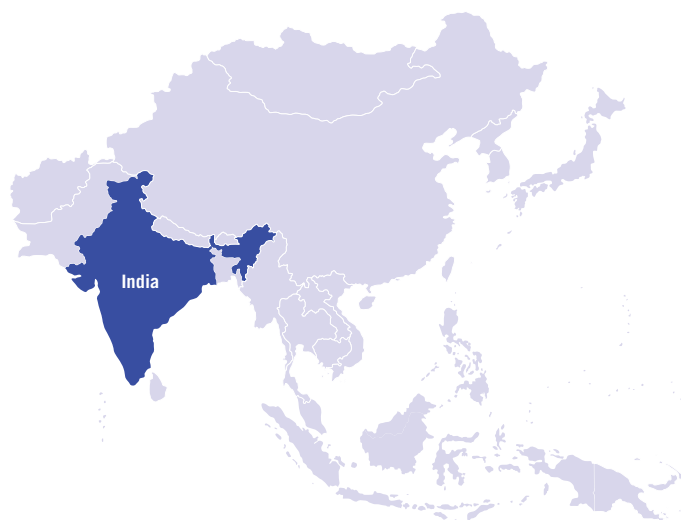


INDIA

EMPLOYMENT AND ENVIRONMENTAL SUSTAINABILITY FACT SHEETS 2017

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 recent available data for selected indicators¹ on employment and environmental sustainability: (i) employment in environmental sectors; (ii) skill levels; (iii) vulnerability of jobs; (iv) jobs in renewable energy; and (v) scoring on the Environmental Performance Index.

Figure 1. Map of India



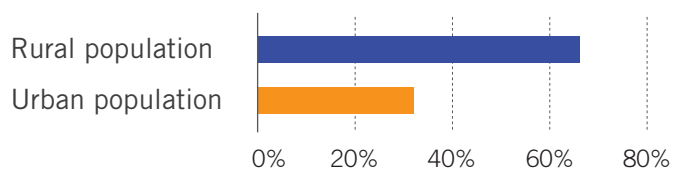
India² is a large country in South Asia and shares a border with Pakistan to the west and with China, Nepal and Bhutan to the north-east (Fig. 1). Its population is mostly rural and growing, with a fertility rate of 2.4 children and life expectancy at 68.3 years. Around 66 per cent of the population is of legal working age (15–64 years) (Fig. 2).

Figure 2. Demographics for India

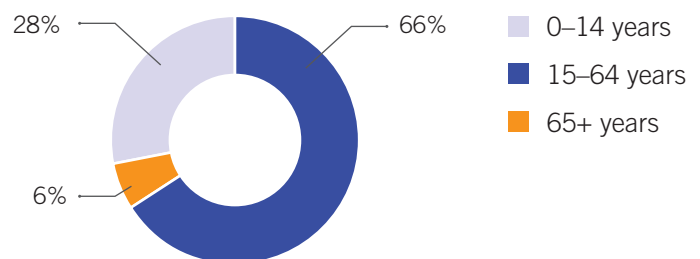
Population: 1 324.2 million



Population growth rate	Fertility rate	Life expectancy at birth
1.1%	2.4 children	68.3 years



Population age categories



Note: All data for 2016, except fertility and life expectancy, which are 2015.

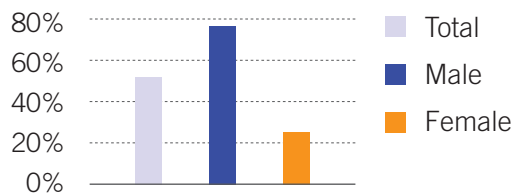
Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org> (accessed 30 July 2017).

1. The fact sheet is based on available data only.
2. India became a member of the International Labour Organization in 1919.

