

Sustainable development in
developing countries:
the role of S&T capacity building

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FST

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Sustainable Development

- Each generation should leave at least as large a productive base for its successor as it inherited from its predecessor

Productive Base:

Manufactured capital

Human capital

Natural/Environmental capital

+ Institutions, cultural coordinates

Social worth of
these assets =
wealth of a nation

Source: Partha Dasgupta

Economic Strength



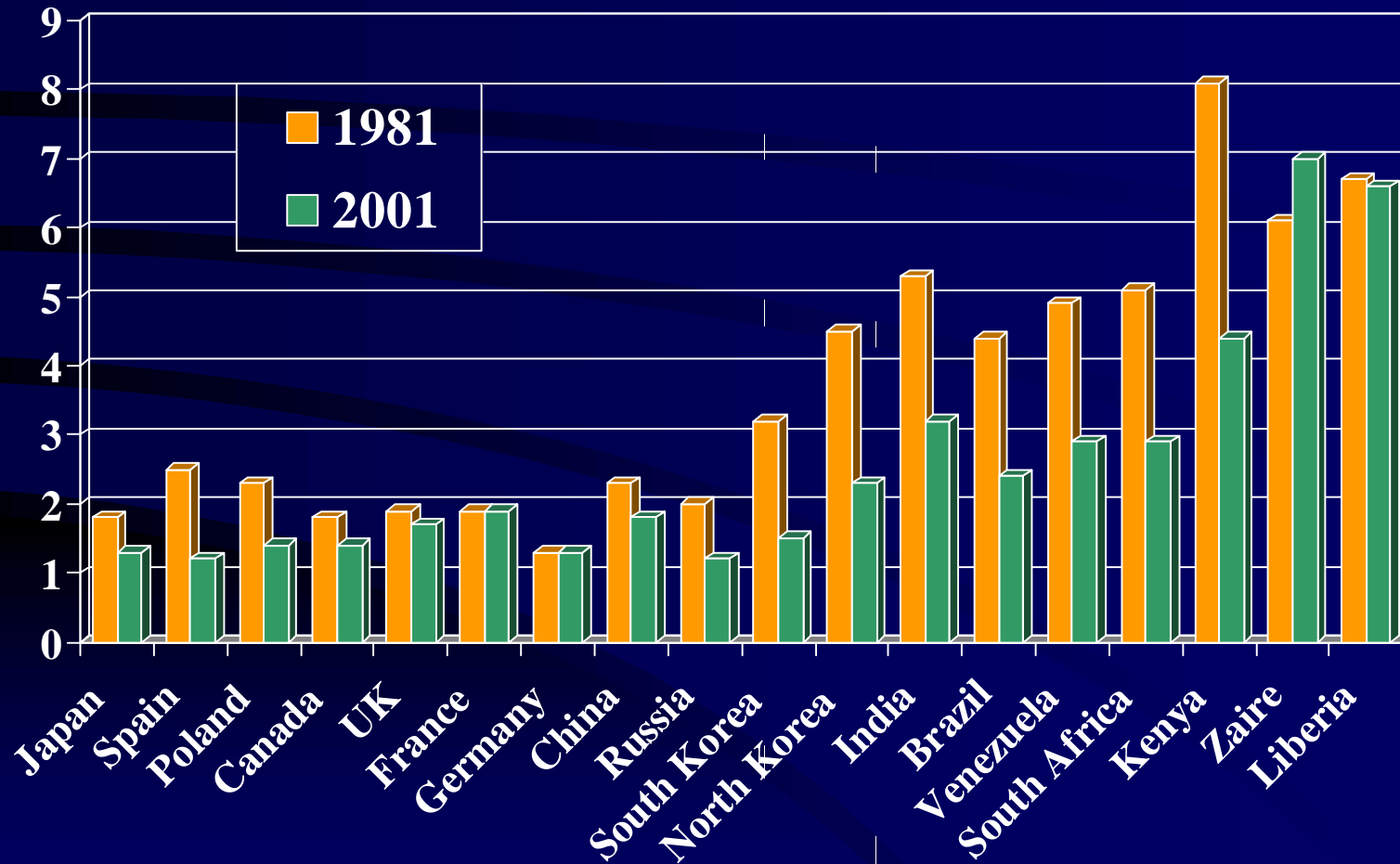
Indigenous S&T Capabilities

World Science Citations

Country	% share of world publications	% share of world citations	Rank order
USA	34.9 ↓	49.4 ↓	1
EU15	37.1 ↑	39.3 ↑	
UK	9.4 ↑	11.4 ↑	2
JAPAN	9.3 ↑	8.4 ↑	4
CANADA	4.6 ↓	5.3 ↓	6
CHINA	3.2 ↑	1.6 ↑	18
INDIA	2.1 ↓	0.9 ↑	21
BRAZIL	1.2 ↑	0.7 ↑	22
SOUTH AFRICA	0.5	0.3	25
IRAN	0.13 ↑	0.06 ↑	26

