

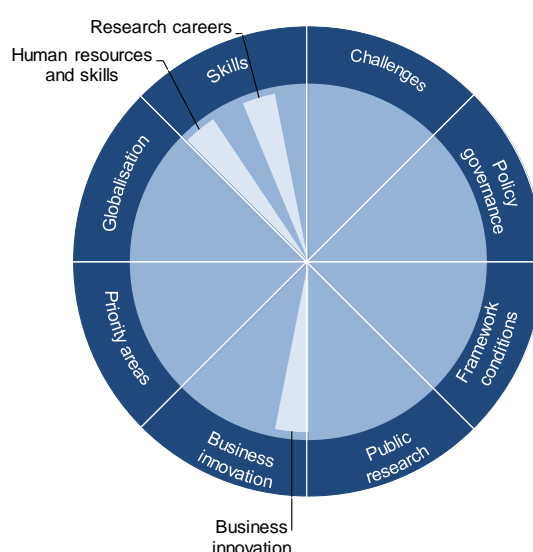
COSTA RICA

Costa Rica has experienced strong export-led growth. The country has achieved a progressive diversification of its export basket, with a growing export share consisting of electronics, instruments and medical devices, and services, mostly ICT-related services. Costa Rica has also succeeded in attracting a rising flow of foreign direct investment, although this means that its economic performance has centred on industries of interest to multinationals. Domestic firms continue to display low levels of productivity and face challenges in becoming a part of global value chains. This is the context for the 2015-21 STI Strategic Plan (PNCTI), which aims to boost growth.

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

	CRI	OECD
GERD		
USD million PPP, 2011	285	1 181 495
As a % of total OECD, 2011	0.0	100
GERD intensity and growth		
As a % of GDP, 2011	0.47	2.38
(annual growth rate, 2006-11)	(+5.8)	(+2.3)
GERD publicly financed		
As a % of GDP, 2011	n.a.	0.61
(annual growth rate, 2006-11)	n.a.	(+2.5)

Figure 1. Major STI policy priorities, 2016



Hot issues

Improving overall human resources and skills

Costa Rica has few top universities (figure 4^b). At 20.9%, the portion of the tertiary-qualified adult population is at the bottom of the mid-range of OECD countries (figure 4ⁱ), and its 15-year-olds perform poorly in science. During the past four years, the government has sought to improve the country's human resources by investing in education, boosting secondary school coverage, promoting entrepreneurship, developing skills that meet firms' requirements, bringing ICTs into the education system, and matching the education programme with the needs of the private sector. To boost these efforts, in 2014 the Ministry of Science, Technology and Telecommunications (MICITT) signed a USD 35 million loan with the Inter-American



Development Bank, with around USD 25 million of this for improving human capital. This will mainly go to scholarships, qualification measures and improving the mobility of researchers. A second pillar focuses on technology transfer projects and the development of entrepreneurial capacities.

Improving the design and implementation of STI policy

In February 2015, the MICITT introduced the National Plan for Science, Technology and Innovation (PNCTI) 2015-21. The plan emphasises the importance of converging technologies and identifies the following strategic areas: education, health, the environment and water, energy, and food and agriculture. Among its key objectives, the plan aims to develop smart cities, reduce the digital divide and promote entrepreneurship. Since 2014, the MICITT has been devoting additional efforts to co-ordinate with key stakeholders in the innovation system in order to strengthen their capacities. One of the ministry's priorities is to stimulate innovation through grants that encourage entrepreneurs and businesses to collaborate with technological start-ups, innovative businesses and research centres.

Strengthening the public research system

Public expenditure on R&D amounts to 0.61% of GDP, which is low compared to the OECD median (figure 4^a), but similar to the level in other Latin American countries. In 2013, the government began a research excellence programme with four public universities that aimed to improve their R&D capabilities and infrastructure. The programme is financed by a USD 286 million PPP (CRC 14.4 billion) loan from the World Bank Higher Education Improvement Project. Research activities will focus on priority sectors and technology areas. The government has allocated 30% of its S&T funds to research projects based on the strategic areas identified above.

Some key STI performance indicators

Figure 2. Environmental performance

Green productivity, GDP per unit of CO₂ emitted, index 2005=100

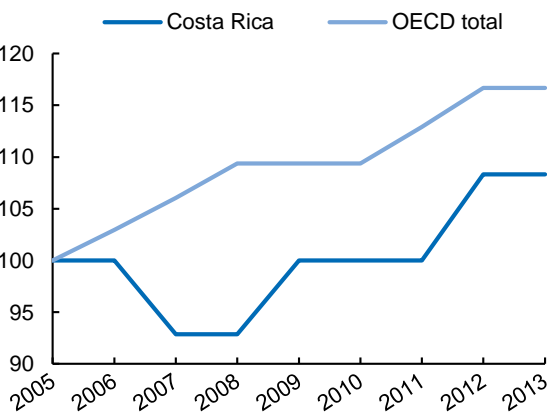
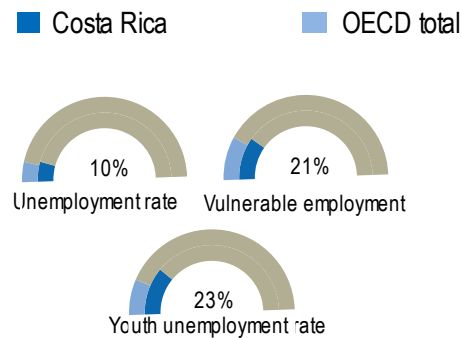