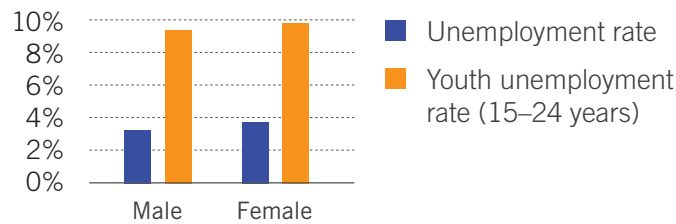
As of 2017, the labour force participation rate is 53.8 per cent and the employment-to-population ratio is 52 per cent. Both of those rates are more than 50 percentage points higher for men than for women. The total unemployment rate is 3.4 per cent, and the youth unemployment rate is 9.5 per cent, both almost at gender parity. Formal employment is heavily reliant on agriculture³ and on medium-skilled occupations, although the services and industry sectors and low-skilled occupations account for more than 20 per cent of total employment (Fig. 3). According to a 2014 International Labour Organization report,⁴ steel capacity in India is expected to increase, and with it, the direct workforce in the steel sector will increase from 230,000 people to 950,000 people by 2020. An estimated 25 per cent of the direct new jobs will be green jobs that require training in green technology-based skills, in addition to occupation-based skills (p. vii).

Figure 3. Basic employment statistics for India, 2017

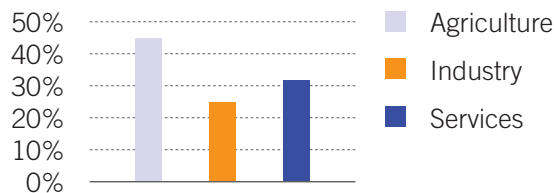
Employment-to-population ratio (15+ years)



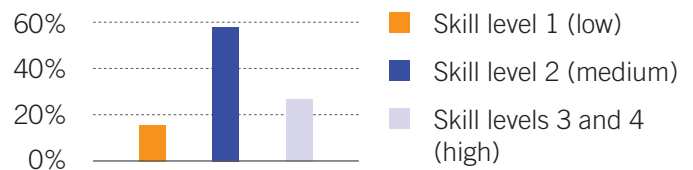
Unemployment



Employment by sector (15+ years)



Employment by occupation

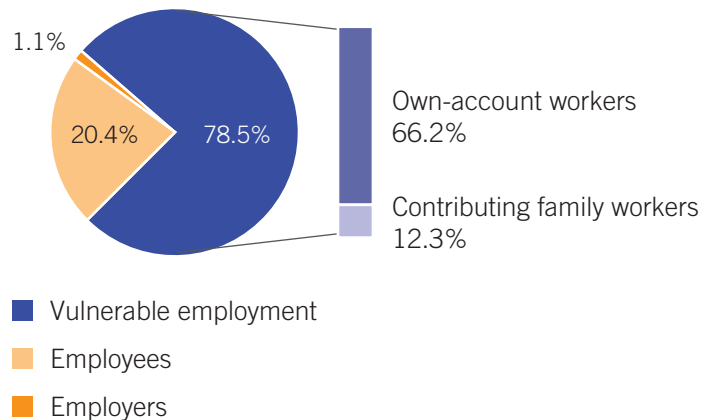


Note: ILO estimates. Labour force participation rate and unemployment: aged 15 years and older. Youth unemployment: aged 15–24 years. Employment by occupation: skill level 1 (low) for elementary occupations; skill level 2 (medium) for clerical, service and sales workers, skilled agricultural and trade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

Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat> (accessed 17 July 2017).

Vulnerable employment in India accounts for 78.5 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, by status, 2017



Note: Vulnerable employment includes own-account workers and contributing family workers.