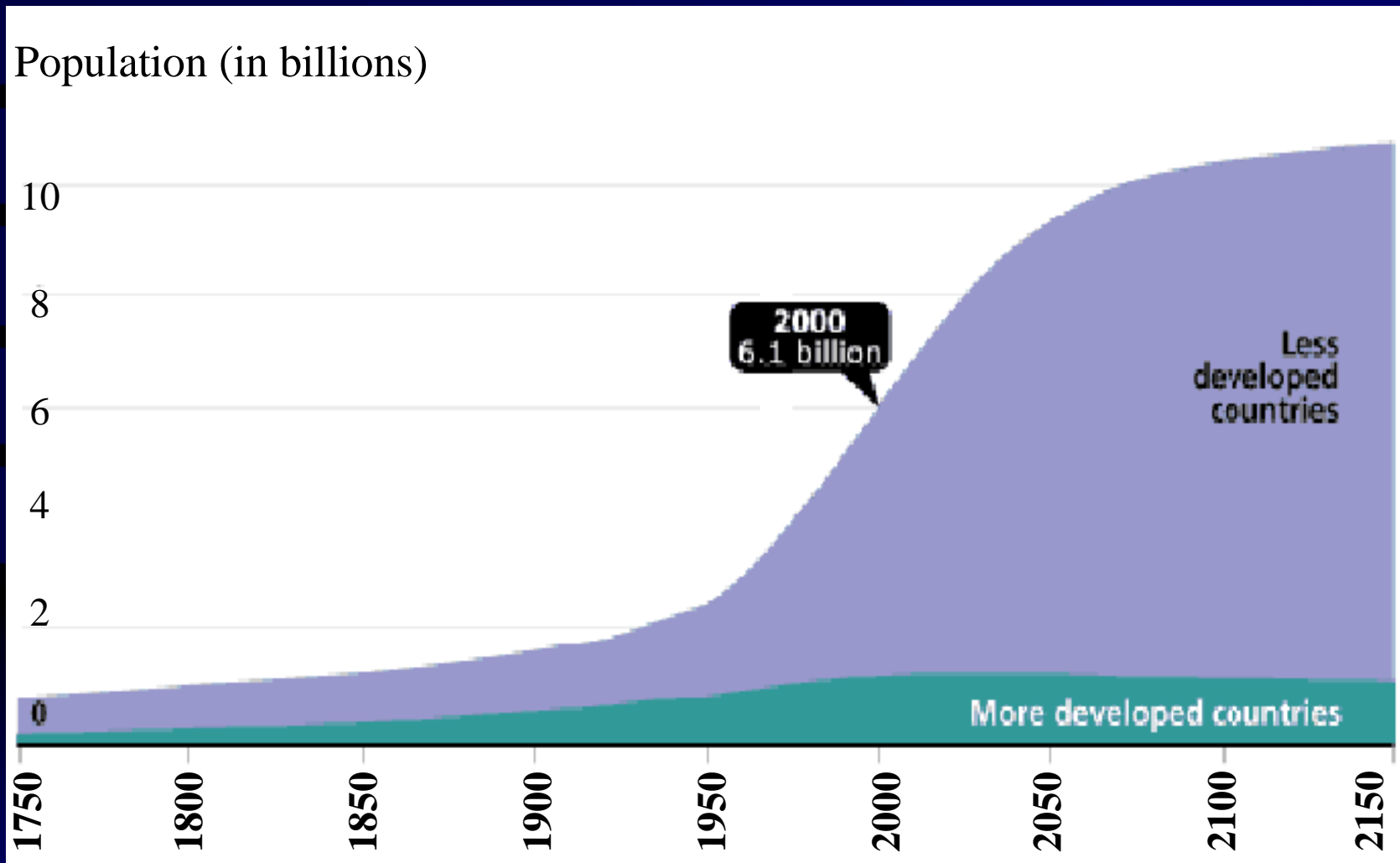
Source: OST

Fertility Rates: Number of Children per Woman



Source: Population et sociétés, INED

World Population Growth 1750–2150



Source: United Nations, *World Population Prospects, The 1998 Revision*; and estimates by the Population Reference Bureau.

