

# CHINA

## 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 indicators<sup>1</sup> 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 China



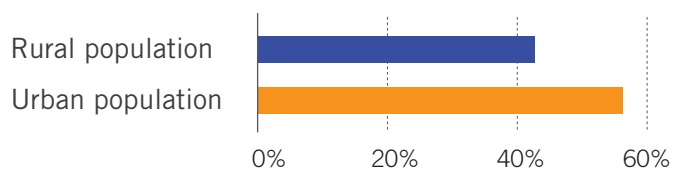
China<sup>2</sup> is a large country in East Asia and shares a border with 14 countries, including India, Mongolia and Russia (Fig. 1). Although its population is majority urban, some 43 per cent still live in rural communities. The population is growing, with a fertility rate of 1.6 children and life expectancy at 76 years. Around 72 per cent of the population is of legal working age (15–64 years) (Fig. 2).

Figure 2. Demographics for China

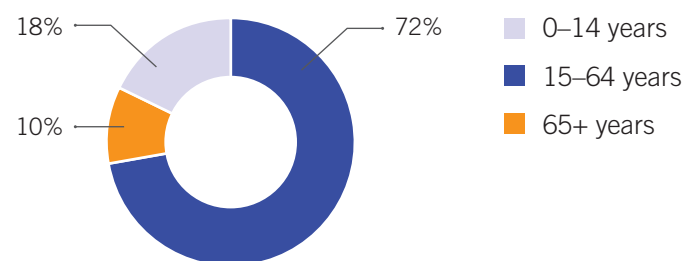
Population: 1 378.7 million



| Population growth rate | Fertility rate | Life expectancy at birth |
|------------------------|----------------|--------------------------|
| 0.5%                   | 1.6 children   | 76 years                 |



Population age categories



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

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

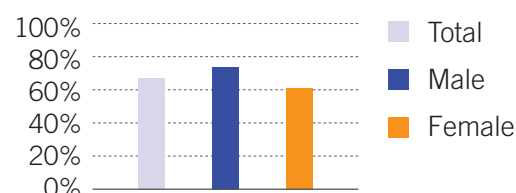
1. The fact sheet is based on available data only.

2. China became a member of the International Labour Organization in 1919.

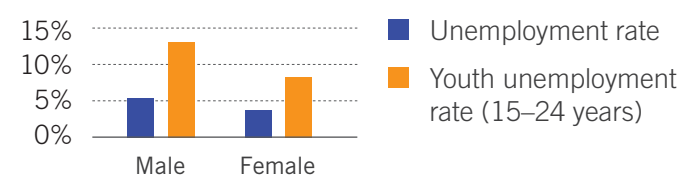
As of 2017, the labour force participation rate is 70.5 per cent and the employment-to-population ratio is 67.3 per cent. Both of those rates are more than 12 percentage points higher for men than for women. The total unemployment rate is 4.6 per cent, and the youth unemployment rate is 10.9 per cent, with the male youth unemployment rate 4.8 percentage points higher than the female rate. Formal employment is heavily reliant on services and on medium-skilled occupations, although the agriculture and industry sectors have a significant proportion of employment, both at more than 20 per cent (Fig. 3).<sup>3</sup>

**Figure 3. Basic employment statistics for China, 2017**

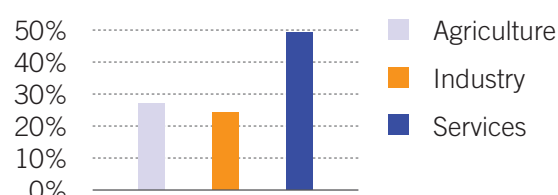
#### Employment-to-population ratio (15+ years)



