

## PERU

Peru is a resource-rich Latin American country which economic growth has been driven by commodity exports, especially of agricultural products, hydrocarbon and mineral resources that make up about three-quarters of total Peru's exports. Large multinationals have been playing a key role in national mining industry and the country's integration into global value chains. Peru's recent growth performance has been impressive with strong progress made in reducing poverty. Since 2000, GDP growth has averaged 5% per annum, compared to the Latin American average of 3.2% and the OECD average of 2%. Although the unemployment rate remains low, 46% of Peruvian workers are in vulnerable employment (figure 3). There is also a large informal sector, at close to 70% of the total employment, which contributes to low levels of productivity. Persisting poverty pockets in rural areas coexist with the capital Lima that hosts the vast majority of the country's high value services, manufacturing and transport and logistics. High levels of informality, low levels of skills and innovation, under-developed infrastructure and large inter-regional disparities weigh on Peru's development perspectives. In view of falling global commodity prices, Peru is currently undergoing a transition away from a commodity-export economy towards an economy oriented towards industry and services. The National Plan for Production Diversification (PNDP) was implemented in 2014 and aims at promoting the diversification of the country's production structure.

**Table 1.** Gross domestic expenditure on R&D (GERD)

	PER	OECD
<b>GERD</b>		
USD million PPP, 2004	263	1 181 495
As a % of total OECD, 2004	0.0	100
<b>GERD intensity and growth</b>		
As a % of GDP, 2004	0.16	2.38
(annual growth rate, 2009-14)	n.a.	(+2.3)
<b>GERD publicly financed</b>		
As a % of GDP, 2014	n.a.	0.61
(annual growth rate, 2009-14)	n.a.	(+2.5)

**Figure 1.** Major STI policy priorities, 2016





## Hot issues

### Improving the education system

Peru lags well behind most Latin American countries in terms of both investment in human capital and the quality of employment and education. While the percentage of adults at tertiary education level is still within the middle range of OECD values, students' performance in science is very low (figure 4<sup>iv</sup>). Over the last four years, the government has increased the funding and attention given to the education sector in general. The new University Law (N 30220, 2014) has introduced important reforms that are set to improve the quality and relevance of public R&D and maintain the autonomy of universities. One of the milestones of this law is the creation of the SUNEDU (Superintendencia Nacional de Educación Superior Universitaria). This body oversees and controls the quality of universities and regulates the public funds allocated to them. The teaching profession in Peru faces many challenges that negatively affect education quality at all levels of education. In 2012, the Ley de Reforma Magisterial was passed to improve the quality of teaching in public schools. The reform aimed to introduce more performance-based criteria in teaching career development, better labour conditions, and incentive schemes to promote continuous professional development.

### Improving the attractiveness of scientific and research careers

Research funding for PhD students and postdoctoral scientists is low in terms of OECD standards. They are often forced to accept additional jobs and end up pursuing scientific careers abroad, resulting in a brain drain. The government has therefore established new funds and grants specifically targeted to foster careers in science and technology. The National Body of Researchers unites highly qualified scientists who can be seconded to universities, research centres and businesses. To institutionalise bilateral scientific partnerships, the Fund for Science and Innovation between Peru and the United Kingdom was launched in 2015. The National Council for Science, Technology and Innovation (CONCYTEC) and the UK Foreign Commonwealth Office (FCO) finance research stays and joint projects of Peruvian and British scientists to foster international and high-level skills transfer. The FCO provides up to USD 1 million PPP (GBP 0.7 million), from which USD 0.5 million PPP (GBP 0.3 million) will be transferred to the CONCYTEC.

### Addressing challenges of STI globalisation and increasing international cooperation

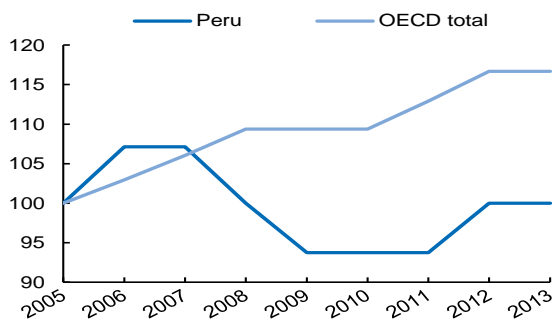
In 2015, Peru revised its ten-year export plan to diversify exports, promote private and public sector co-ordination, and develop its position as a regional exporter of products and services. The plan focuses on the development of technology-driven service sectors such as software, electronics, engineering consultancy and franchises to enhance sophistication and productivity. In accordance with the national PNDP, the export plan also emphasises possibilities for Peruvian firms to integrate global value chains.



## Some key STI performance indicators

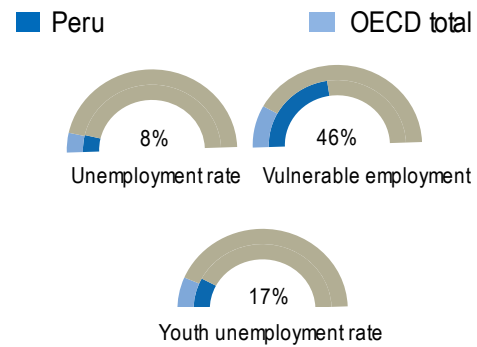
**Figure 2.** Environmental performance

Green productivity, GDP per unit of CO<sub>2</sub> emitted, index 2005=100



**Figure 3.** Unemployment

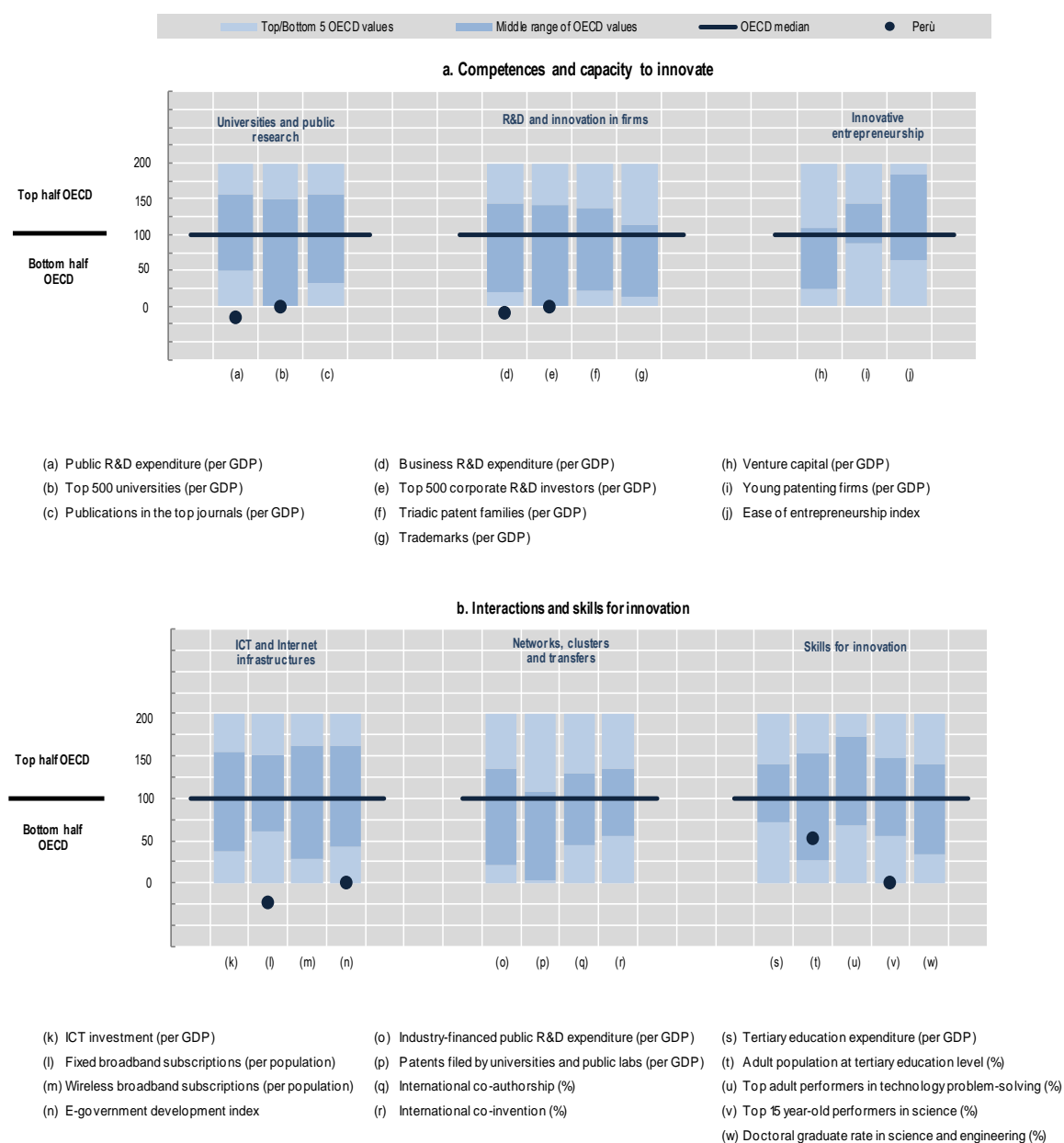
2015 or latest year available, percentages