India

- First PM, Pandit Jawaharlal Nehru – deep faith in S&T
- Sustained investment in school, HE and S&T
- Development of Indian Institutes of Technology (IITs), funded by UK, USA, Russia & Germany post 1947

Some exceptional individuals.....

Professor Swaminathan



PhD in Genetics at Cambridge, 1952

Scientific leader of the Green Revolution in India

Professor Jhunjhunwala

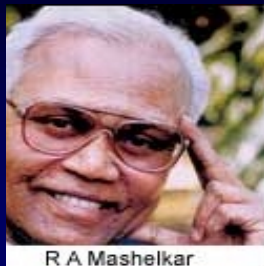


Trained at IIT, Kanpur

Head of Electrical Engineering, IIT Chennai

Affordable ICT access to urban and rural areas

Dr Mashelkar



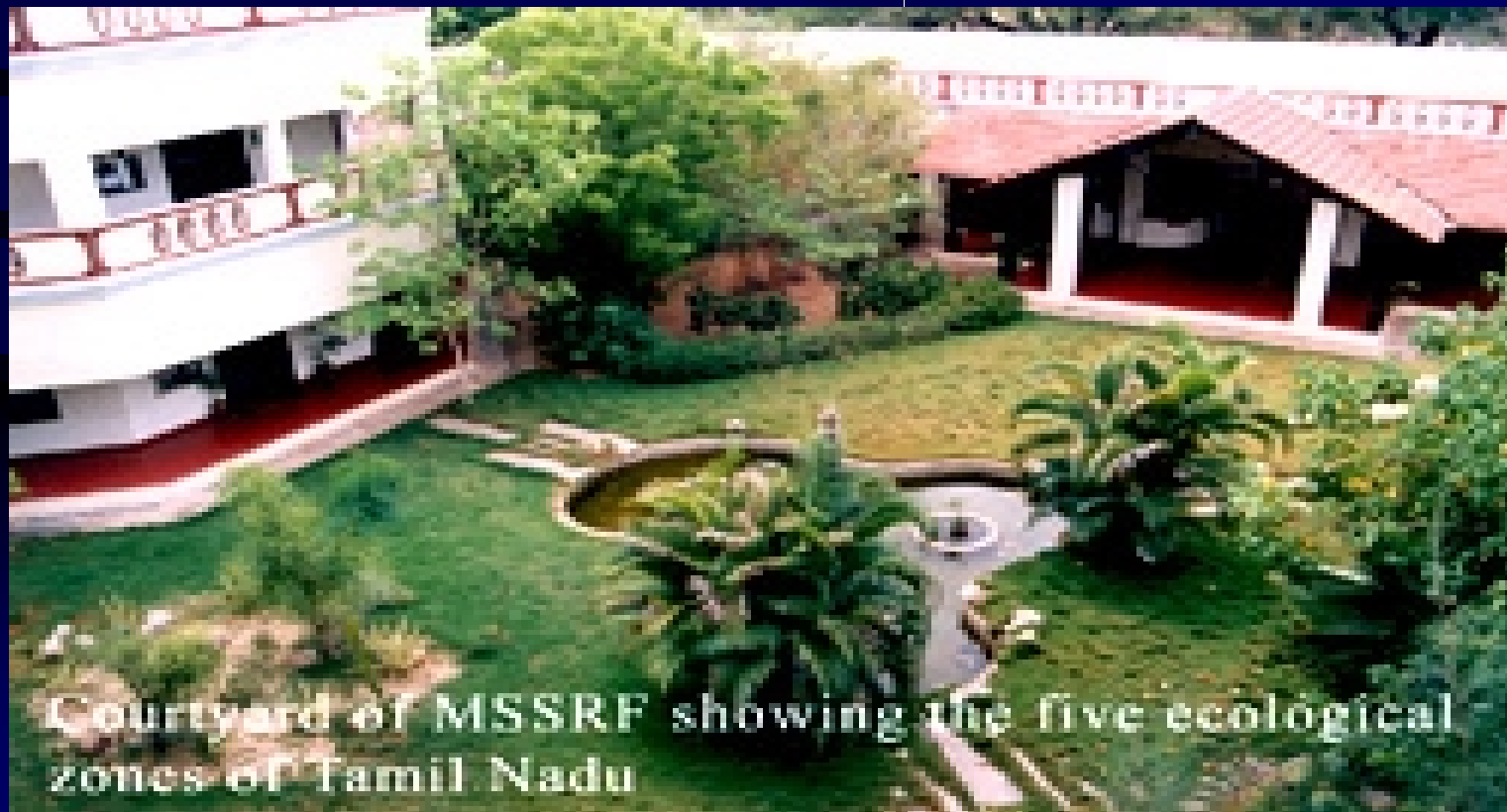
R A Mashelkar

Trained in UK

Director of Council for Scientific & Industrial Research

M S Swaminathan Research Foundation

- Uses latest biotechnology / plant science to promote sustainable development



The Challenge for Africa

- NEPAD - S&T Action Plan
- Co-ordinated North-South programme of activity required
- Rebuilding of primary, secondary and higher education
- African Institutes of Technology e.g. AIMS, KIST

