International Labour Organization

Southern Asia

The Employment - Environment - Climate Nexus

Employment and environmental sustainability factsheet

November 2022

Key figures

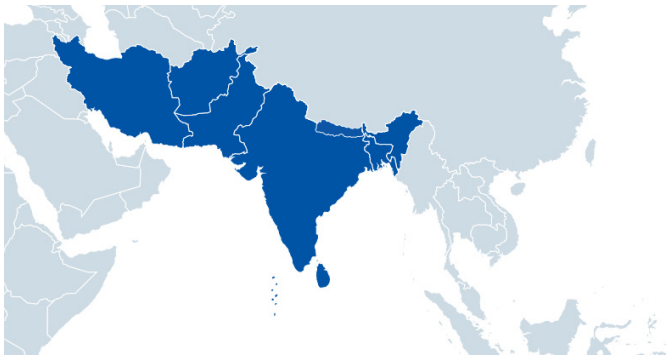
The Employment-Environment-Climate Nexus Factsheets are a series produced for countries and subregions in the Asia-Pacific region. This Factsheet provides key features of labour market and environmental sustainability performance in the subregion of Southern Asia, as well as vulnerability to climate change and sectors with green jobs potential. Key figures from the brief are as followed:

- Southern Asia has a population of 1,962 million people, of which 23.3 per cent are below 14 years old.
- Of 636 million employed in the region, approximately 41.3 per cent work in agriculture, 24.4 per cent in industry and 34.3 per cent in services.
- The Environmental Performance Index (EPI) assesses countries on 40 different performance indicators and ranks them according to their national efforts towards environmental health, to enhance ecosystem vitality and mitigate climate change. The median score of countries in Southern Asia is around 31.4 points on a scale of 0-100 (where 0 is worst and 100 best performing).
- The level of PM2.5 (atmospheric particulate matter with a diameter of less than 2.5 micrometres) emissions for Southern Asia is estimated at 53.1 (micrograms per cubic metre) in 2017, compared to an unweighted average of 27.6 in Asia-Pacific.
- Around 8.5 per cent of total land area in the region were territorial protected areas.
- The Notre Dame Global Adaptation Index considers vulnerability to climate change and related global challenges as well as resiliency and preparedness. Looking only at the vulnerability components of the index, the median score for countries in Southern Asia is around 0.52 (where 0 is very vulnerable and 1 is least vulnerable).
- Renewable energy as a share of total energy consumption was estimated at around 31.1 per cent in 2018. Renewable energy sources produced 383,229 GWh in 2020, following annual average growth of 6.6 per cent since 2000.
- Hydropower accounted for the highest share of total renewable energy generation in 2020, accounting for 62.4 per cent of total renewable energy generation in the region.
- Around 1,011 thousand people in Southern Asia were employed in the renewable energy sector in 2020. Hydropower accounted for the highest share, at 41.5 per cent.

▶ Regional overview

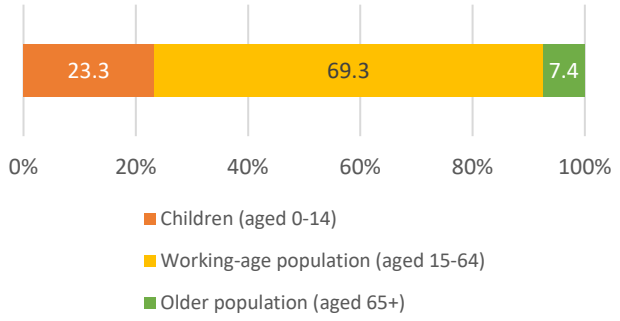
Southern Asia† is a region of an estimated 6,361,374 km² (Figure 1).[1] Gross National Income (GNI) is estimated at US$ 1,999 per capita in 2021.[2] Gross Domestic Product (GDP) was estimated to have grown 7.7 per cent in 2021.[3] This compares to 4.8 per annum over the last decade (2011-2021).

