

BRUNEI DARUSSALAM

EMPLOYMENT AND ENVIRONMENTAL SUSTAINABILITY FACT SHEETS 2019

The *Employment and Environmental Sustainability Fact Sheets* series provides key features of employment and environmental sustainability performance. Jobs that are green and decent are central to sustainable development and resource productivity. They respond to the global challenges of environmental protection, economic development and social inclusion. Such jobs create decent employment opportunities, enhance resource efficiency and build low-carbon, sustainable societies. The fact sheets include the most recently available data for selected indicators on employment and environmental sustainability: (i) employment in environmental sectors; (ii) skill levels; (iii) vulnerability of jobs; (iv) jobs in renewable energy; (v) scoring on the Environmental Performance Index; and (vi) air quality.

DEMOGRAPHICS

Brunei Darussalam¹ is a small country on the northern coast of Borneo island in South-East Asia (Fig. 1). Its population is mostly urban and growing, with a fertility rate of 1.8 children and life expectancy of 77.5 years. Around 72 per cent of the population is of legal working age (15–64 years) (Fig. 2).

Figure 1. Map of Brunei Darussalam

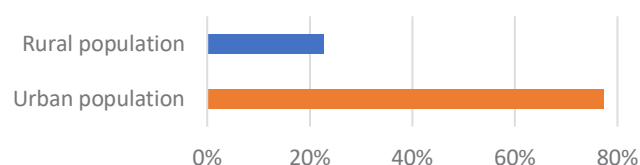


Figure 2. Brunei Darussalam population statistics

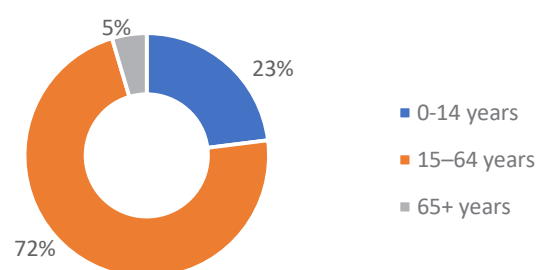
Population:² 0.42 million



Population growth rate	Fertility rate	Life expectancy at birth
1.29%	1.8 children	77.5 years



Population age categories



Note: All data is for 2017, except fertility rate and life expectancy, which are 2018 data.

Source: ILO compilation using World development indicators, last updated: 28/06/2018; <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> and UN ESCAP Statistics. http://data.unescap.org/escap_stat/ (accessed on 23 November 2018).

¹ Brunei Darussalam became a member of the International Labour Organization in 2007.

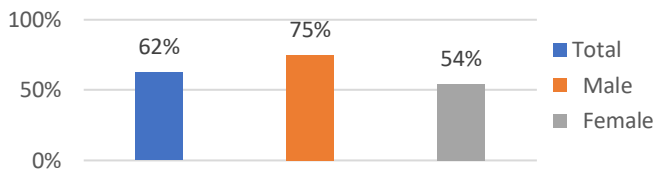
² Population data based on 2017 data.

LABOUR FORCE

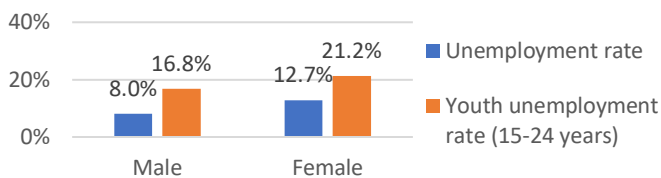
In 2018, the labour force participation rate was 67 per cent and the employment-to-population ratio was 62.34 per cent. Both these rates are more than 15 to 20 percentage points higher for men than for women. The total unemployment rate in 2018 was 9.32 per cent, and the youth unemployment rate was 28.15 per cent, with the female unemployment rate in this age group being 5.25 points higher than the male rate. The proportion of youths aged 15-24 years not in education, employment or training was 20 per cent in 2017.³ Employment is heavily reliant on services, followed by industry, and on medium and high-skilled occupations (Fig. 3).