African Institute for Mathematical Sciences (AIMS)

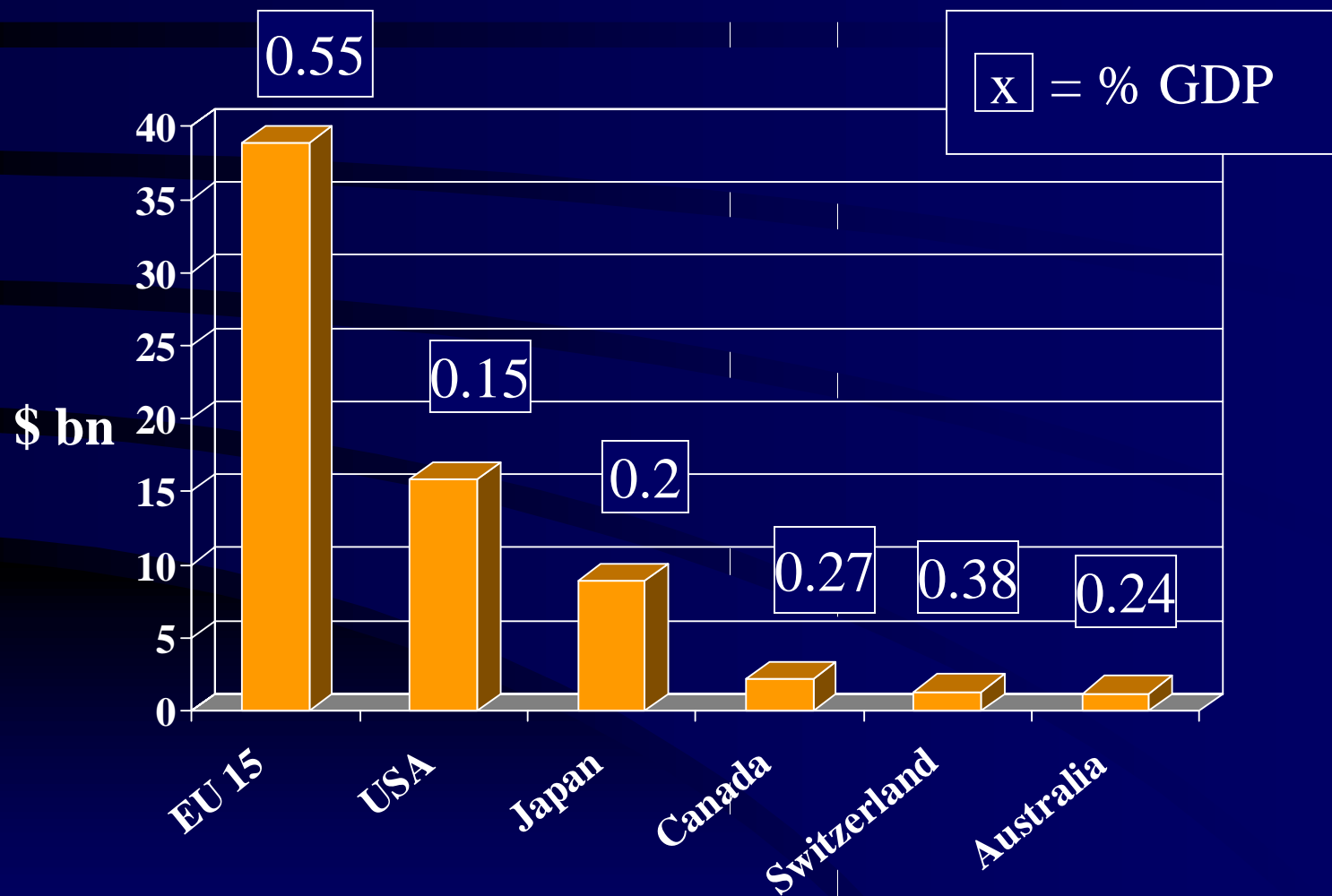
- Highly innovative project involving collaboration between 3 South African Universities and University of Cambridge
- Goal is to attract a new generation of African students to the mathematical sciences
- And thus to strengthen scientific & technological capacity across Africa
- 35 students will graduate this year

AIMS



Net Official Aid, 2003

Total: \$67 bn



Source: OECD

What is needed?