## Some key STI performance indicators

**Figure 4.** Science and Innovation in Peru  
Comparative performance of national science and innovation systems, 2016



Note: Normalised index of performance relative to the median values in the OECD area (Index median=100).







## Highlights of the Peruvian STI system

### New sources of growth

In 2015, the Institute for Agricultural Innovations (INIA) started implementing the National Agricultural Innovation Programme, aiming to improve the profitability and competitiveness of the agricultural sector, mainly through the adoption of sustainable and environmentally secure technologies. This programme has a budget of USD 176 million PPP (PEN 600 million) and is financed by the Inter-American Development Bank, the World Bank and the government. Extended regional policies are a major element of the new industry policy. A smart specialisation programme for southern Peru was implemented in 2015, with cross-cutting priority areas, namely biotechnology, nanomaterials, ICTs and the environment.

### New challenges

Peru faces an array of safety, health and environmental challenges. Its environmental performance increased between 2011 and 2012, but stagnated between 2012 and 2013 on a still low level (figure 2). Lima is one of the South American cities that is most affected by air pollution, according to a 2014 study by the World Health Organisation. In 2016, CONCYTEC launched the National Programme on Environmental Science. It is the major STI policy initiative to support innovation for green growth. Key objectives are : 1) to strengthen the National System of Science and Technology (SINACYT) in the environmental field; 2) to improve cooperation between different actors; 3) to increase the number of researchers on environmental challenges, and 4) to promote research initiatives addressing environmental challenges and to improve the infrastructure and equipment of PRIs. These instruments are aligned with the Strategy of Environmental Research 2010 21 of the Ministry of Environment, which includes 157 priority lines of research on environmental issues.

### STI policy governance

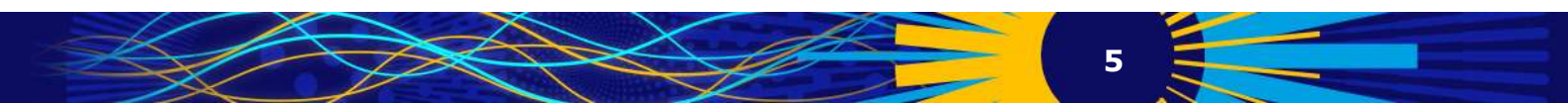
The first R&D census was conducted in 2016 by the CONCYTEC in association with the National Institute of Statistics and Informatics (INEI) in order to provide basic data on R&D expenditures and human resources in universities and research institutions.

### Innovation in firms

In 2015, the World Economic Forum identified Peru's inefficient government bureaucracy as the major challenge for doing business. The National Innovation Programme for Competitiveness and Productivity (Innovate Perú) was established in 2014 in accordance with the PNDP. Its major objective is to strengthen and promote innovation in the private sector. The programme administers three funds (FINCYT, FIDECOM and FOMITEC), partly in cooperation with the CONCYTEC. The government places high emphasis on competitive grants to support business R&D and innovation, as well as indirect tax incentives, technology consulting and extension programmes (figure 5). Furthermore, a publicly funded programme for start-ups was set up in 2014 to provide seed finance for promising business plans.

### ICT and Internet infrastructures

Statistics on fixed broadband subscriptions indicate that widespread Internet access is still at an early stage of adoption (figure 4<sup>1</sup>), although it has expanded recently in the most urbanised departments. In 2013, almost 40% of households in Lima and Callao had Internet access. The integration and application of online services by the government as measured by the e government development index is poor in terms of OECD standards (figure 4<sup>2</sup>).