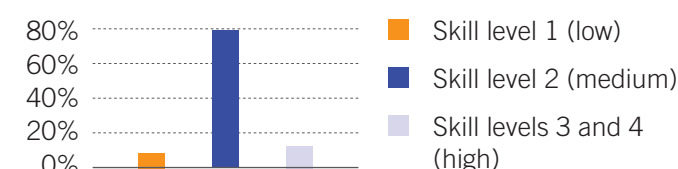
#### Unemployment



#### Employment by sector (15+ years)



#### Employment by occupation

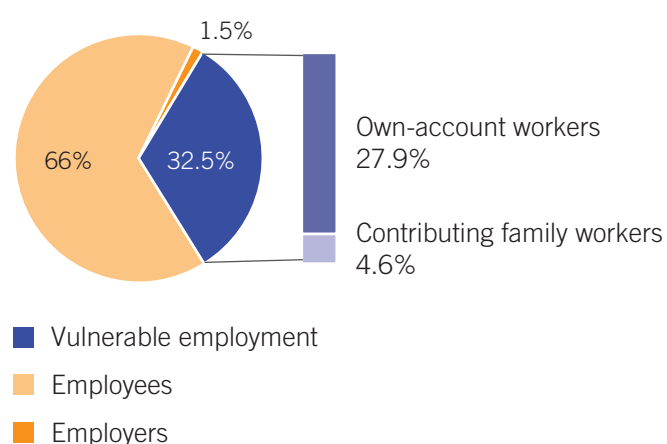


Note: ILO estimates. Labour force participation rate and unemployment: aged 15 years and older. Youth unemployment: aged 15–24 years. Employment by occupation: skill level 1 (low) for elementary occupations; skill level 2 (medium) for clerical, service and sales workers, skilled agricultural and trade 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 China as of 2017 accounts for 32.5 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*,<sup>4</sup> China has a middling World Risk Index score, ranked 85 (out of 171 countries), although it has high exposure to natural hazards, it has medium institutional capacity to respond and adapt. Part of the country's vulnerability is due to the 6.6 per cent of the total population who lived in the 1.2 per cent of the total land area below 5 meters above sea level as of 2010.<sup>5</sup> According to the Emergency Events Database,<sup>6</sup> there was a substantial increase in natural disasters<sup>7</sup> and associated damage costs between the 1940s and 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 2.1 million deaths. Further 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.

3. Informal employment (self-employed and contributing family members) is excluded from the agriculture calculations.

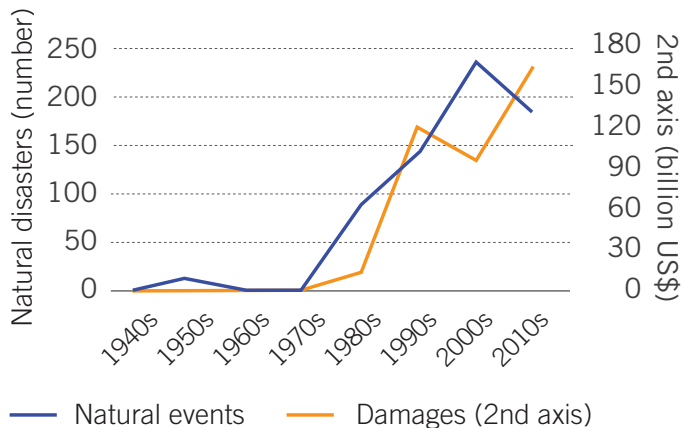
4. Bündnis Entwicklung Hilft and United Nations University: *World risk report 2016* (Berlin, 2016), <http://weltrisikobericht.de/english/>.