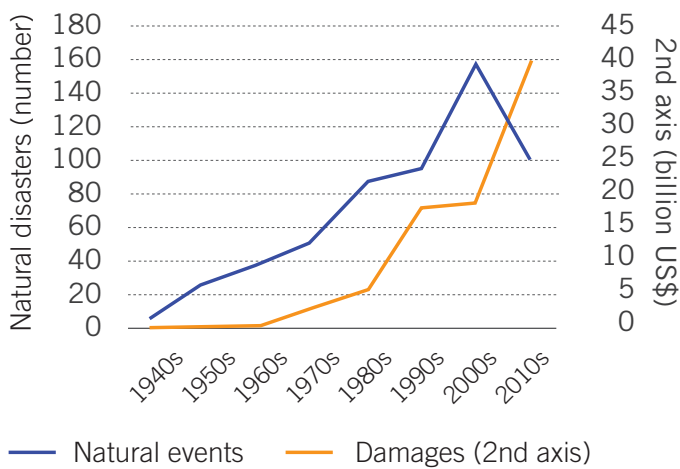
Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat> (accessed 17 July 2017).

According to the *World Risk Report*,⁵ India has a middling World Risk Index score. It ranks 77 (out of 171) because of its medium exposure to natural hazards and limited adaptive capacity to respond. Part of the country's vulnerability is due to the 2.7 per cent of the total population who lived in the 1.5 per cent of total land area below 5 meters above sea level as of 2010.⁶

3. Informal employment (self-employed and contributing family members) is excluded from the agriculture calculations.
 4. ILO: *Skills trends for green jobs in the steel industry in India* (Bangkok, 2014), http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_240450.pdf
 5. Bündnis Entwicklung Hilft and United Nations University: *World risk report 2016* (Berlin, 2016), <http://weltrisikobericht.de/english/>.
 6. World Bank: *World development indicators*, last updated 20 July 2017, <http://databank.worldbank.org/> (accessed 30 July 2017).

According to the Emergency Events Database,⁷ there was a substantial increase in natural disasters⁸ and associated damage costs between the 1940s and the 2010s (Fig. 5). The natural disasters in that time were mostly tropical cyclones, storms, floods, landslides, droughts, cold waves and heat waves which resulted in more than 3.1 million deaths. Developing preventive measures to limit infrastructure and property damage and increase institutional capacity, particularly for small businesses to respond to climate events, can be a source of decent job creation while building resilience.

Figure 5. Natural disaster occurrence and damage costs in India, 1940s-2010s

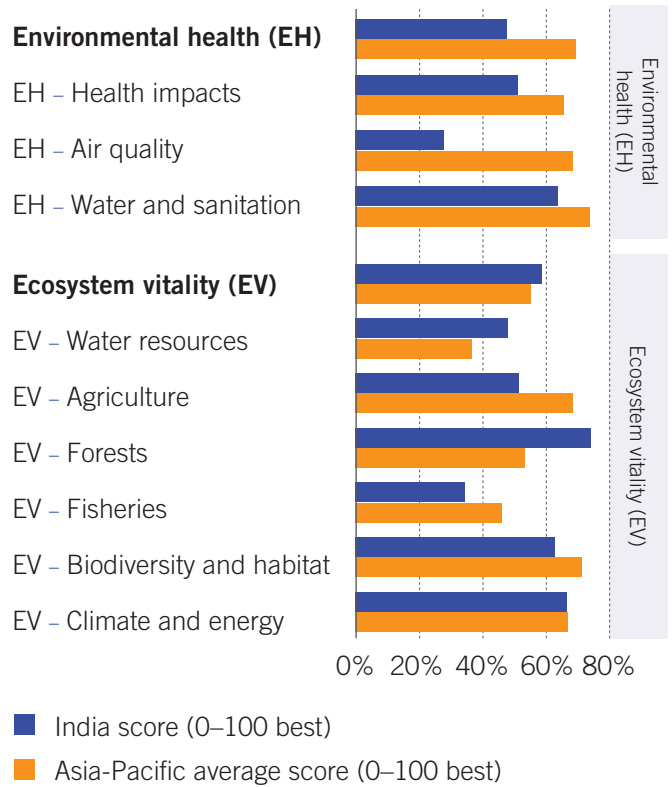


Note: Natural events include climatological, hydrological and meteorological disasters. 2010s data are only for the first half of the decade.