Figure 3. Basic employment statistics for Brunei Darussalam, 2018

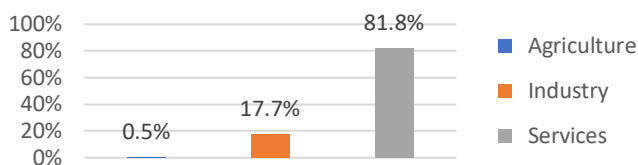
Employment-to-population, 2018 (15+ years)



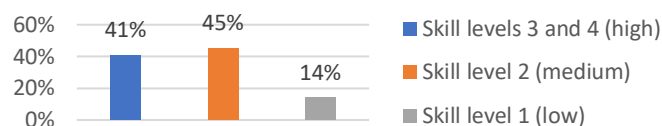
Unemployment, 2018



Employment by sector, 2018 (15+ years)



Employment by occupation, 2018

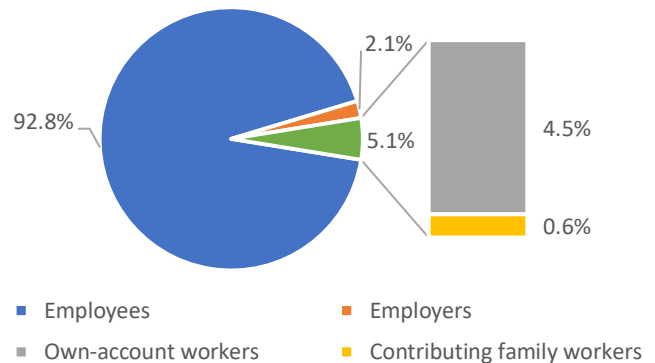


Note: ILO estimates. Labour force participation rate and unemployment: aged 15 years and older. Youth unemployment: aged 15-24 years. Employment by occupation: skill level 1 (low) for elementary occupations; skill level 2 (medium) for clerical, service and sales workers, skilled agricultural and trade workers, plant machinists and assemblers; and skill levels 3 and 4 (high) for managers, professionals and technicians.

Source: ILO estimates and compilation using ILOSTAT, www.ilo.org/ilostat (accessed 23 November 2018).

Vulnerable employment in Brunei Darussalam as of 2018 accounted for 5.1 per cent of the labour force, with the majority of those workers having own-account status (Fig. 4). Own-account and contributing family workers are more likely to experience low job and income security than employees and employers, as well as lower coverage by social protection systems and employment regulation.

Figure 4. Vulnerable employment, 2018



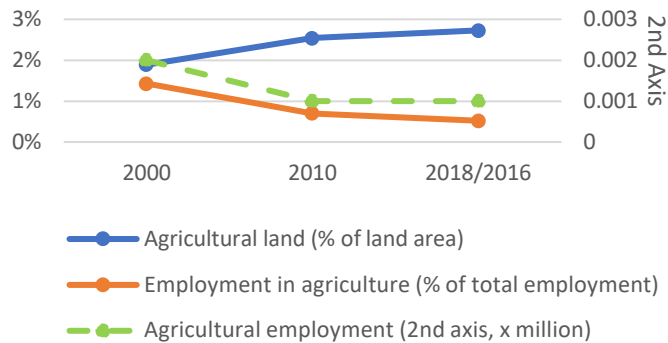
Note: ILO estimates. Vulnerable employment includes own-account workers and contributing family workers from ILO status of employment data.

Source: ILO estimates and compilation using ILOSTAT, www.ilo.org/ilostat (accessed 23 November 2018).

Rural population growth was negative 0.1 per cent in 2017. The share of agricultural land in total land area increased by 1 percentage point between 2000 and 2016, while agricultural employment decreased from 0.002 million to 0.001 million people. The share of agricultural employment within total employment fell by approximately 0.9 percentage points due to faster job creation in other sectors (Fig. 5).

³ World development indicators. <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> (accessed on 7 August 2018).

Figure 5. Agricultural land and agricultural employment, 2000-2018



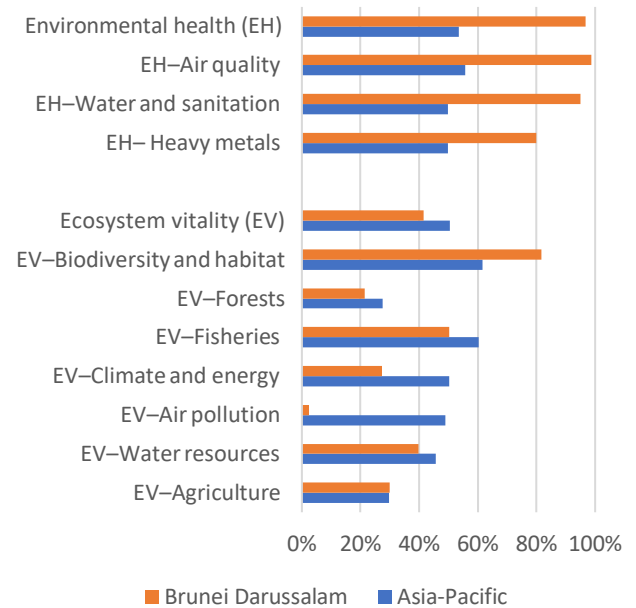
Note: data for agricultural land is from 2016 other data is from 2018.

