

Changing models of scholarly communication and the geography of authorship

Key Perspectives Ltd

Published science

Sources:

- **ISI Science Citation Index**
- **United Nations population statistics**
- **World Bank economic indicators databases**

ISI Science Citation Index

- Peer-reviewed journals
- English language abstracts and keywords
- Authors from multiple countries
- So... certain national or regional journals are excluded

Total database records (SCI)

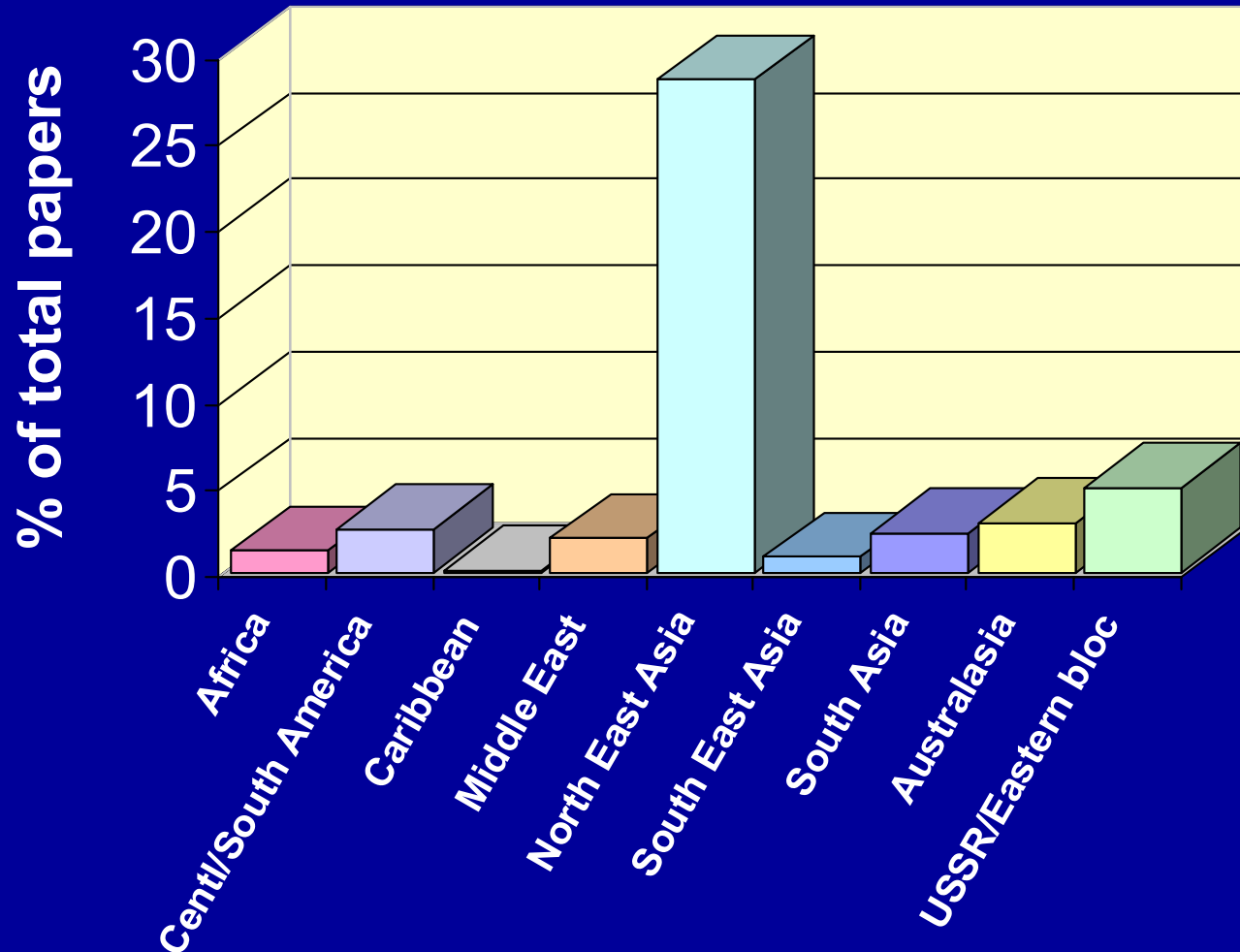
- 1983: 672,417
- 1993: 754,305
- 2003: 1,111,397