- Since WSSD 2002, more recognition of the value of S&T in meeting development needs.
 - Many calls for clear, co-ordinated and urgent action from the international community
- InterAcademy Council Report: ‘Inventing a better future’ Jan 2004
 - Calls for all countries to draw up national S&T plan and to contribute to a global implementation strategy for maximising global S&T capacity

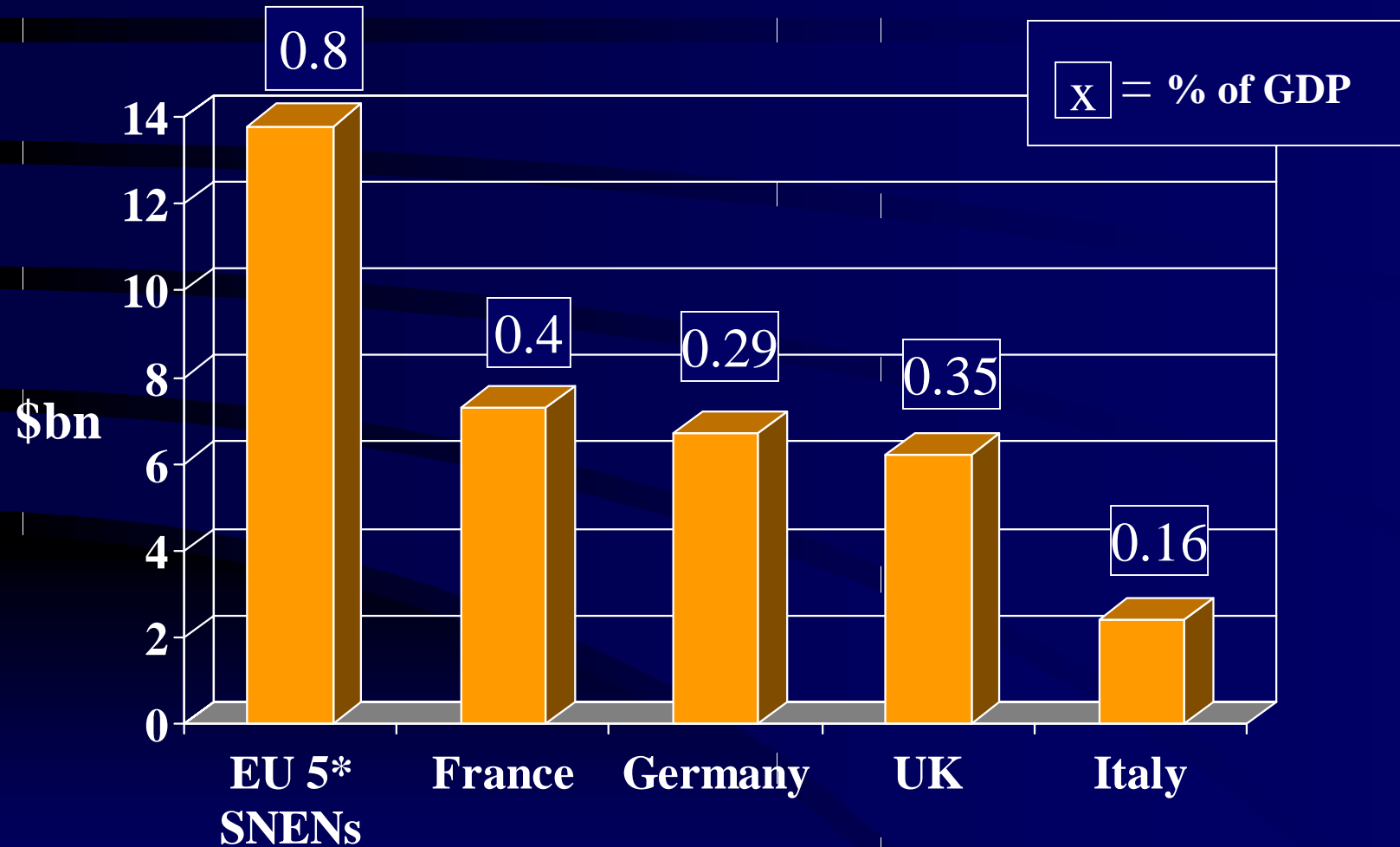
How should UK Government respond?

OST Scoping Project Interim Report has concluded that:

“there is presently little systematic approach to S&T capacity building in the UK, and a more holistic approach is required before the UK can engage *optimally* with international partners.”

Net Official Aid, 2003

EU contributors



Source: OECD

*Norway, Denmark, Netherlands, Sweden & Belgium