▶ **Figure 1. Map of Southern Asia**



The population was estimated at 1,962 million in 2021, representing annual average population growth of 1.2 per cent per annum over the last decade.[4] In 2021, a total of 37.1 per cent of the population lived in urban areas.[5]

▶ **Figure 2. Composition of total population by age-group, 2021 (percentage)**



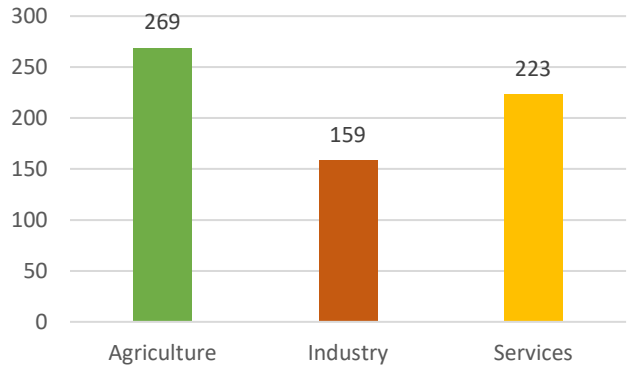
Source: World Bank staff estimates based on age sex distributions of United Nations Population Division's World Population Prospects: 2019 Revision. Accessed via World Development Indicators Database [06 August 2022]

▶ Labour market

The total labour force (aged 15+) was estimated at 677 million in 2021, corresponding to a labour force participation rate of 47.3 per cent.[6] Around 22.2 per cent of the total labour force were women. Women had a labour force participation rate of 21.6 per cent, compared to 71.6 per cent for men.

Total employment (aged 15+) was estimated at 636 million in 2021, representing an employment-to-population ratio of 44.5 per cent.[7] By broad sector group, agriculture accounted for 41.3 per cent of total employment, industry a further 24.4 per cent and services, 34.3 per cent in 2019 (Figure 3).

▶ **Figure 3. Composition of total employment by broad sector group, 2019 (million)**



Source: International Labour Organization, ILOSTAT database. Data as of January 2021. Accessed via World Development Indicators Database [06 August 2022]

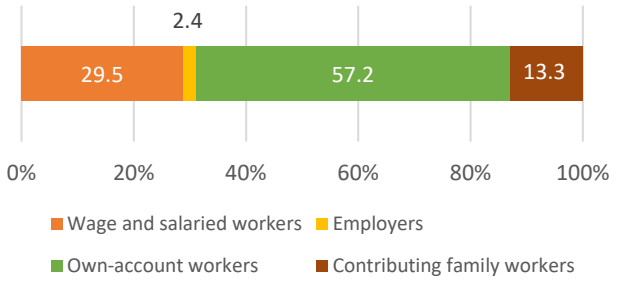
There were an estimated 41 million unemployed persons in the region in 2021, corresponding to a total unemployment rate of 6.0 per cent.[8] The unemployment rate for women was estimated at 5.8 per cent, compared to men at 6.1 per cent. Youth were estimated to exhibit an unemployment rate of around 22.3 per cent.

Having a job does not, however, guarantee quality employment. A total of 29.5 per cent of the total employed population were in wage and salaried employment in 2019.[9] Wage and salaried employment is associated with more higher degrees of job security, more regular incomes as well as greater access and eligibility to social protection

† Southern Asia in this context includes: Afghanistan, Bangladesh, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka.

as well as coverage by employment regulation, than those in self-employment. Accordingly, the remaining 70.5 per cent of total employment, who are classified as being self-employed, encompass employers, own-account workers and contributing family workers (Figure 4).[10]

▶ Figure 4. Composition of total employment by status in employment, 2019 (percentage)



Source: International Labour Organization, ILOSTAT database. Modelled estimates. Data as of January 2021.