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

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

7. Climatological, hydrological and meteorological disasters.

**Figure 5. Natural disaster occurrence and damage costs in China, 1940s–2010s**

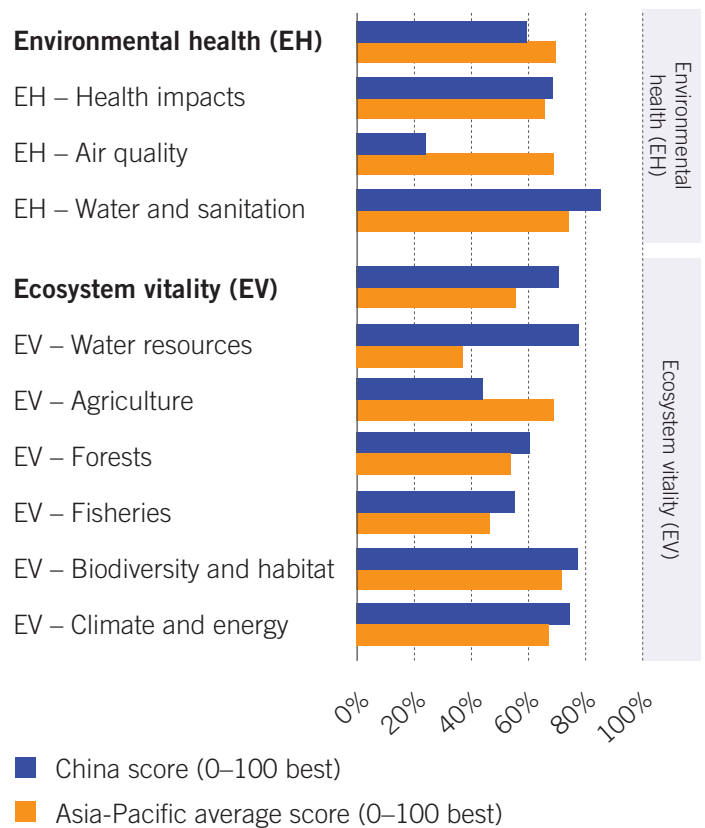


Note: Natural events include climatological, hydrological and meteorological disasters. 2010s data are only for the first half of the decade.

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

China ranks 109 out of 180 countries in the Environmental Performance Index (EPI), with a score of 65.1 (with 0 furthest from the high-performance benchmark target of 100). China outperforms the average score for Asia and the Pacific (Fig. 6) in most of the EPI categories. Still, there is significant room for improvement in most of the environmental areas, especially in environmental health (in air quality) and in ecosystem vitality (in agriculture). A Green Employment in China study (2010) by the Institute for Labor Studies and the Ministry of Human Resources and Social Security found that approximately 1.53 million persons were employed in 2004 in environmental protection industries. They included “industries providing products and technological services in pollution control, emission reduction, pollution management and waste processing, but also can be considered in the broader sense to include environment-friendly technologies and products, energy saving technologies, ecological design and environmental services in a production cycle” (p. 23).<sup>8</sup> 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 China.

**Figure 6. Environmental Performance Index 2016 for China**

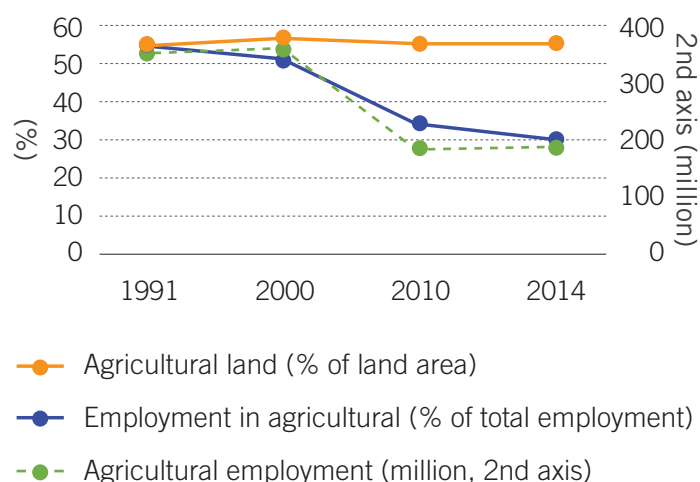


Note: Score 0–100 best. Asia-Pacific: Each score is an average of all data for ILO member States in the region, excluding four countries with no data (Cook Islands, Marshall Islands, Palau and Tuvalu).

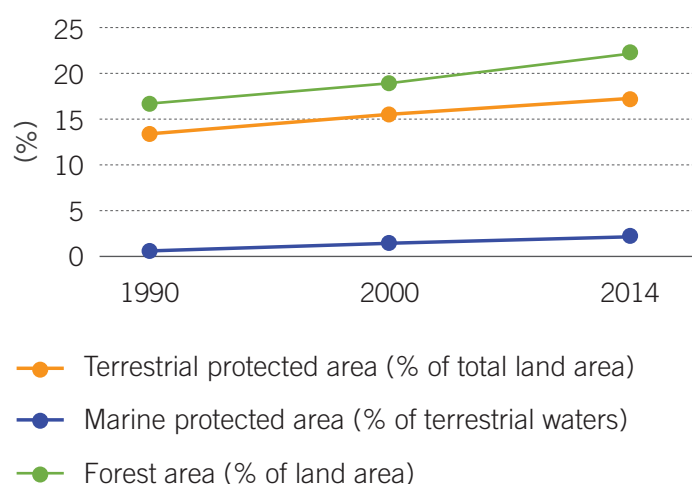
Source: ILO compilation using, A. Hsu et al.: 2016 *Environmental Performance Index* (New Haven, CT, Yale University, 2016), [www.epi.yale.edu](http://www.epi.yale.edu).