'Western' science output

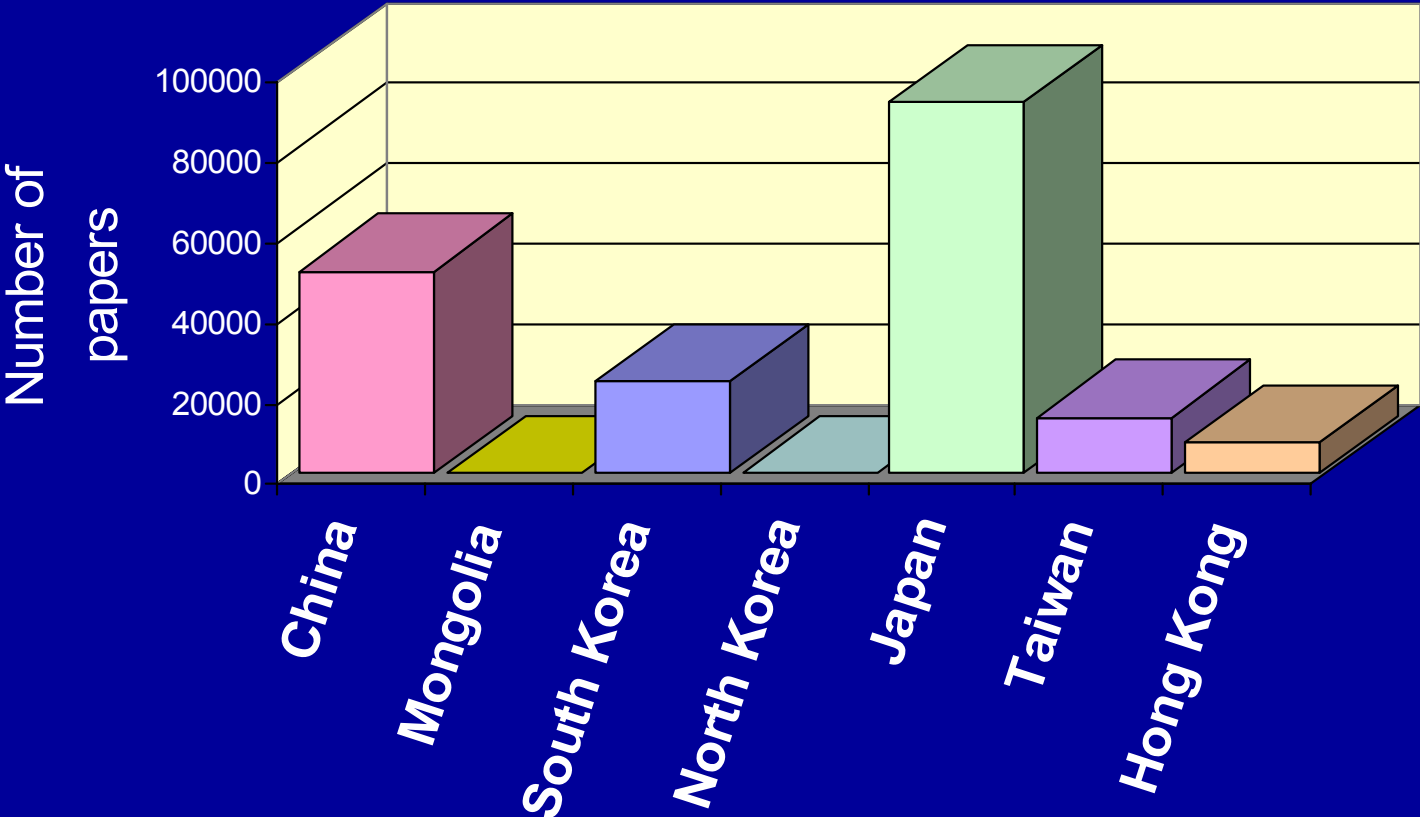
Publications from North America
and Western Europe account
for:

- 1983: 75% of total records
- 1993: 70% of total records
- 2003: 50% of total records

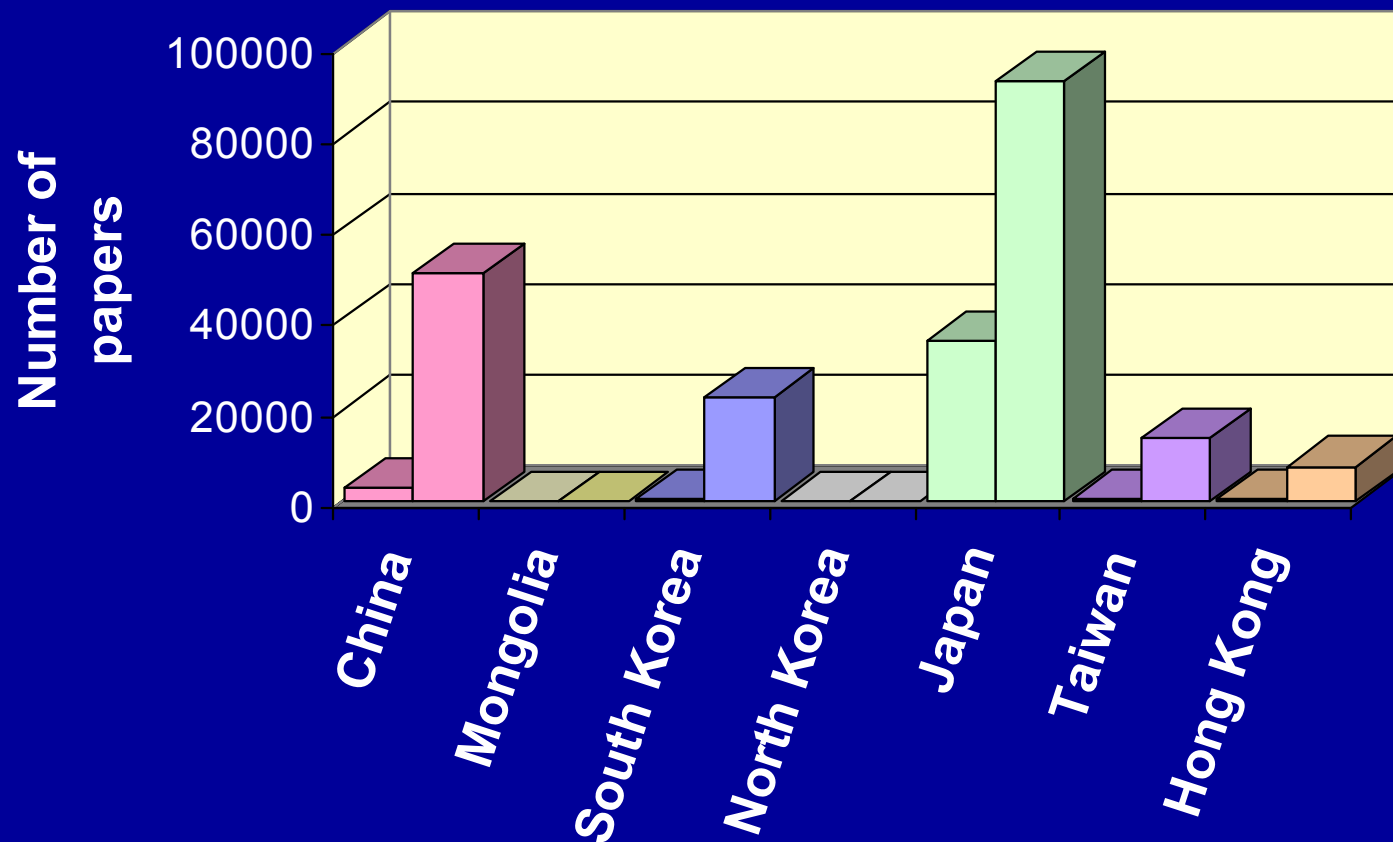
Percentage of total papers 2003



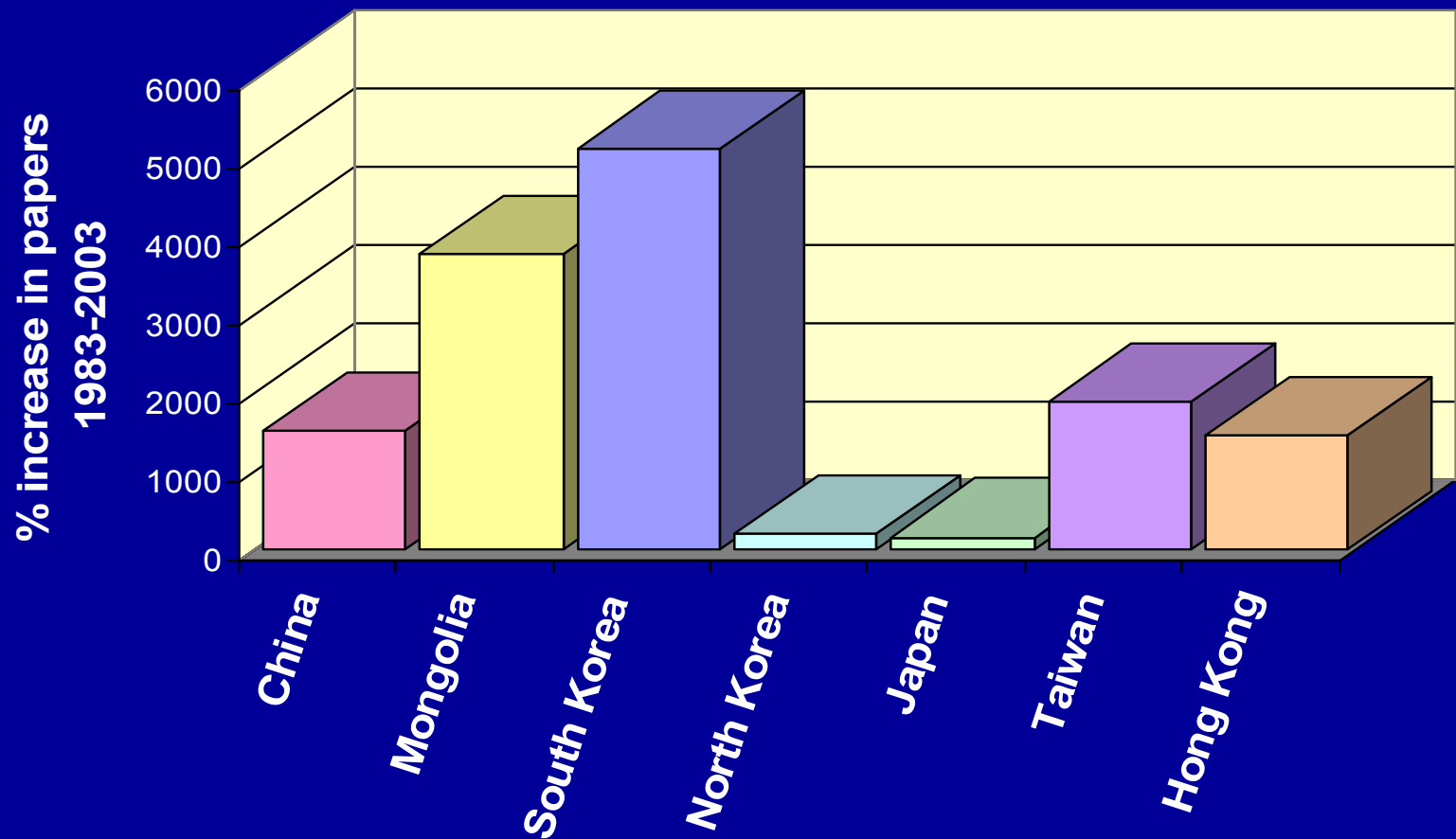
North East Asia: papers published 2003



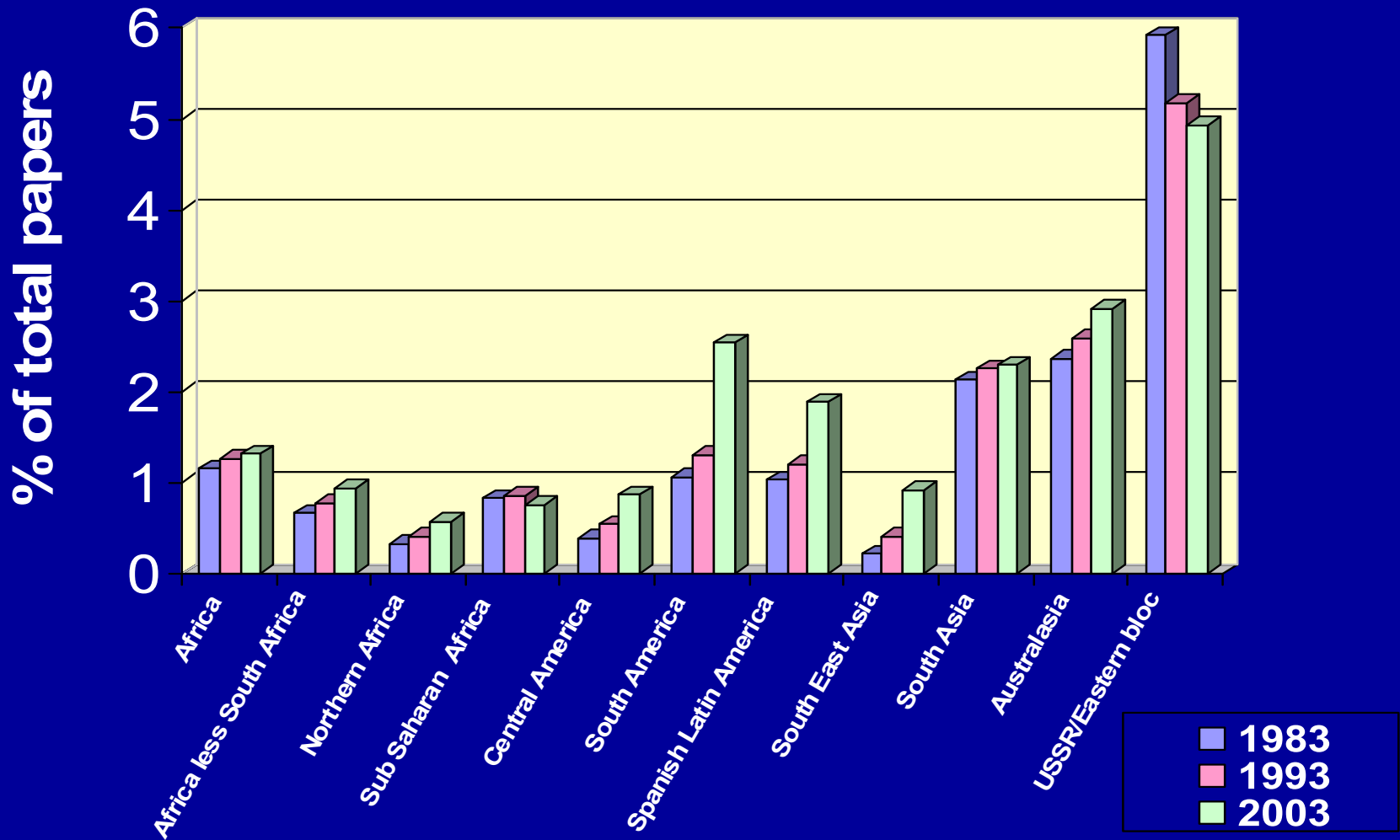
North East Asia: Number of papers published 1983/2003



