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Further reforms would boost innovation in China, says OECD

China needs a better return on its fast-rising investments in research and development (R&D) and higher education if it is to meet its goal of becoming an “innovation-oriented” economy by 2020, according to a new OECD report.

In its first review of China’s innovation system, the OECD says China still has a long way to go to build a modern, high-performance national innovation system. R&D spending has increased at an annual rate of 19% since 1995 to reached USD 30 billion (at current exchange rates) in 2005, the sixth worldwide. China has made very impressive investments in R&D, human resources and R&D infrastructure to date, at the same time, China has still a long way to go to build a full-fledged and mature national innovation system. But much of this focused on the high-technology sector, updating equipment and facilities, and experimental research for new products rather than on basic research, the foundation of long-term innovation. More investment is needed in sectors such as services, energy, environmental technology and basic research.

Looking ahead, China could also face a shortage of skilled workers in science and technology, despite currently having more researchers than any other country except the United States. In recent years, undergraduate degrees in science have even fallen in absolute terms. China should improve the quality of science education to attract more students, with more emphasis on managerial expertise and entrepreneurship.

Despite a series of reforms since the mid-1980s, the innovative capabilities of the Chinese business sector remain weak. Further reform of China’s financial system which is still dominated by state-owned banks would help business innovation. Fostering more open and efficient capital markets would also enable entrepreneurs to take greater risks and invest in sectors, such as biotechnology, which require long-term investments.

To encourage domestic firms to innovate and benefit more from closer ties with R&D centres of foreign companies, the government should enforce intellectual property rights (IPRs) more effectively and strengthen competition.

Universities play a key role in China’s innovation system. They run more than one in ten Chinese science and technology (S&T) firms, account for one in five patents granted each year and provide venture capital to promising start-ups. Further reform of these public research organisations would help increase the quality and efficiency of researchers: this is important because current demand for talented managers or highly qualified researchers exceeds supply.

China should also improve its governance of science and innovation policy. Its ability to allocate public resources to support government priorities has played a key role in closing the technological gap between China and the rest of the world. But the design, management and evaluation of programmes could be improved and made more market-oriented.

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The central government should consider creating a mechanism to co-ordinate initiatives more effectively across government departments at the national level and set guidelines to avoid duplication in regional and national science and innovation programmes. Creating an independent agency to monitor and evaluate the success of programmes would also help.

China's emergence as a global player in science and innovation should benefit both China and the rest of the world. To manage its smooth integration into the global knowledge economy, China and OECD countries need to maintain a spirit of dialogue and co-operation, notably over issues such as IPR, technology transfer and technology standards.

China is not a member of the OECD but it participates in OECD work as an Observer on some OECD Committees. The OECD review of China's innovation system is part of a co-operation programme launched in 1995 as part of the OECD's outreach to non-member countries. The OECD has already published other studies, including reviews of the Chinese economy, governance in China, and policies to attract foreign direct investment.

To receive a copy of the **OECD Review of China's National Innovation System**, journalists are invited to contact the OECD's Media Division (tel: + 33 1 4524 97 00). For further information, journalists should contact Gang Zhang or Jean Guinet of the OECD's Science, Technology and Industry directorate.

For more information on the OECD and China in Chinese: www.oecdchina.org