Rural population growth was a negative 2.2 per cent in 2015. The share of agricultural land area remained steady between 1991 and 2014, reaching 54.8 per cent of total land area in 2014. The share of agricultural employment in total employment declined by 25 percentage points between 1991 and 2014 due to a loss of 165.4 million jobs and fast job creation in other sectors (Fig. 7). Forest area increased between 1990 and 2014, to approximately 22 per cent of total land area. During the same period, the share of terrestrial protected area also increased, reaching 17 per cent, while the proportion of marine protected area amounted to 2.3 per cent of total territorial waters (Fig. 8). In 2011, 2.5 per cent of total employment was in the agriculture, forestry and fishing sector (Fig. 9).

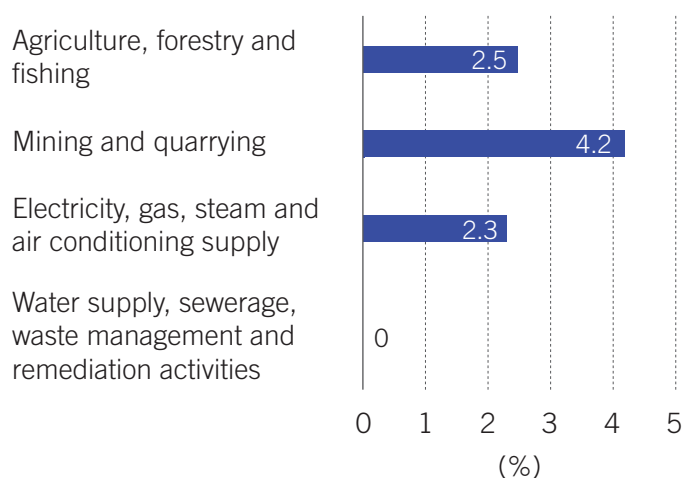
8. Institute for Labor Studies and Ministry of Human Resources and Social Security: *Green employment in China* (Beijing, ILO, 2010), [http://www.ilo.org/beijing/what-we-do/publications/WCMS\\_155395/lang--es/index.htm](http://www.ilo.org/beijing/what-we-do/publications/WCMS_155395/lang--es/index.htm).

**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 land 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, 2011**

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 ILO: *Key indicators of the labour market (KILM)*, Ninth edition (Geneva, 2016).

Three main areas offer employment potential in forestry: (i) forestation and reforestation of degraded ecosystems, developing a joint system of forestry and agriculture and improving the sustainable development of forests; (ii) timber production and processing; and (iii) forestry tourism, developing chemicals for forests, forest machinery manufacturing, forestry food, herbal medicines and flowers, and bamboo.<sup>9</sup> According to the Institute for Labor Studies and the Ministry of Human Resources and Social Security, nearly 1.4 million people were registered incumbent forestry workers in 2007. Of this total, 84 per cent worked in the fields of agriculture, forestry and fisheries within State-owned forestry economic enterprises; 6.6 per cent worked in public management and social organizations; 2.8 per cent worked in water environment and public facility management; 2 per cent worked in scientific research services and geological surveying; and 2 per cent in manufacturing and accounting.<sup>10</sup> 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 of carbon sink forests and environmental services.<sup>11</sup>