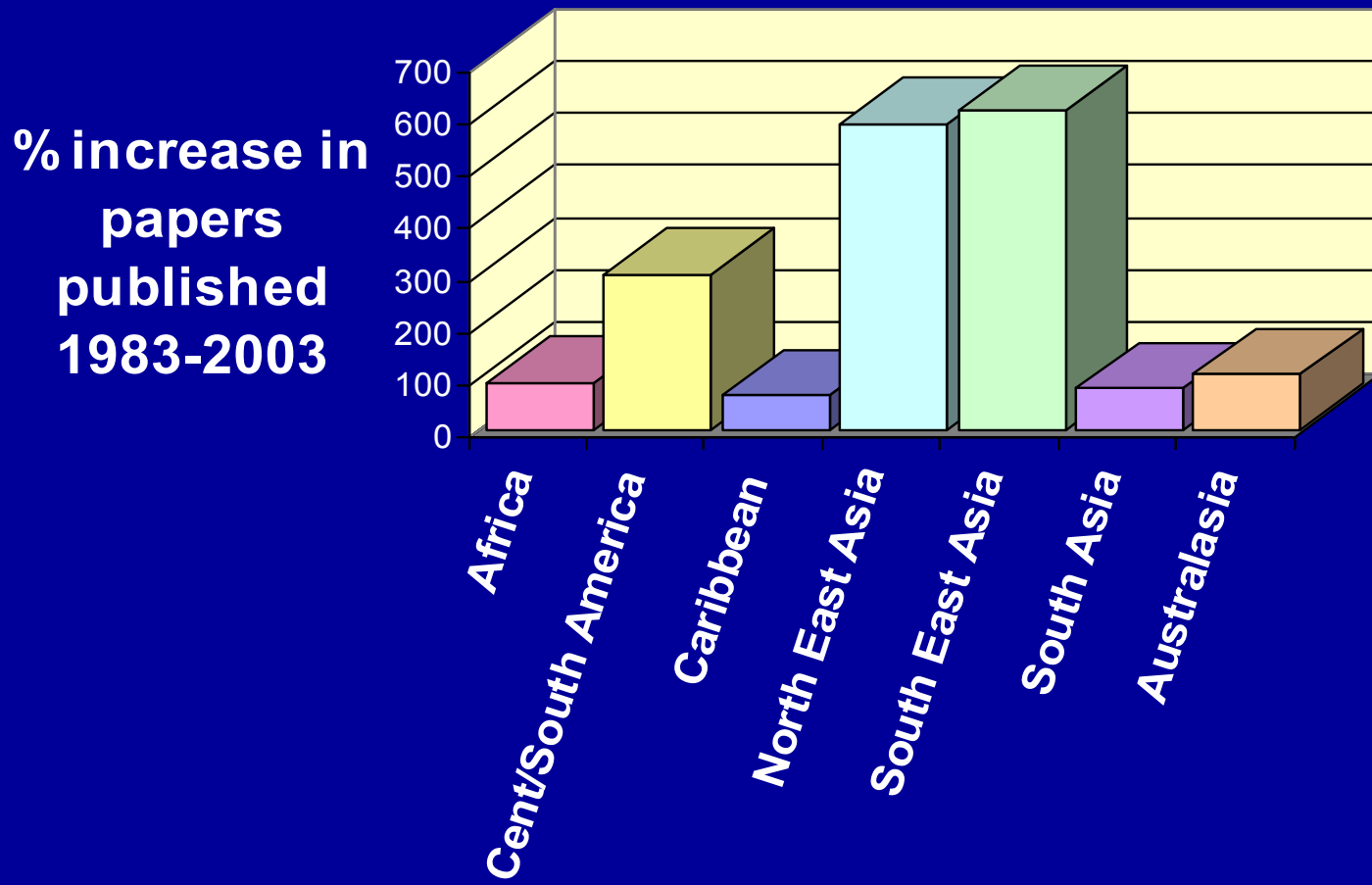
North East Asia: % increase in papers published 1983-2003



