India's share of world research according to Science and Engineering Indicators 2016

The 2016 report of Science and Engineering Indicators[1] shows that China and India continue to rise, while the developed economies slow down.

Appendix table 5-26 of the Science and Engineering Indicators[1] compiles science and engineering (S&E) articles in all fields, by region/country/economy for the period 2000–2013 using a fractional count basis[2]. Appendix table 6-3 arranges the nominal GDP, again by region/country/economy for the period 1999–2015 in terms of millions of current dollars[3]. After some further cleaning and processing these data can be rearranged as shown in Figure 1, so that the world share of publications can be plotted against the world share of nominal GDP. There is good correlation between these two indicators – the higher the share of GDP, the higher the S&E output; this is captured in Figure 1.

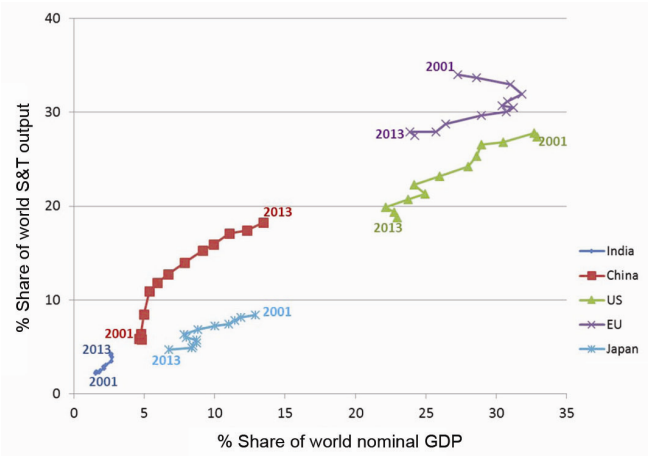

Figure 1. Trajectories of various regions and countries from 2001 to 2013 as world share of publications plotted against the world share of nominal GDP – the higher the share of GDP, the higher the science and engineering output.

Figure 1 also shows the trajectories of the various regions and countries over the period 2001–2013. USA, the European Union and Japan continue to slow down. China and India show steady progress, as reported earlier[4–7].

1. http://www.nsf.gov/statistics/2016/nsb20161/#/ (accessed on 4 March 2016).
2. http://www.nsf.gov/statistics/2016/nsb20161/#/data (accessed on 4 March 2016).
3. http://www.nsf.gov/statistics/2016/nsb20161/#/data (accessed on 4 March 2016).
4. Prathap, G., *Curr. Sci.*, 2008, **94**, 1113.
5. Prathap, G., *Curr. Sci.*, 2010, **98**, 1160–1161.
6. Prathap, G., *Curr. Sci.*, 2012, **103**, 351–352.
7. Prathap, G., *Curr. Sci.*, 2014, **106**, 649–650.

GANGAN PRATHAP

Vidya Academy of Science and Technology,
Thrissur 680 501, India; and
A.P.J. Abdul Kalam Technological University,
Thiruvananthapuram 695 016, India
e-mail: gangan@vidyaacademy.ac.in

DBT/MST should fund prudently

The National Biotechnology Development strategy is exciting indeed[1,2]. The ambition is to turn Indian biotechnology into a 100 billion US dollars industry by 2025. However, how much money DBT/MST is going to invest is not mentioned. Is it really possible to achieve this ambition – within just another 9 years? What are the specific products, goods and services that are going to be generated to be commercialized to the above extent? Though the areas and stakeholders have been identified, the answer to the above question is not clear. How much local and international market is visualized is also not clear. A fact that needs to be remembered is that biotechnology goals can be of long term like development of a drug, vaccine, crop variety, conventional or transgenic, etc. and also involve considerable investment.

Therefore only short-term goals which can be commercialized and those which have already done enough work in the fulfilment of different biotechnological goals – that is, they require only a little more time and money to achieve the goals – should be funded. This requires a lot of sincere and intelligent effort in identifying the right research groups both in public and private sector.

1. http://pib.nic.in/newsite/PrintRelease.aspx?relid=134035
2. http://www.ptinews.com/pressrelease/16640_press-subDr--Harsh-Vardhan-Unveils-National-Biotechnology-Development-Strategy-2015-2020

A. S. RAO

Department of Biotechnology,
Bharathidasan University,
Tiruchirappalli 620 024, India
e-mail: adhikarla@gmail.com