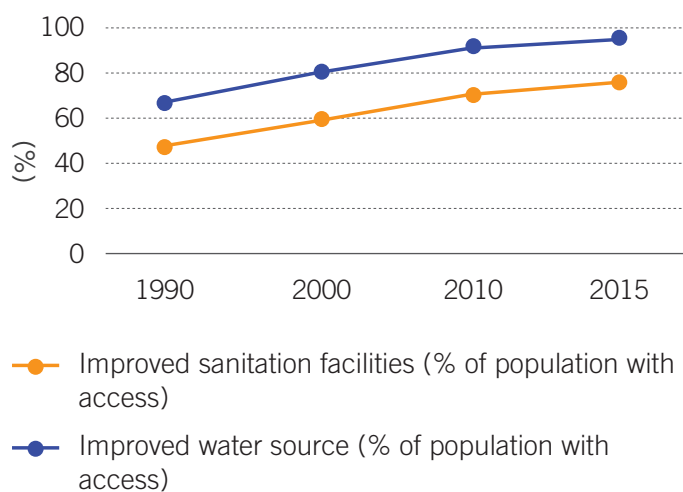
9. Institute for Labor Studies and Ministry of Human Resources and Social Security: *Green employment in China* (Beijing, ILO, 2010), [http://www.ilo.org/beijing/what-we-do/publications/WCMS\\_155395/lang--es/index.htm](http://www.ilo.org/beijing/what-we-do/publications/WCMS_155395/lang--es/index.htm)

10. *Ibid.*

11. 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>.

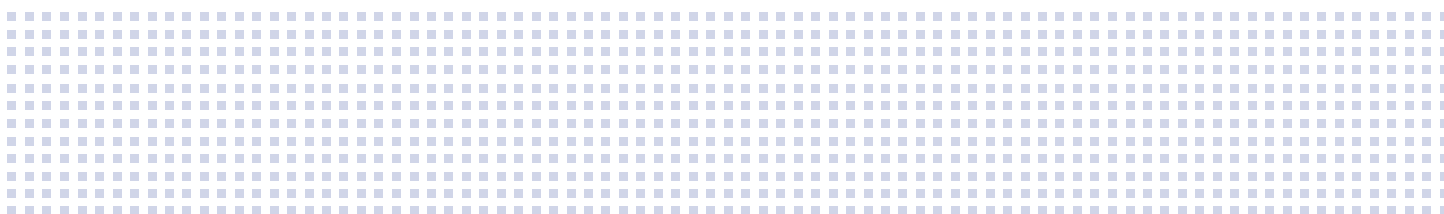
Since 1990, the percentage of the population with access to improved water supply has increased 28.6 percentage points, to 95.5 per cent in 2015. There was a 29-percentage point increase in access to improved sanitation between 1990 and 2015, reaching 76.5 per cent (Fig. 10). Both access indicators are still below the ideal threshold of 100 per cent. According to the World Bank, China surpassed the United States as the largest waste generator in 2004, based on the most recent available data.<sup>12</sup> Municipal solid waste generation in China in 2004 was 1.02 kg per capita per day and is expected increase to 1.7 kg per capita per day by 2025.<sup>13</sup> E-waste recycling is an emerging industry in China, with millions of tonnes of e-waste generated each year and combined with illegally imported waste. According to the International Labour Organization (ILO),<sup>14</sup> there is a formal e-waste sector that includes registered and permitted e-waste dismantling and processing enterprises. The industry offers a range of employment, from high-skilled work in large formal enterprises to low-skilled manual work in the informal sector. The informal economy employs a large number of rural migrants within family workshops and small-scale private enterprises. However, working conditions are generally poor due to the lack of measures to protect workers from exposure to toxic and hazardous substances. E-waste management can provide both employment and poverty alleviation opportunities.<sup>15</sup> Continued improvement in water and sanitation access and waste and e-waste management will provide environmental benefits by reducing landfill and underground pollution along with opportunities for decent green job creation, especially if formal employment is offered for the most vulnerable workers in society.

**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).

In 2014, only 57.2 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.<sup>16</sup> The share of renewable energy in total energy consumption, however, as growth in renewables has not kept pace with overall consumption. In 2000, it was 30 per cent but fell below 16.4 per cent in 2011 and then slightly increased to 17.1 per cent in 2014 (Fig. 11). Renewable energy generation gradually increased between 2011 and 2015, with hydropower the main source of renewable energy in 2015 (Fig. 12). In 2016, approximately 4 million people were employed in the renewable energy sector, with 50 per cent of them in solar photovoltaic (Fig. 13). The country's employment rate in electricity, gas, steam and air conditioning was only 2.3 per cent in 2011 (Fig. 9). With the push for increasing reliance on renewable energy, there is potential for decent job opportunities in the future.