Source: ILO compilation using World development indicators, last updated: 28/06/2018; <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> (accessed on 23 November 2018).

ENVIRONMENTAL ISSUES

Brunei Darussalam ranks number 53 of 180 countries in the Environmental Performance Index (EPI)⁴, with a score of 63.57 (with 0 being furthest from the high-performance benchmark target of 100). Brunei Darussalam outperforms the average score for Asia and the Pacific (Fig. 6) in some of the EPI categories, including water and sanitation, heavy metals, air quality, and biodiversity and habitat. However, there is room for improvement, especially in ecosystem vitality (air pollution, climate and energy, forests, fisheries and water resources). Action to address climate change and improve environmental health, ecosystem vitality and resilience to weather disasters all have the potential to provide job creation, green economy growth and innovation in Brunei Darussalam.

Figure 6. Environmental performance index for Brunei Darussalam, 2018



Note: Score 0 (worst)–100 (best). Asia-Pacific: the data is for ILO member states in the region, excluding Cook Islands, Marshall Islands, Palau and Tuvalu.

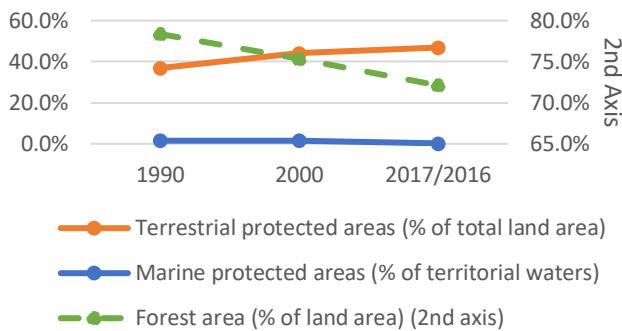
Source: ILO compilation using “2018 EPI Scores – Current”. EPI Yale.

Forest area decreased between 1990 and 2016 by approximately 6.3 per cent of total land area. From 2000 to 2017, the share of terrestrial protected area increased slightly, reaching 46.9 per cent of total land area, while the proportion of marine protected area decreased slightly, down to 0.2 per cent (Fig. 7). There will be greater prospects for employment opportunities if there is a commitment to transition to a low-carbon and resource-efficient economy, such as jobs in resource management and environmental services.⁵

⁴ Yale Center for Environmental Law and Policy / Center for International Earth Science Information Network at Columbia University. “2018 EPI Scores – Current”. EPI Yale. Retrieved 14-06-2018. Available: <https://epi.envirocenter.yale.edu>.

⁵ Organisation for Economic Co-operation and Development: The jobs potential of a shift towards a low-carbon economy, OECD Green Growth Papers, No. 2012/01 (Paris, 2012), <http://dx.doi.org/10.1787/5k9h3630320v-en>.

Figure 7. Forest area, terrestrial and marine protection area, 1990-2017

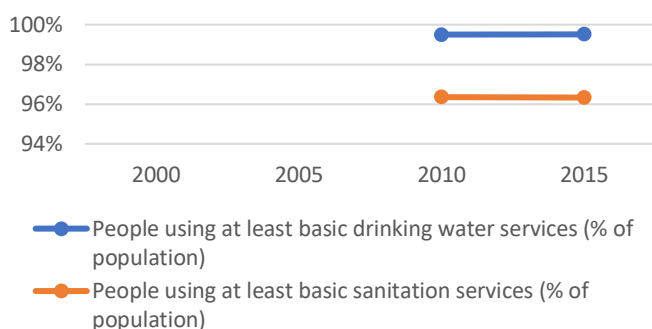


Note: data for forest area is from 2016 and other data is from 2017.

Source: ILO compilation using World development indicators, last updated: 28/06/2018; <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> (accessed on 18 March 2019).

Since 2010, access to basic drinking water has remained steady, at an average of 99.5 per cent in 2015, and access to basic sanitation decreased by 0.1 per cent, to an average of 96.3 per cent in 2015 (Fig. 8). Both are still below the ideal threshold of 100 per cent. Only 0.8 per cent of the labour force was employed in water supply, sewerage, waste management and remediation activities in 2017 (Fig. 13). Improvement in water supply and sanitation access could provide decent job opportunities in the future.

Figure 8. Basic drinking water and sanitation access, 2000-2015



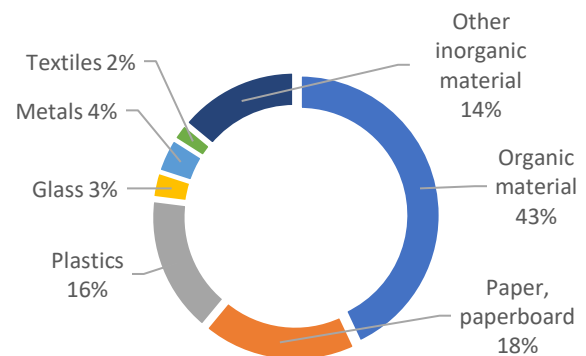
Note: Data before 2010 is not available.

Source: ILO compilation using World development indicators, last updated: 21/05/2018; <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> (accessed on 23 November 2018).

Growth of the urban population in Brunei Darussalam has meant an increase in solid waste. Waste collection varies between the inner cities and the country's outer urban areas. According to the World Bank, municipal solid waste generation in Brunei Darussalam in 2004 was 0.87 kilograms per capita per day and is expected to increase to 1.3 kilograms per capita per day by

2025.⁶ The majority of the waste in 2005 was organic (43 per cent), followed by paper and paperboard (18 per cent) (Fig. 9). The much-needed implementation of a municipal waste management system for collection, safe and sustainable disposal, recycling and composting practices could create more green jobs that help the environment and general health.

Figure 9. Waste composition, 2005



Source: ILO compilation using UNSD-Environment statistics (released on 30/04/2018; <https://unstats.un.org/unsd/envstats/qindicators.cshml>) (accessed on 23 November 2018).

AIR QUALITY

The carbon dioxide (CO₂) emission levels for Brunei Darussalam increased slightly by an average of 2 per cent from 1990 to 2014 (Fig. 10).⁷ The increase was due to two major sources: electricity generation; and fuel consumption in the transport sector.⁸ The level of emissions is significantly lower than both the Asia-Pacific and ASEAN averages since 1990.

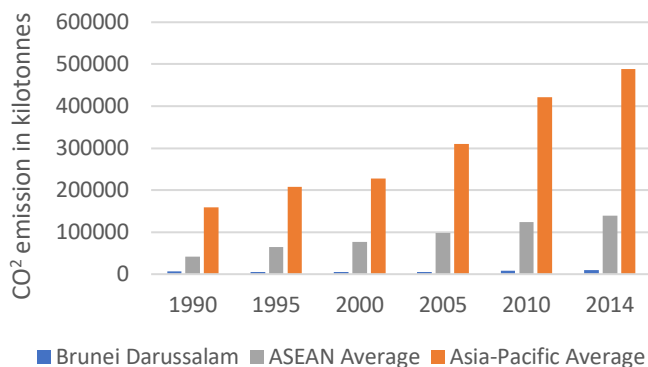
The PM_{2.5} (atmospheric particulate matter with a diameter of less than 2.5 micrometres) emission levels for Brunei Darussalam show a slight decrease since 2005 (Fig. 11). Overall PM_{2.5} emission rates did not exceed the World Health Organisation's Air Quality Guideline threshold level, thus indicating low emissions. Brunei Darussalam also shows lower levels of emission than the ASEAN and Asia-Pacific averages.

⁶ World Bank: What a waste: A global review of solid waste management (Washington, DC, 2012).

⁷ The value is calculated on the basis of CAGR (compound annual growth rate).

⁸ Brunei Darussalam's Intended Nationally Determined Contribution (INDC) November 2015 http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brunei/1/Brunei%20Darussalam%20INDC_FINAL_30%20November%202015.pdf.