Source: ILO compilation using EM-DAT: The Emergency Events Database – Université catholique de Louvain (UCL) – CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium.

India ranks 141 out of 180 countries in the Environmental Performance Index (EPI), with a score of 53.6 1 (with 0 furthest from the high-performance benchmark target of 100). India outperforms the average score for Asia and the Pacific (Fig. 6) in two of the ecosystem vitality categories: water resources and forests. Still, there is significant room for improvement in most of the environmental areas, especially in environmental health (in health impacts, air quality, water and sanitation) and in ecosystem vitality (in agriculture, fisheries and biodiversity and habitat). 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 country.

Figure 6. Environmental Performance Index 2016 for India



Note: Score 0–100 best. Asia-Pacific: Each score is an average of all data for ILO member States in the region, excluding four countries with no data (Cook Islands, Marshall Islands, Palau and Tuvalu).

Source: ILO compilation using, A. Hsu et al.: 2016 *Environmental Performance Index* (New Haven, CT, Yale University, 2016), www.epi.yale.edu.

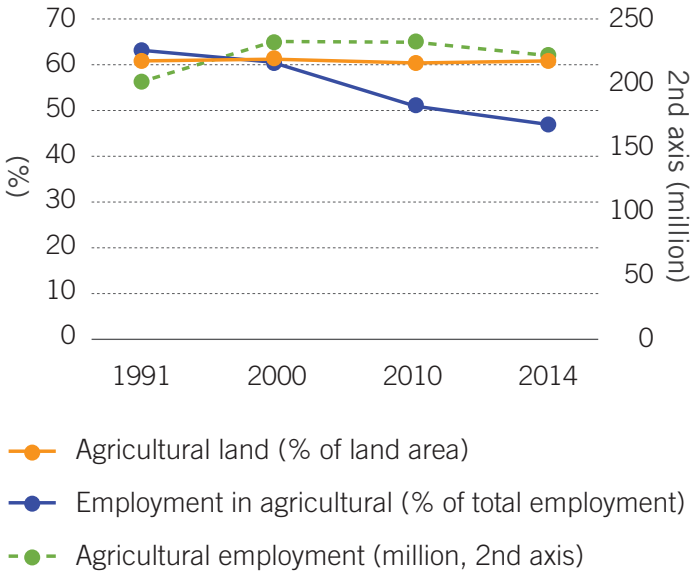
Rural population growth was 0.6 per cent in 2015. The share of agricultural land remained steady between 1991 and 2014, reaching 60.4 per cent of total land area. The share of agricultural employment in total employment rose during the 1990s before it declined by 13.3 percentage points between 2000 and 2014. The post-2000 employment share decline resulted from the combination of 11.1 million agricultural jobs lost and job creation in other sectors (Fig. 7). The share of forest area increased between 1990 and 2014, to approximately 23.7 per cent of total land area. During that same time, the terrestrial protected area increased slightly, to 5.6 per cent, while the share of marine protected area amounted to 2.1 per cent of total territorial waters (Fig. 8). In 2012, 47 per cent of employment was in the agriculture, forestry and fishing sector (Fig. 9). Although reliance on agriculture is large, there are opportunities for job creation for sustainable production and organic farming. There will be greater prospects for employment

7. EM-DAT: The Emergency Events Database – Université catholique de Louvain (UCL) – CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium.