## Technology transfer and commercialisation

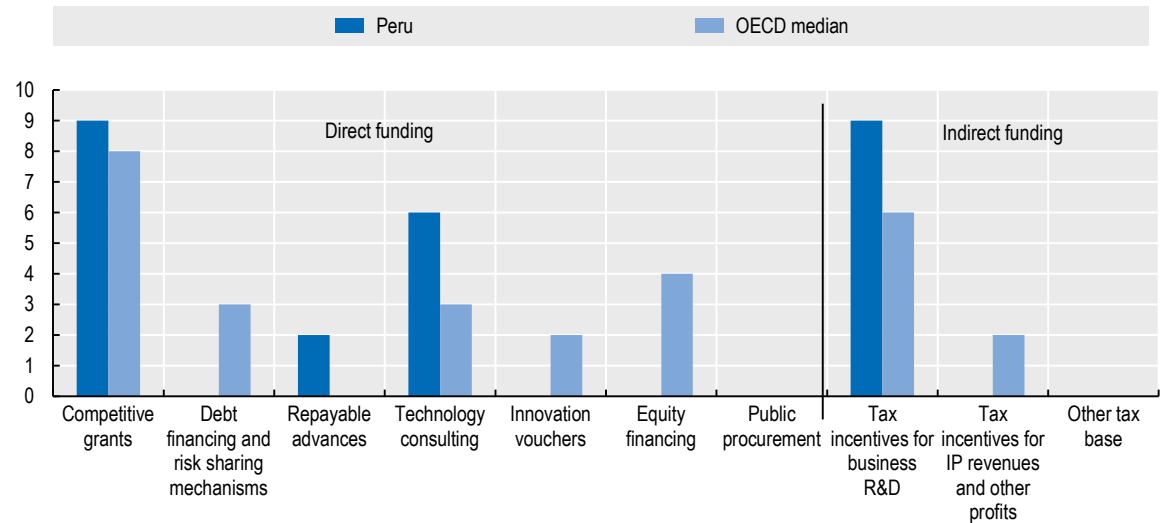
Two initiatives currently promote technology and knowledge transfer in Peru: the Centres of Excellence initiative *Cienciaactiva*, launched in 2014, and the Technology Transfer Programme. The latter was implemented by the CONCYTEC in 2016 and intends to create technology transfer offices responsible for managing intellectual property and technology transfer at universities and research institutes. The programme will promote linkages between PRIs and enterprises, university spin-offs, and the development of technology parks.

## Skills for innovation

With the overall aim of building a broad innovation culture, the CONCYTEC launched the Programme on Popularisation for STI (2016 21). Specific measures include the STI museum, the Science Week Project, EUREKA and the Science Fair Perú Con Ciencia. The annual National School Fair of Science and Technology (EUREKA) aims to stimulate students' ingenuity, creativity and experimental skills. The Science Fair Perú Con Ciencia represents the largest annual exhibition of STI projects in Peru and attracted more than 30 000 visitors in 2015.

## National STI policy mix

**Figure 5.** Most relevant policy instruments of funding for business R&D, 2016  
Country self-assessment, index (9 = high and increasing relevance to 0 = not used)

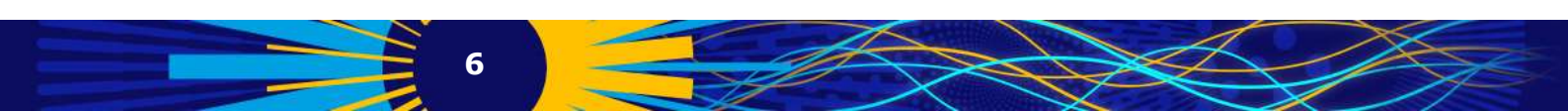


*Note:* Note: Policy information comes from country responses to the EC/OECD STI Policy Survey 2016 and 2014. Peru's responses are available in the EC/OECD STI Policy Database, edition 2016 at [http://qdd.oecd.org/DATA/STIPSurvey/PER...STIQ\\_2016](http://qdd.oecd.org/DATA/STIPSurvey/PER...STIQ_2016).

*Source:* See the reader's guide and methodological annex.

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