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

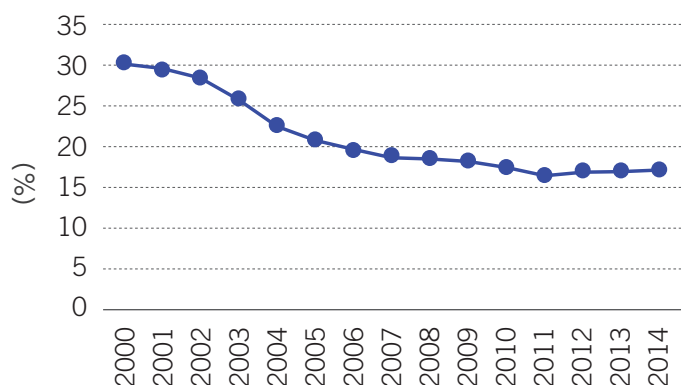
13. *ibid.*

14. ILO: *Labour, human health and environmental dimension of e-waste in China* (Beijing, ILO, 2015).

15. *ibid.*

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>.

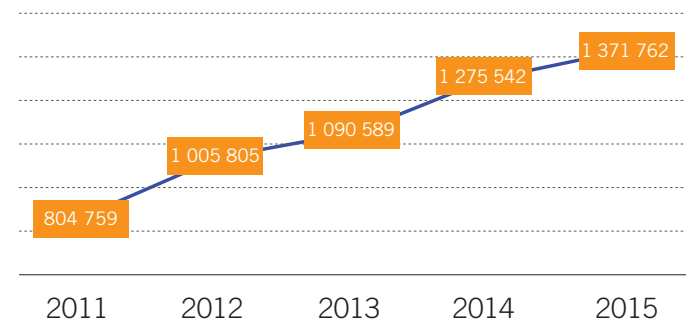
**Figure 11. Renewable energy share in total final energy consumption, 2000-14**



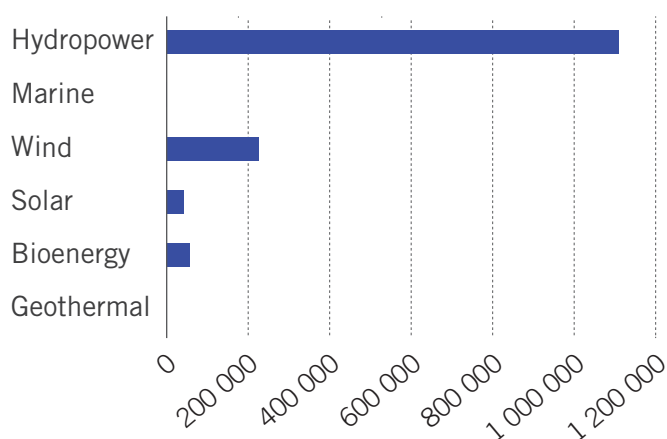
Source: ILO compilation using UN: SDG indicators: Global database (2017), <https://unstats.un.org/> (accessed 17 July 2017).

**Figure 12. Renewable energy generation, 2011-15**

**Total renewable energy electricity generation (GWh)**

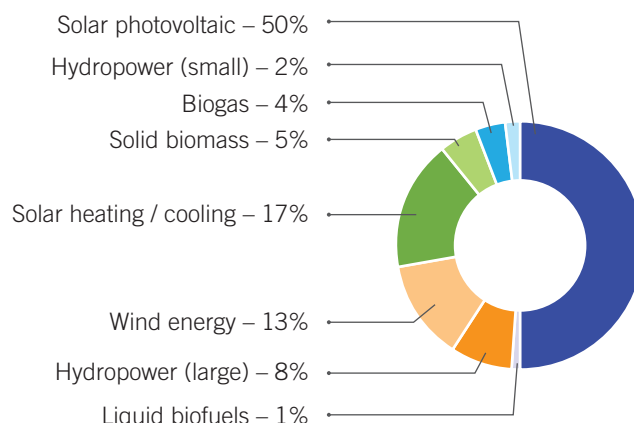


**Renewable energy electricity generation (GWh), by technology 2015**



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

**Figure 13. 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 China 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.

Disclaimer: The designations used in International Labour Organization publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Organization concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers