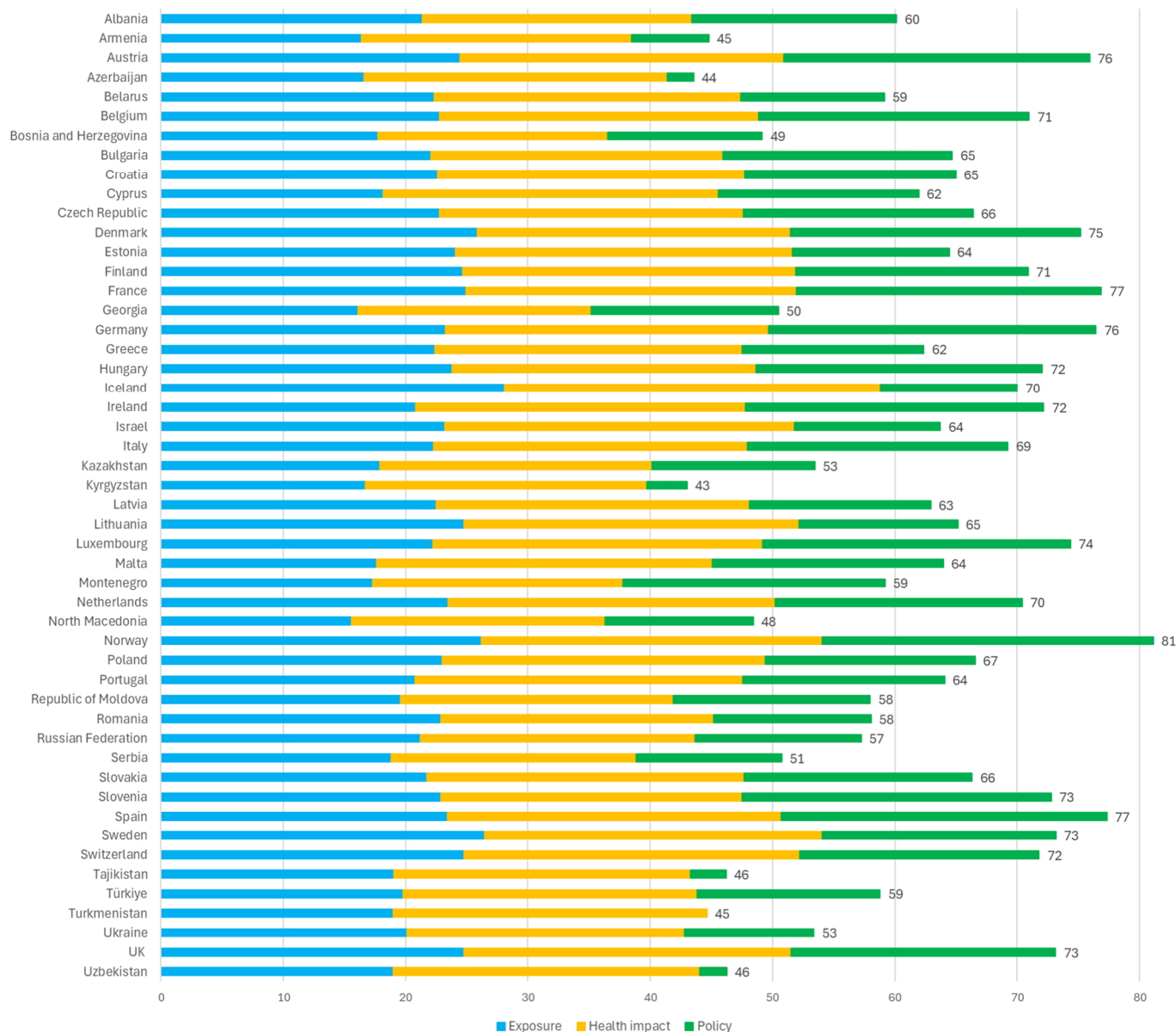


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# WHO European Region (EURO)