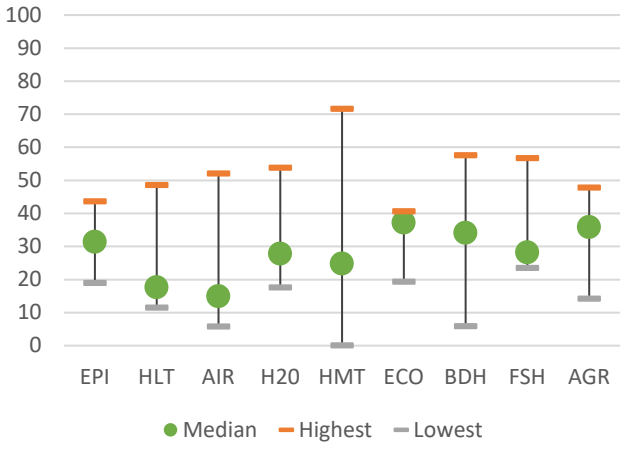
▶ Environment and vulnerability to climate change

The Environmental Performance Index (EPI) assesses countries on 40 different performance indicators and ranks them according to their national efforts towards environmental health, to enhance ecosystem vitality and mitigate climate change.[11]

According to the assessment criteria, the median score of countries in Southern Asia is around 31.4 points on a scale of 0-100 (where 0 is worst and 100 best performing). For reference, in 2022, the highest-ranking countries were in Europe, including Denmark and the United Kingdom, with respective scores of 77.9 and 77.7. In Asia and the Pacific, the scores range from highest ranking in Australia (60.1) to lowest ranking in India (18.9).

Figure 5 shows the median score for selection of indicators for Southern Asia as well as the range of scores (highest and lowest) for countries in the region with available data, thereby allowing a gauge of how countries perform within the region. While the range for the region is considerable, it tends to be more towards the lower end of the scale for all the indicators displayed in the Figure.

▶ Figure 5. Environmental performance index and selected indicators, countries in Southern Asia, median and range (highest and lowest), 2022

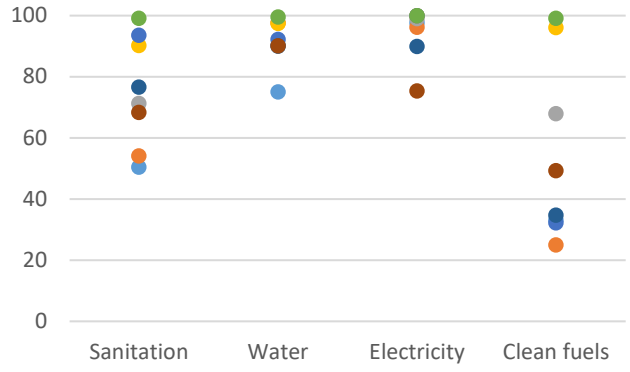


Note: EPI = Environmental Protection Index; HLT = Environmental health; AIR = Air quality; H20 = Sanitation and drinking water; HMT = Heavy metals; ECO = Ecosystem vitality; BDH = Biodiversity and habitat; FSH = Fisheries; AGR = Agriculture. Score 0 (worst) – 100 (best). Asia-Pacific refers to ILO member states in the region with available data (n = 33). Source: EPI Score 2022. Available at: https://epi.yale.edu/downloads [06 August 2022]

Action to improve environmental health, ecosystem vitality, climate change and resilience to weather disasters all have the potential to provide job creation, green economy growth and innovation in the region.

Figure 6 shows the percentage of the population in different countries within Southern Asia, and their access to (i) at least basic sanitation services in 2020[12]; (ii) at least basic drinking water services, (iii) access to electricity; and (iv) access to clean fuels and technologies for cooking.[13] It shows that lower income countries such as Afghanistan, Bangladesh and Nepal tend to feature with the lowest percentages of the population with access to the different indicators.

▶ **Figure 6. Access to selected basic services, 2020*, countries in Southern Asia (percentage)**



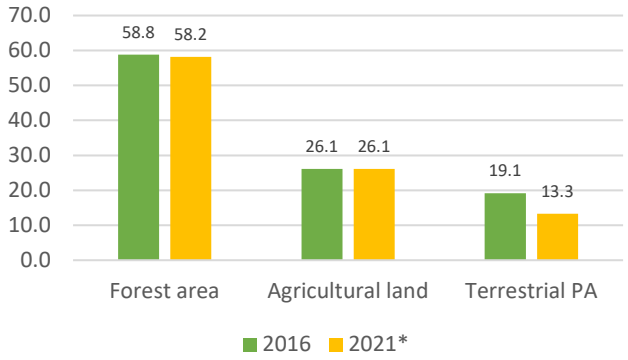
*Notes: *Latest available datapoint from 2018-2020. Sanitation = people using at least basic sanitation services (% of population); Water = people using at least basic drinking water services (% of population); Electricity = access to electricity (% of population); Clean fuels = access to clean fuels and technologies for cooking (% of population)*
Sources: WHO UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (washdata.org); World Bank Global Electrification Database from Tracking SDG 7: The Energy Progress Report led jointly by the custodian agencies: the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the United Nations Statistics Division (UNSD), the World Bank and the World Health Organization (WHO); WHO Global Health Observatory; Accessed via World Development Indicators [06 August 2022].

Around 15.4 per cent of Southern Asia's land area is forest area.[14] Forest area in this context refers to land under natural or planted stands of trees of at least 5 meters in situ, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens. Agricultural land in this context refers to the share of land area that is arable, under permanent crops, and under permanent pastures.[15]

Protected areas are a crucial means of environmental preservation and conservation. In Southern Asia, around 8.5 per cent of total land area were protected areas in 2021 (Figure 7).[16] Terrestrial protected areas in this context are totally or partially protected areas of at least 1,000 hectares that are designated by national authorities as scientific reserves with limited public access, national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes, and areas managed mainly for sustainable use.

There are also marine protected areas, however, it is not possible to present regional totals for this measure.[17] Marine protected areas in this context refer to areas of intertidal or subtidal terrain--and overlying water and associated flora and fauna and historical and cultural features--that have been reserved by law or other effective means to protect part or all of the enclosed environment.

▶ **Figure 7. Forest area, agricultural land, terrestrial protection areas, 2016 and 2021 (percentage)**



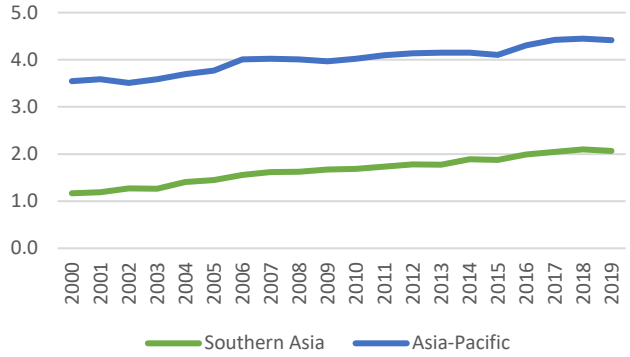
*Note: PA = protected area. Terrestrial protected areas (% of total land area); Forest area (% of land area); Agricultural land (% of land area). *2018-2021 latest available datapoint.*

Source: World Database on Protected Areas (WDPA) accessed via World Development Indicators.

There will be greater prospects for employment opportunities if there is commitment to transition to a low carbon and resource-efficient economy, such as jobs in resource management and environmental services.

The carbon dioxide (CO2) emission levels for Southern Asia are estimated at around 3,413,040 kt in 2019.[18] This marks a change from 1,413,700 kt in 2000, representing annual average growth in CO2 emissions of 4.7 per cent from 2000-2019. While total CO2 emissions are largely related to the size of the economy, a per-capita metric serves as a relative measure for comparing countries (Figure 8). In 2019, the unweighted average across Asia-Pacific countries was estimated at 4.4 metric tonnes per capita. In Southern Asia it was estimated at 2.1 metric tonnes per capita for the same year.