8. Climatological, hydrological and meteorological disasters.

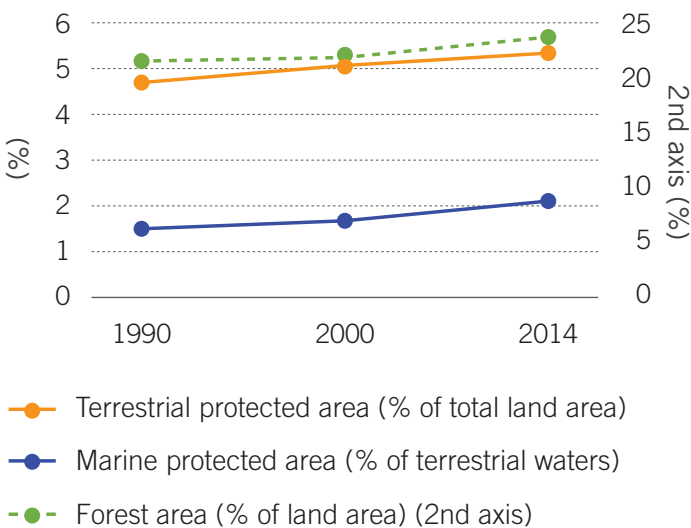
opportunities if there is commitment to transition to a low-carbon and resource-efficient economy, such as jobs in resource management and environmental services.⁹

Figure 7. Agricultural land and agricultural employment, 1991-2014



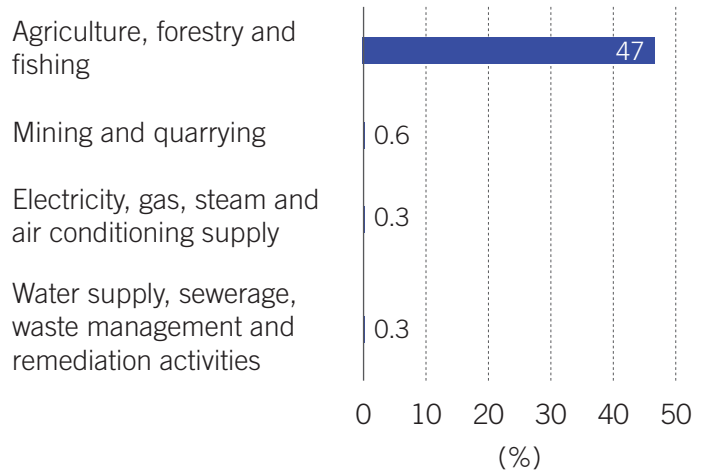
Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/>; ILOSTAT, <http://www.ilo.org/ilostat/> (accessed 30 July 2017).

Figure 8. Forest area and terrestrial and marine protected areas, 1990-2014



Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/> (accessed 30 July 2017).

Figure 9. Employment in sectors with strong green jobs potential, 2012



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

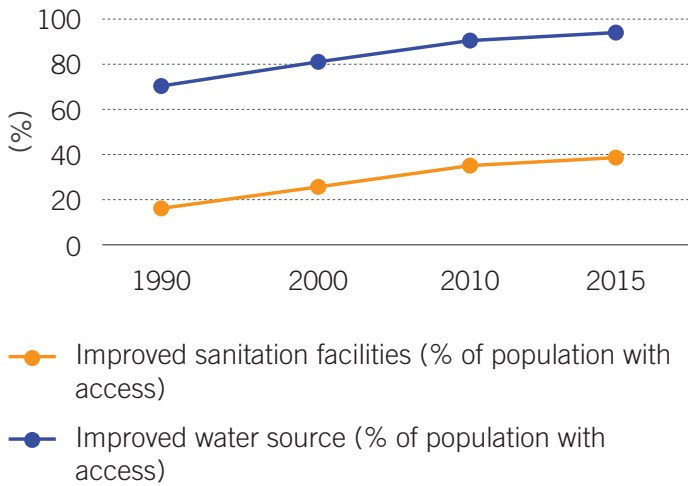
Source: ILO compilation using ILOSTAT, <http://www.ilo.org/ilostat/> (accessed 16 November 2017).

Since 1990, the percentage of the population with access to improved water supply has increased 23.6 percentage points, to 94.1 per cent in 2015. There was a 22.8-percentage point increase in access to improved sanitation between 1990 and 2015, reaching 39.6 per cent (Fig. 10). Both access indicators are still below the ideal threshold of 100 per cent (Fig. 10). According to the World Bank, the rapid pace of urbanization and development in India is contributing to the increasing volume of solid waste.¹⁰ Municipal solid waste generation was 0.34 kg per capita per day in 2006 but is expected to increase to 0.7 kg per capita per day by 2025.¹¹ Most of the waste in 2004 was other (at 59 per cent),¹² followed by organic (at 35 per cent) (Fig. 11).¹³ Only 0.3 per cent of the country's workforce was employed in water supply, sewerage, waste management and remediation activities in 2012. Management of solid waste is the responsibility of urban bodies, although according to Yedla (2016),¹⁴ these urban bodies are struggling to provide efficient waste management services, which is leading to unsegregated waste collection, low coverage, transportation of waste in open trucks, limited waste recovery and processing and dumping at open sites. Waste recycling mostly occurs through informal workers who are from impoverished urban communities, working in unsafe conditions and vulnerable to health damage.¹⁵

9. 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>.
 10. World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012).
 11. *ibid.*
 12. Other: textiles, leather, rubber, multi-laminates, e-waste, appliances, ash and other inert materials (World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012)).
 13. Waste Atlas: Country data: India (2012), <http://www.atlas.d-waste.com/> (accessed 6 November 2017).
 14. S. Yedla: "India's waste management problems are piling up", in *East Asia Forum* (30 April 2016), <http://www.eastasiaforum.org/2016/04/30/indias-waste-management-problems-are-piling-up/> (accessed 13 November 2017).
 15. *ibid.*

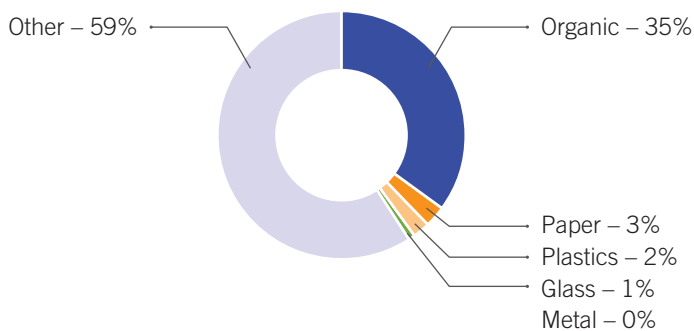
Improvement in safe water supply and sanitation access and the much-needed implementation of a municipal waste management system for collection, safe and sustainable disposal, recycling and composting practices will provide decent job opportunities in the future.

Figure 10. Improved sanitation and water supply access, 1990-2015



Source: ILO compilation using World Bank: World development indicators, last updated 20 July 2017, <http://databank.worldbank.org/> (accessed 30 July 2017).

Figure 11. Waste composition, 2004

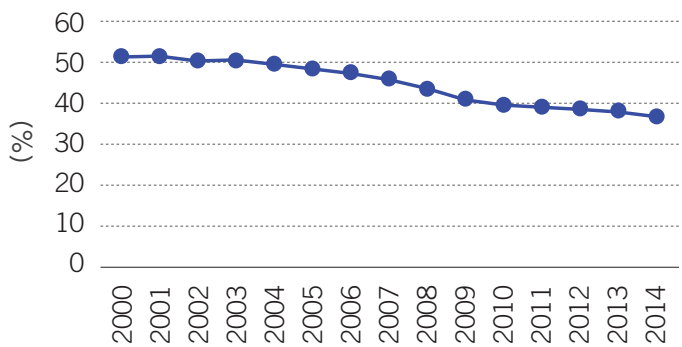


Source: ILO compilation using World Bank: *What a waste: A global review of solid waste management* (Washington, DC, 2012).

In 2014, only 34.2 per cent of the population relied primarily on clean fuel and technology, in the sense that they do not create indoor pollution within the home.¹⁶ The share of renewable energy in total energy consumption, however, has not kept pace with overall consumption. It was 51.6 per cent in 2000 but fell below 40 per cent by 2010 and continued to decline to 36.5 per cent in 2014 (Fig. 12). Renewable energy generation increased slightly between 2011 and 2015, with hydropower the main source of renewable energy in 2015 (Fig. 13). In 2016, approximately 600,000 people were employed in the renewable energy sector,

with 55 per cent of them in large hydropower facilities (Fig. 14). The country's employment rate in electricity, gas, steam and air conditioning was only 0.3 per cent in 2012 (Fig. 9). With the push for increasing reliance on renewable energy, there will be greater potential for decent job opportunities in the future.

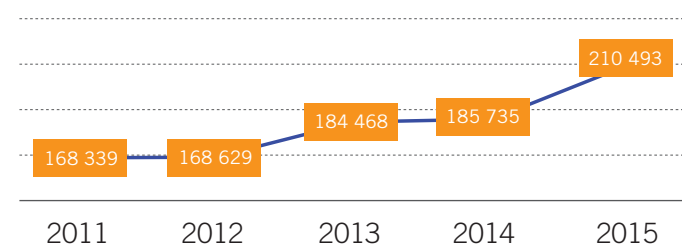
Figure 12. Renewable energy share in total final energy consumption, 2000-14



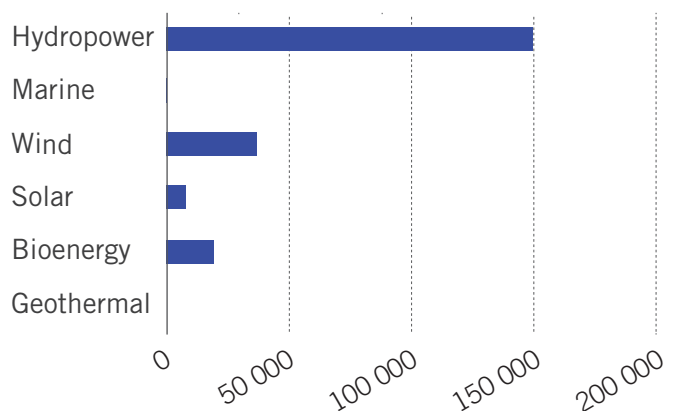
Source: ILO compilation using UN: SDG indicators: Global database (2017), <https://unstats.un.org/> [accessed 17 July 2017].

Figure 13. Renewable energy generation, 2011-15

Total renewable energy electricity generation (GWh)



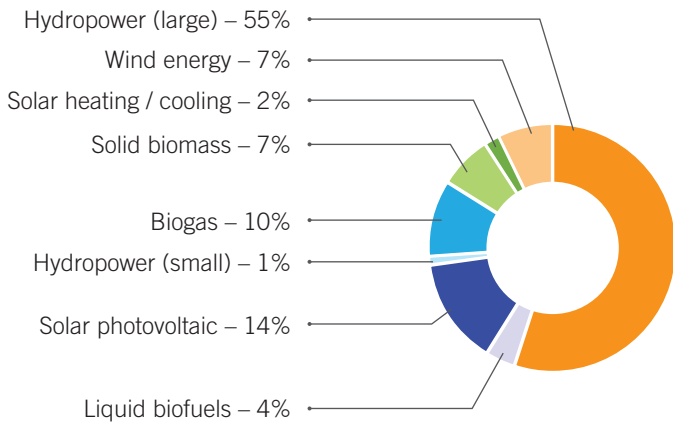
Renewable energy electricity generation (GWh), by technology 2015



Source: ILO compilation using International Renewable Energy Agency: Dashboards (2017), <http://resourceirena.irena.org/gateway/dashboard/> (accessed 17 July 2017).

16. The proportion of 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 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>.

Figure 14. Renewable energy employment, by energy source, 2016



Note: Data limitations apply for certain technologies in certain countries. The lack of data reported for any specific technology may thus be indicative of a data gap, rather than the absence of renewable energy jobs using that technology.

Source: ILO compilation using International Renewable Energy Agency: Dashboards (2017). <http://resourceirena.irena.org/gateway/dashboard/> [accessed 17 July 2017].

Better data collection relating to the green economy and the environmental sector would be valuable for policy-makers in India and Asian-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.

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