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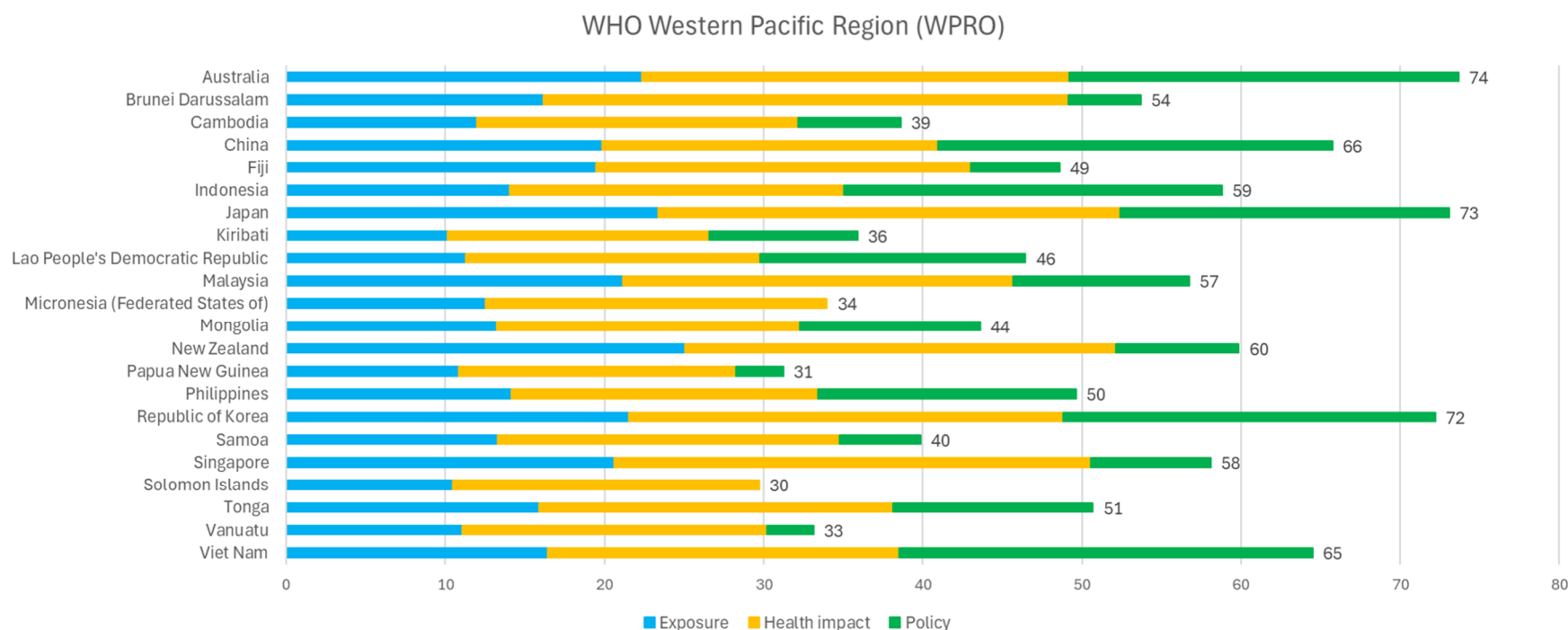
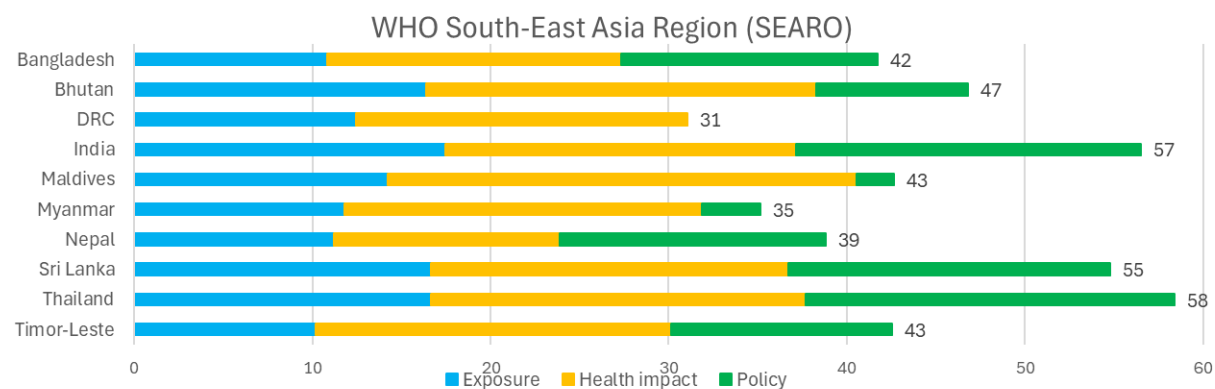


Fig. 2: Summary score by country by WHO Region. The number to the right of the bars are the total value of the summary score. The different colours of the bars indicate the proportional contribution of the exposure, health impact and policy indicators. DRC: Democratic People's Republic of Korea, UK: United Kingdom of Great Britain and Northern Ireland (the).

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