Figure 3. Unemployment

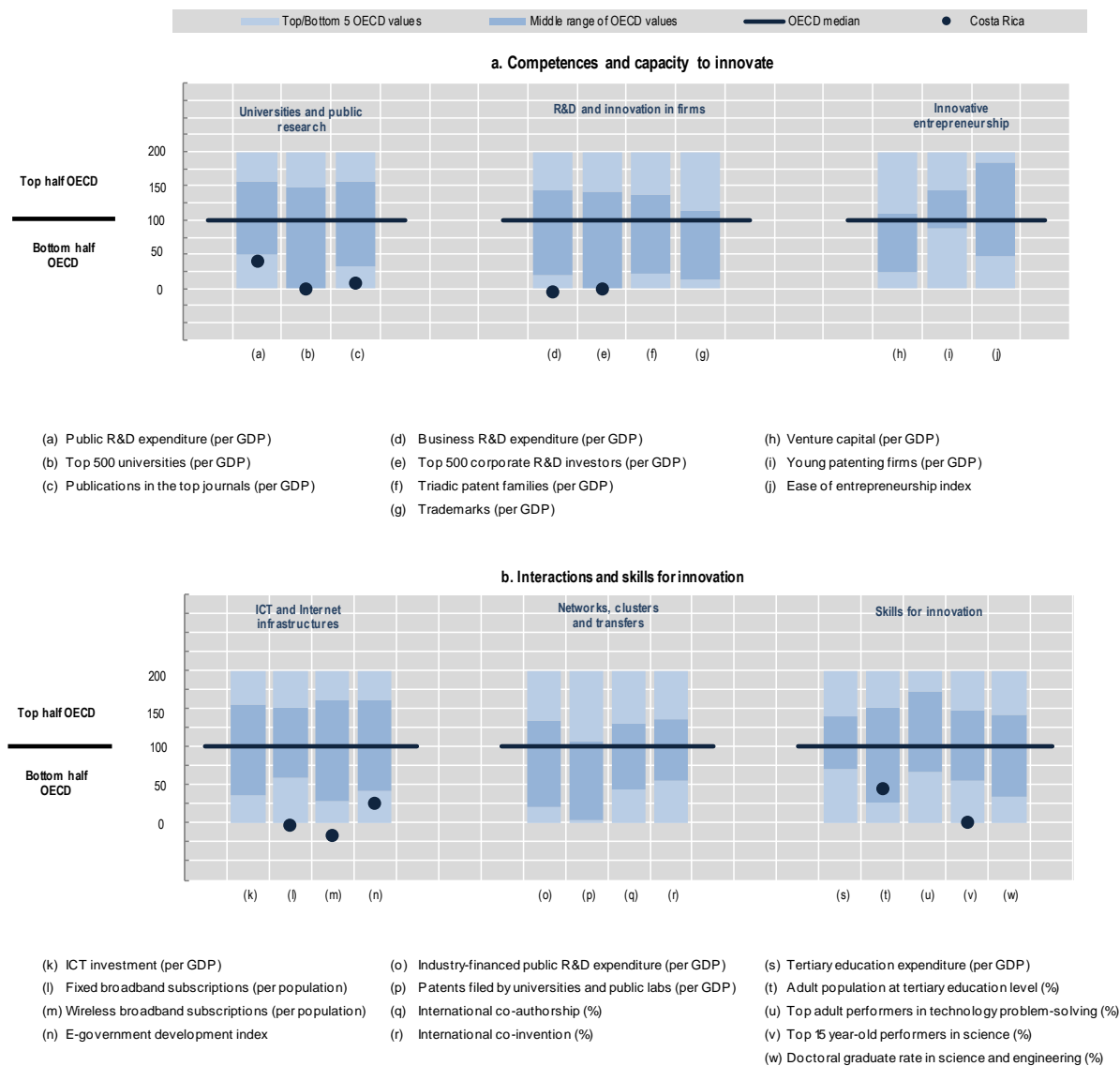
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Benchmarking national STI systems

Figure 4. Science and Innovation in Costa Rica

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 Costa Rica's STI system

New sources of growth

The PND emphasises seven technology areas: renewable energy, nanotechnology, biotechnology, health, biodiversity, ICT, and Earth and space sciences. Tax concessions are also provided for FDI projects in high value-added electronics, manufacturing, materials and electrical components; medical devices, equipment and supplies; automotive devices and supplies; high-precision machinery parts and components; pharmaceuticals and biotechnology; and renewable energy.