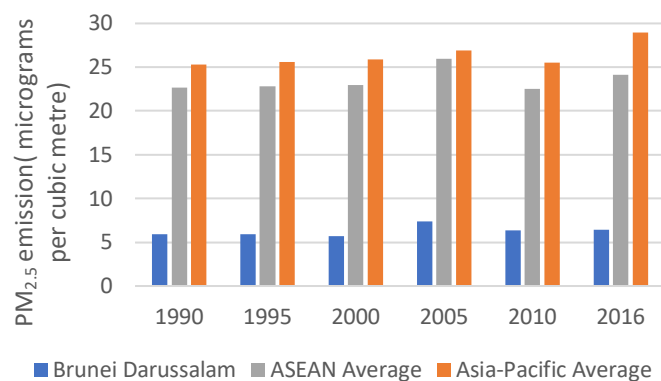
Figure 10. CO₂ emissions for Brunei Darussalam, 1990-2014



Note: Data for ASEAN and Asia-Pacific are the average of all the ILO member states of the regions. Asia-Pacific data excludes Cook Islands, Timor-Leste (1990, 1995, 2000).

Source: ILO compilation using World Bank indicators
<https://data.worldbank.org/indicator/EN.ATM.CO2E.KT?locations=IR> (accessed on 23 November 2018).

Figure 11. PM_{2.5} emissions for Brunei Darussalam, 1990-2016



Note: Data for ASEAN and Asia-Pacific are the average of all the ILO member states of the regions. Asia-Pacific data excludes Cook Islands, Palau and Tuvalu.

Source: ILO compilation using World Bank indicators
<https://data.worldbank.org/indicator/EN.ATM.PM25.MC.M3?view=chart> (accessed on 23 November 2018).

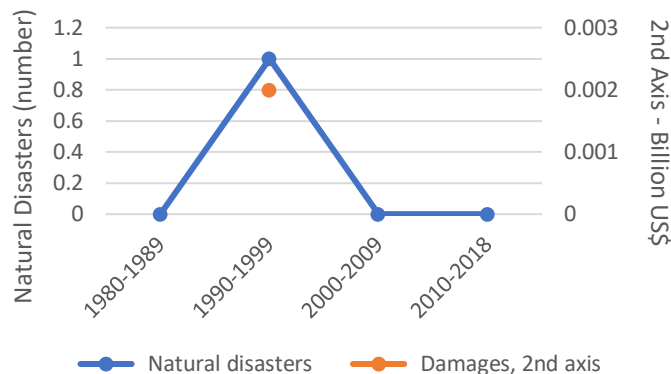
Applying the Just Transition Guidelines, an area of possible intervention includes efforts to reduce harmful emissions, which could potentially generate green jobs in high emitting sectors such as transportation and fuel-intensive industries. Reducing emissions is a significant challenge, which can be achieved not only by mitigation methods, but also by adapting to, and coping with, the changes required by the transition to a low-carbon economy.

CLIMATE CHANGE IMPACTS

According to the *World Risk Report*⁹, Brunei Darussalam has a medium World Risk Index score. It ranks number 12 of 171 countries because of its medium exposure to natural hazards and limited institutional capacity to cope and adapt. Part of the country's vulnerability relates to the 1.6 per cent of the total population who, as at 2010, live in the 0.4 per cent of total land area that is less than 5 metres above sea level.¹⁰

According to the *Emergency Events Database*¹¹, there was a substantial increase in natural disasters¹² between the 1980s and the 2010s (Fig. 12). The natural disasters in that time were mostly floods, landslides, thunderstorms and forest fires. Developing preventative measures to limit infrastructure and property damage and increase institutional capacity to respond to climate events, particularly for small businesses, can be a source of decent job creation while building resilience.

Figure 12. Natural disaster occurrence and damage costs in Brunei Darussalam



Note: Natural events include climatological, hydrological and meteorological disasters.

Note: Damage costs data is available from for 1990 to 1999 only.

Source: EM-DAT: The emergency events database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Data accessed on: 23 November 2018.

GREEN JOBS POTENTIAL

In 2017, 0.8 per cent of total employment was in the agriculture, forestry and fishing sector (Fig. 13). Reliance on agriculture is not significant, however, there are opportunities for job creation in sustainable production and organic farming.

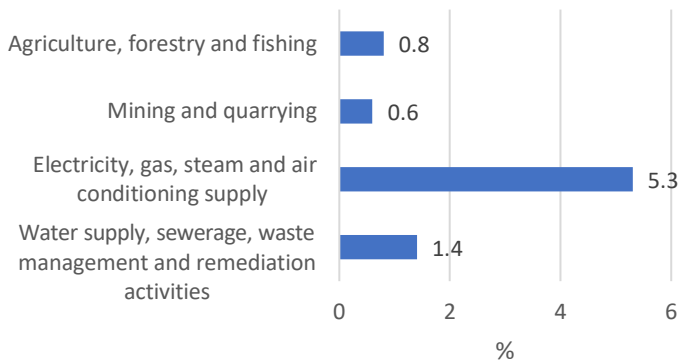
⁹ Bündnis Entwicklung Hilft and United Nations University - EHS (2017) *World Risk Report 2017*, available at: <http://weltrisikobericht.de/english/>

¹⁰ World development indicators; <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> (accessed on 7 August 2018).

¹¹ EM-DAT: The emergency events database - Universite catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. Data accessed on: 20 July 2018.

¹² Climatological, hydrological and meteorological disasters.

Figure 13. Employment in sectors with strong green jobs potential in 2017

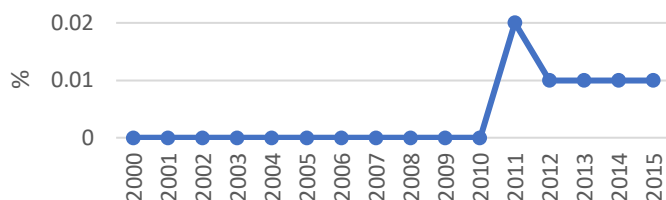


Note: These sectors have the most potential for green job opportunities. Employment by selected 1-digit sector level (ISIC - Rev. 4, 2008).

Source: ILO estimates and compilation using ILOSTAT, www.ilo.org/ilostat (accessed 23 November 2018).

In 2016, 95 per cent of the population relied primarily on clean fuel and technology, in the sense that these do not create pollution within the home.¹³ The share of renewable energy in total energy consumption has not fluctuated with overall consumption. From 2000 to 2010, it remained at 0 per cent and increased only slightly to 0.01 per cent in 2015 (Fig. 14). However, renewable energy electricity generation has remained steady over the last six years, with solar power being the main source in 2016 (Fig. 15). The country's employment rate in electricity, gas, steam and air conditioning was only 5.3 per cent in 2017 (Fig. 13). With the push for increasing reliance on renewable energy, there is the potential for decent job opportunities in the future.

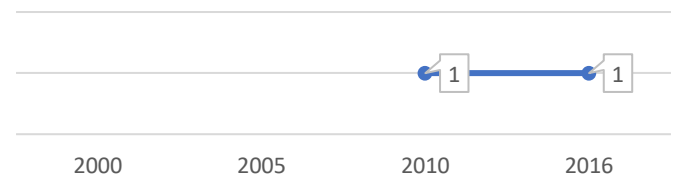
Figure 14. Trend in renewable energy share in the total final energy consumption, 2000-15



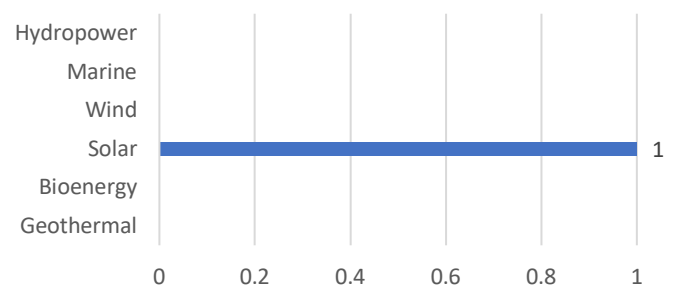
Source: ILO compilation using United Nations statistics division. SDG indicators: Global database. Available at: <https://unstats.un.org/sdgs/indicators/database/> (accessed on 23 November 2018).

Figure 15. Renewable energy electricity generation, 2000-2016

Total renewable energy electricity generation (gigawatt hours - GWh)



Renewable energy electricity generation (GWh) in 2016, by technology



Note: No data available before 2010.

Source: ILO compilation using source: IRENA (2018); Renewable electricity capacity and generation statistics, June 2018. Available at: <http://resourceirena.irena.org>.

Better data collection relating to the green economy and the environmental sector would be very valuable for policy-makers in Asia-Pacific countries. In particular, better data on green and decent jobs is 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 ensure a just transition to environmental sustainability and to monitor progress going forward.

¹³ The proportion of the population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by the total population reporting any cooking, heating or lighting, expressed as a percentage. "Clean" is defined by the emission rate targets and specific fuel recommendations (against unprocessed coal and kerosene) included in the normative World Health Organization guidelines for indoor air quality; see the data for household fuel combustion, <https://unstats.un.org/sdgs/metadata/files/Metadata-07-01-02.pdf>.



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