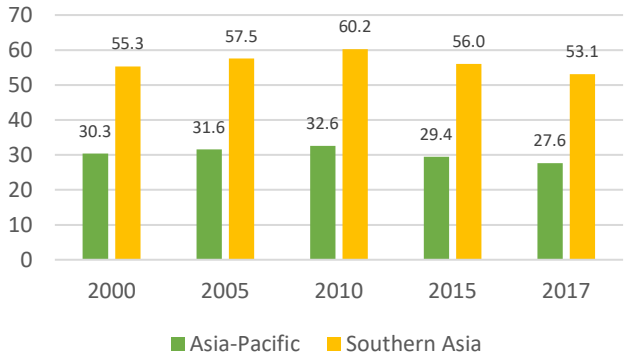
▶ **Figure 8. CO2 emissions, 2000-2019, Southern Asia and Asia-Pacific (metric tonnes per capita)**



Note: Southern Asia and Asia-Pacific are unweighted averages. Source: Climate Watch. 2020. GHG Emissions. Washington, DC: World Resources Institute. Accessed via World Development Indicators [06 August 2022].

The level of PM2.5 (atmospheric particulate matter with a diameter of less than 2.5 micrometres) emissions for Southern Asia is estimated at 53.1 (micrograms per cubic metre) in 2017, compared to 55.3 in 2000 (Figure 9).[19] It also compares to an unweighted average across Asia-Pacific countries of 27.6 in 2017. Notably, the World Health Organization's Air Quality Guideline threshold level emission is stated at 10 micrograms per cubic metre. The percentage of the population exposed to ambient concentrations of PM2.5 that exceed the WHO guideline (the lower end of the range of concentrations over which adverse health effects due to PM2.5 exposure have been observed) is estimated at 80.7 per cent in 2017, compared to 100.0 per cent in 2000.

▶ **Figure 9. Air quality PM 2.5 emissions, 2000-2017, Southern Asia and Asia-Pacific (micrograms per cubic metre)**

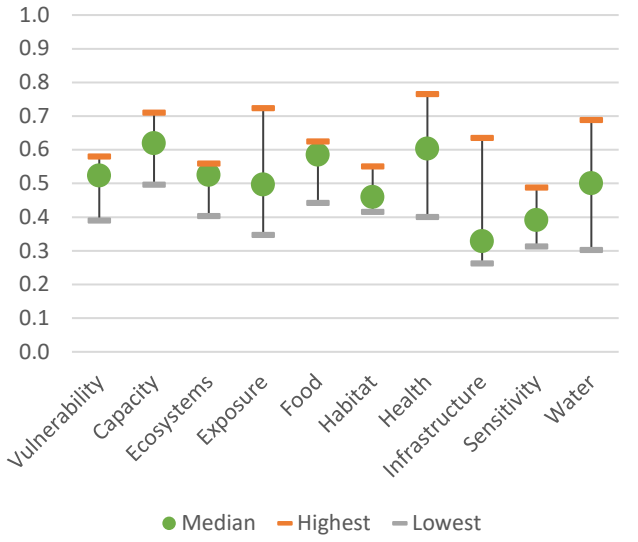


Note: Southern Asia and Asia-Pacific are unweighted averages. Source: Brauer, M. et al. 2017, for the Global Burden of Disease Study 2017. Accessed via World Development Indicators [06 August 2022].