Innovative entrepreneurship

Since the 2000s, Costa Rica has made a number of reforms to the country's intellectual property system. The Inter-institutional Commission for the Protection and Promotion of Intellectual Property (CIPPI) co-ordinates the introduction and enforcement of IP-related legislation. In 2011, it developed, with the support of the World Intellectual Property Organization, a national IP strategy. On that basis, Costa Rica is amending the patent law and has reinforced the prosecution of IP violations. In 2012, the government's Funding Programme for SMEs (PROPYME) started to support SMEs in obtaining and protecting IPRs. In addition to the funding programmes (see below), other support programmes include EXPOPYME, an SME forum; CREAPYME, a business consulting service; and the diffusion of lectures and success stories about SMEs on PYME TV and PYME Radio.

Innovation in firms

Costa Rica's BERD as a share of GDP was 0.08% in 2011 (0.18% in 2012 according to national sources), which is well below the OECD median (figure 4^d), but similar to the level in other Latin American countries such as Colombia (0.05%) and Argentina (0.16%). The 2010-14 PND recognised the private sector's weak performance in innovation and the need to strengthen support. Over the last ten years, the government has shifted the emphasis of its policy mix from supply-side to demand-side instruments. The MINCITT has created and reinforced a set of promotional funds and non-financial programmes. The PROPYME supports SME innovation in high-technology industries such as aerospace, automotive and electronics. A seed capital fund, managed by the Ministry of Economy, Industry and Commerce (MEIC), supports technology-oriented start-ups in conducting R&D and in commencing operations. Other funds include the Fondo de Incentivos, FINADE and FORINVES, which also support business innovation through venture-capital financing.

ICT and Internet infrastructures

In July 2013, the Ministry of Public Education announced a plan to increase the use of ICTs in public schools, with an investment of about USD 28.4 million PPP (CRC 10 billion). This plan is clearly valuable, given the low levels of fixed and wireless broadband subscriptions in Costa Rica relative to the OECD median (figure 4^{l,m}).

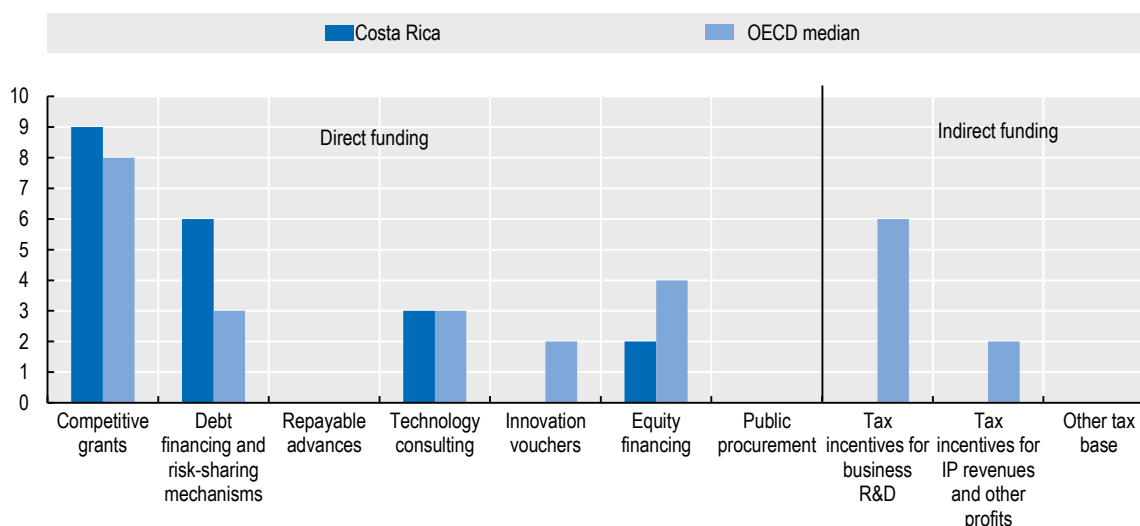
Globalisation

Costa Rica's research and innovation ecosystem is well connected internationally. International co-authorships account for 74% of S&T publications, and international co-inventions for 46% of PCT patent application, both well above the OECD median (figure 4^a). However, this also reflects the small size of the country's innovation system. Connecting domestic business to foreign MNEs to boost local industry is also an important policy issue.



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: Policy information comes from country responses to the EC/OECD International Survey on STI Policies (STIP) 2016 and 2014. Costa Rica's responses are available in the EC/OECD International Database on STI Policies, edition 2016 at http://qdd.oecd.org/DATA/STIPSurvey/CRI...STIO_2016.

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

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