The Notre Dame Global Adaptation Index considers vulnerability to climate change and related global challenges as well as resiliency and preparedness.[20] Looking only at the vulnerability components of the index, the median score for countries in Southern Asia is around 0.52 (where 0 is very vulnerable and 1 is least vulnerable),

Figure 10 provides an overview of the risk scores for countries in the region with respect to different composite indicators of the vulnerability component of the index. For instance, it shows that for ecosystems – i.e. that which provides the natural capital upon which human society builds its economy and social system and include natural resources that are at the foundation of all almost all product value chains – Southern Asia has a score of 0.53, relative to highs (least vulnerable) in the region of 0.56 and lows of 0.40. Shifting geoclimes due to changed temperature and precipitation cause stress within ecosystems unable to respond as quickly as these shifts require.[21]

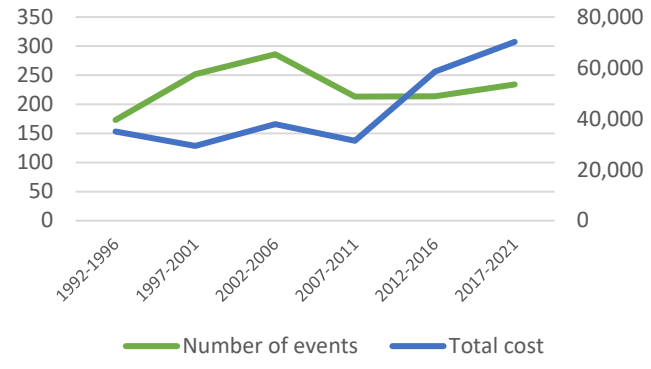
Figure 10. Notre Dame Global Adaptation Index, Vulnerability and composite indicators, 2020, Southern Asia, median and range (highest and lowest), index score



Note: Southern Asia is an unweighted average. Source: ND-GAIN Country Index. Available at: https://gain.nd.edu [06 August 2022]

Over the 2017-2021 period, there were a total of 234 natural disasters in Southern Asia (natural disasters in this context includes floods, droughts, epidemics, storms, landslides, earthquakes and wildfires).[22] This compares to 173 natural disasters over the 1992-1996 5-year period. There are substantial costs to these events, which, for the 2017-2021 period, amounted to US$ 70,240 million.

Figure 11. Number of natural disasters (LHS) and total cost of natural disasters (RHS – US$ million) per 5-year period, 1992-2021

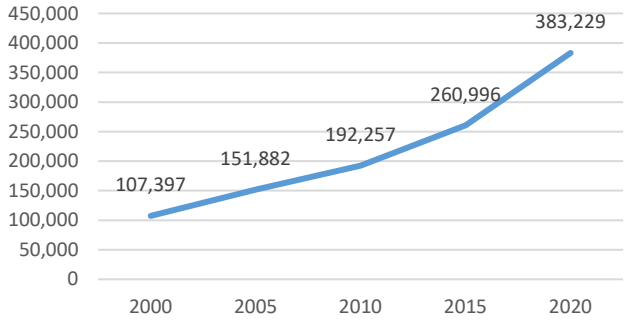


Source: ILO compilation using EM-DAT. Available at: https://www.emdat.be [06 August 2022]

Sectors with green jobs potential

In 2018, the mean value for countries in the region, for renewable energy as a share of total energy consumption was estimated at around 31.1 per cent. This compares to 44.7 per cent in 2000.[23] Renewable energy sources produced 383,229 GWh in 2020 (Figure 12).[24] With total renewable energy sources producing 107,397 GWh in 2000, it represents annual average growth of 6.6 per cent between 2000-2020.

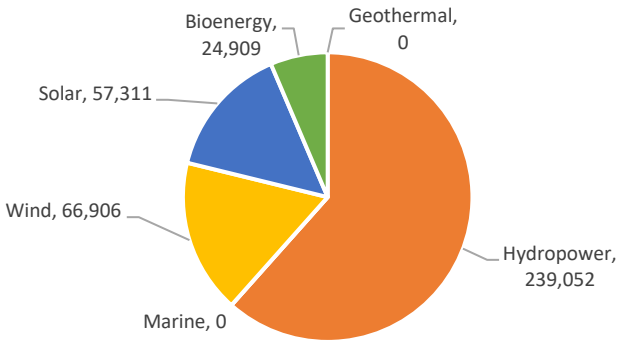
Figure 12. Total renewable energy generation (GWh), 2000-2020



Source: ILO compilation using IRENA Renewable Energy Statistics 2022

Hydropower accounted for the highest share of total renewable energy generation in 2020, at 239,052 GWh, equivalent to 62.4 per cent of total renewable energy generation in the region (Figure 13).[25]

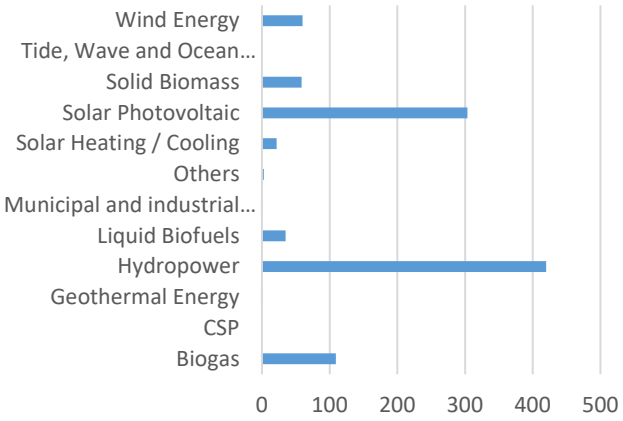
Figure 13. Renewable energy generation (GWh) by technology, 2020



Source: ILO compilation using IRENA Renewable Energy Statistics 2022

According to estimates by the International Renewable Energy Agency (IRENA), 1,011 thousand people in Southern Asia were employed in the renewable energy sector in 2020. Hydropower accounted for the highest share (41.5 per cent) of total employment in renewable energy in the region (Figure 14).[26]

▶ Figure 14. Renewable energy employment, by energy source, 2020 (thousands)



Note: Data are principally for 2019-2020, with dates varying by country and technology, including some instances where only earlier information is available. The data for hydropower include direct employment only; the data for other technologies include both direct and indirect employment where possible.
Source: IRENA jobs database 2021.

Better data collection relating to the green economy and the environmental sector would be valuable for policymakers in Southern Asia and Asia-Pacific countries. Better data on green and decent jobs is particularly needed to assess the impact of climate change and climate-related policies on social inclusion. Without better data, it will be difficult to determine what policy changes are needed to assure a just transition to environmental sustainability and to monitor progress going forward.

References and technical information

[1] Source: Food and Agriculture Organization, electronic files and web site. Accessed via World Development Indicators [06 August 2022]
[2] Source: World Bank national accounts data, and OECD National Accounts data files. Accessed via World Development Indicators [06 August 2022]
[3] Source: International Monetary Fund (IMF) World Economic Outlook, April 2022 [25 August 2022]
[4] Source: (1) United Nations Population Division. World Population Prospects: 2019 Revision. (2) Census reports and other statistical publications from national statistical offices, (3) Eurostat: Demographic Statistics, (4) United Nations Statistical Division. Population and Vital Statistics Report (various years), (5) U.S. Census Bureau: International Database, and (6) Secretariat of the Pacific Community: Statistics and Demography Programme. Accessed via World Development Indicators [06 August 2022]
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[6] Source: Derived using data from International Labour Organization, ILOSTAT database. The data was retrieved on February 8, 2022. Accessed via World Development Indicators [06 August 2022]
[7] Source: International Labour Organization, ILOSTAT database. Data as of June 2022. Accessed via World Development Indicators [06 August 2022]
[8] Source: International Labour Organization, ILOSTAT database. Data as of June 2022. Accessed via World Development Indicators [06 August 2022]
[9] Source: International Labour Organization, ILOSTAT database. Data as of January 2021. Accessed via World Development Indicators [06 August 2022]
[10] Source: International Labour Organization, ILOSTAT database. Data as of January 2021. Accessed via World Development Indicators [06 August 2022]
[11] The 2022 Environmental Performance Index (EPI) provides a data-driven summary of the state of sustainability around the world. Using 40 performance indicators across 11 issue categories, the EPI ranks 180 countries on climate change performance, environmental health, and ecosystem vitality. These indicators provide a gauge at a national scale of how close countries are to established environmental policy targets.

The EPI offers a scorecard that highlights leaders and laggards in environmental performance and provides practical guidance for countries that aspire to move toward a sustainable future. Source: EPI Raw Data, available at: https://epi.yale.edu [06 August 2022]
[12] Source: WHO UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (washdata.org). Accessed via World Development Indicators [06 August 2022].
[13] Source: WHO UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (washdata.org). Accessed via World Development Indicators [06 August 2022]; World Bank Global Electrification Database from Tracking SDG 7: The Energy Progress Report led jointly by the custodian agencies: the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the United Nations Statistics Division (UNSD), the World Bank and the World Health Organization (WHO). Accessed via World Development Indicators [06 August 2022]; WHO Global Health Observatory; Accessed via World Development Indicators [06 August 2022].
[14] Source: Food and Agriculture Organization, electronic files and web site. Accessed via World Development Indicators [06 August 2022].
[15] Source: Food and Agriculture Organization, electronic files and web site. Accessed via World Development Indicators [06 August 2022].
[16] Source: World Database on Protected Areas (WDPA) where the compilation and management is carried out by United Nations Environment World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with governments, non-governmental organizations, academia and industry. The data is available online through the Protected Planet website. Accessed via World Development Indicators [06 August 2022].
[17] Source: World Database on Protected Areas (WDPA) where the compilation and management is carried out by United Nations Environment World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with governments, non-governmental organizations, academia and industry. The data is available online through the Protected Planet website. Accessed via World Development Indicators [06 August 2022].
[18] Source: Climate Watch. 2020. GHG Emissions. Washington, DC: World Resources Institute. Accessed via World Development Indicators [06 August 2022].
[19] Brauer, M. et al. 2017, for the Global Burden of Disease Study 2017. Accessed via World Development Indicators [06 August 2022].
[20] The Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index is a measurement tool that helps governments, businesses and communities examine risks exacerbated by climate change, such as over-crowding, food insecurity, inadequate infrastructure, and civil conflicts. The Country Index uses 20 years of data across 45 indicators to rank over 180 countries annually based on their level of vulnerability, and their readiness to successfully implement adaptation solutions. Available at: https://gain.nd.edu [06 August 2022]
[21] ND-GAIN, Our Work. Ecosystems. Available at: https://gain.nd.edu/our-work/country-index/methodology/sectors/#ecosystems [06 August 2022]
[22] EM-DAT contains essential core data on the occurrence and effects of over 22,000 mass disasters in the world from 1900 to the present day. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies. Available at: https://www.emdat.be [06 August 2022]
[23] Note: World Bank, Sustainable Energy for All (SE4ALL) database from the SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program. Accessed via World Development Indicators [06 August 2022].
[24] IRENA (2022), Renewable Energy Statistics 2022, International Renewable Energy Agency (IRENA), Abu Dhabi. Available at: https://irena.org/Statistics [06 August 2022]
[25] IRENA (2022), Renewable Energy Statistics 2022, International Renewable Energy Agency (IRENA), Abu Dhabi. Available at: https://irena.org/Statistics [06 August 2022]
[26] IRENA jobs database 2021. Figures provided are the result of a comprehensive review of primary information sources by national entities such as ministries and statistical agencies, and secondary data sources such as regional and global studies. For more details refer to IRENA's report 'Renewable Energy and Jobs - Annual Review 2019'.

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