Regions and subregions: % papers published 1983-1993-2003



Growth in science output 1983-2003

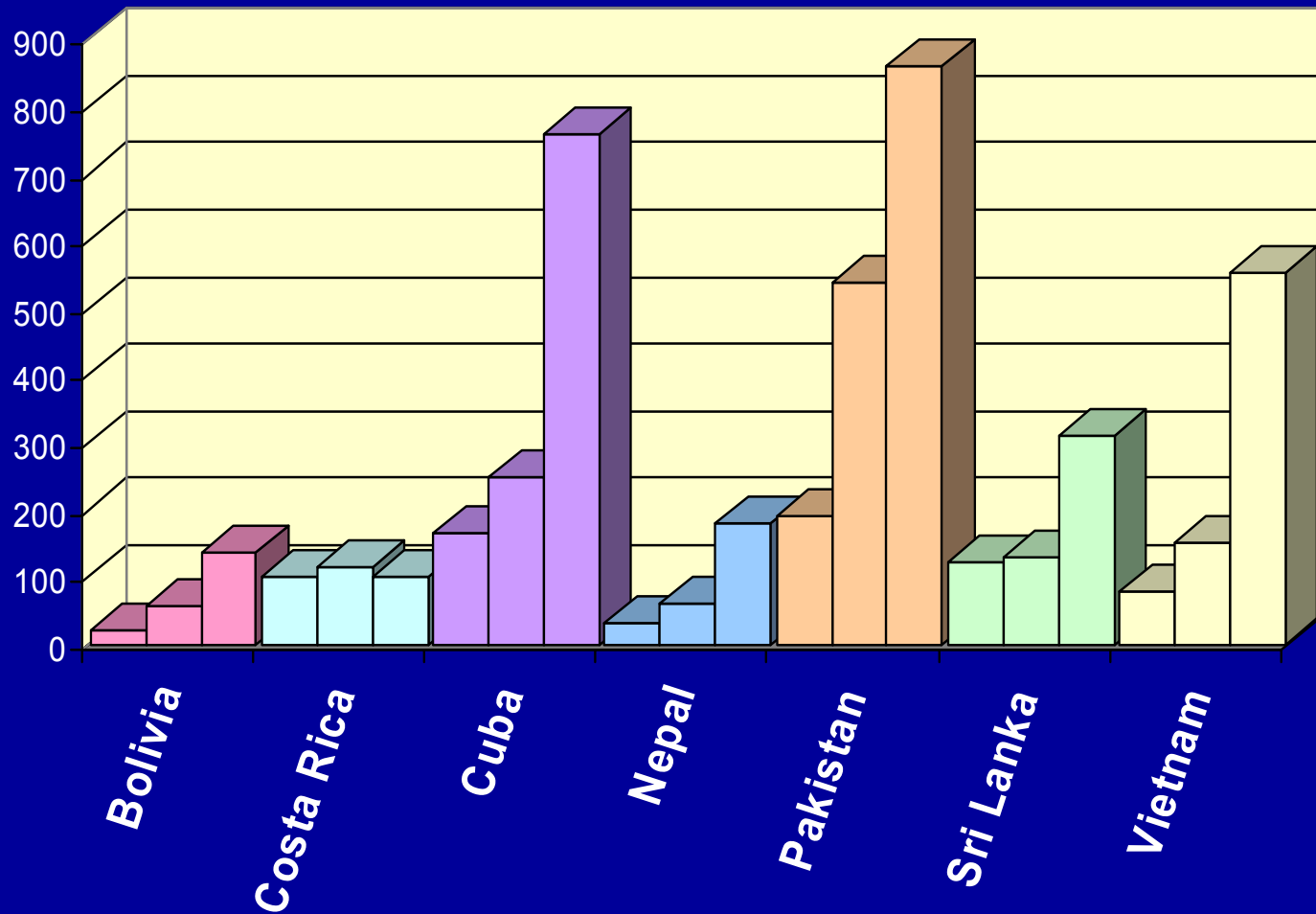


Focus on selected regions and countries

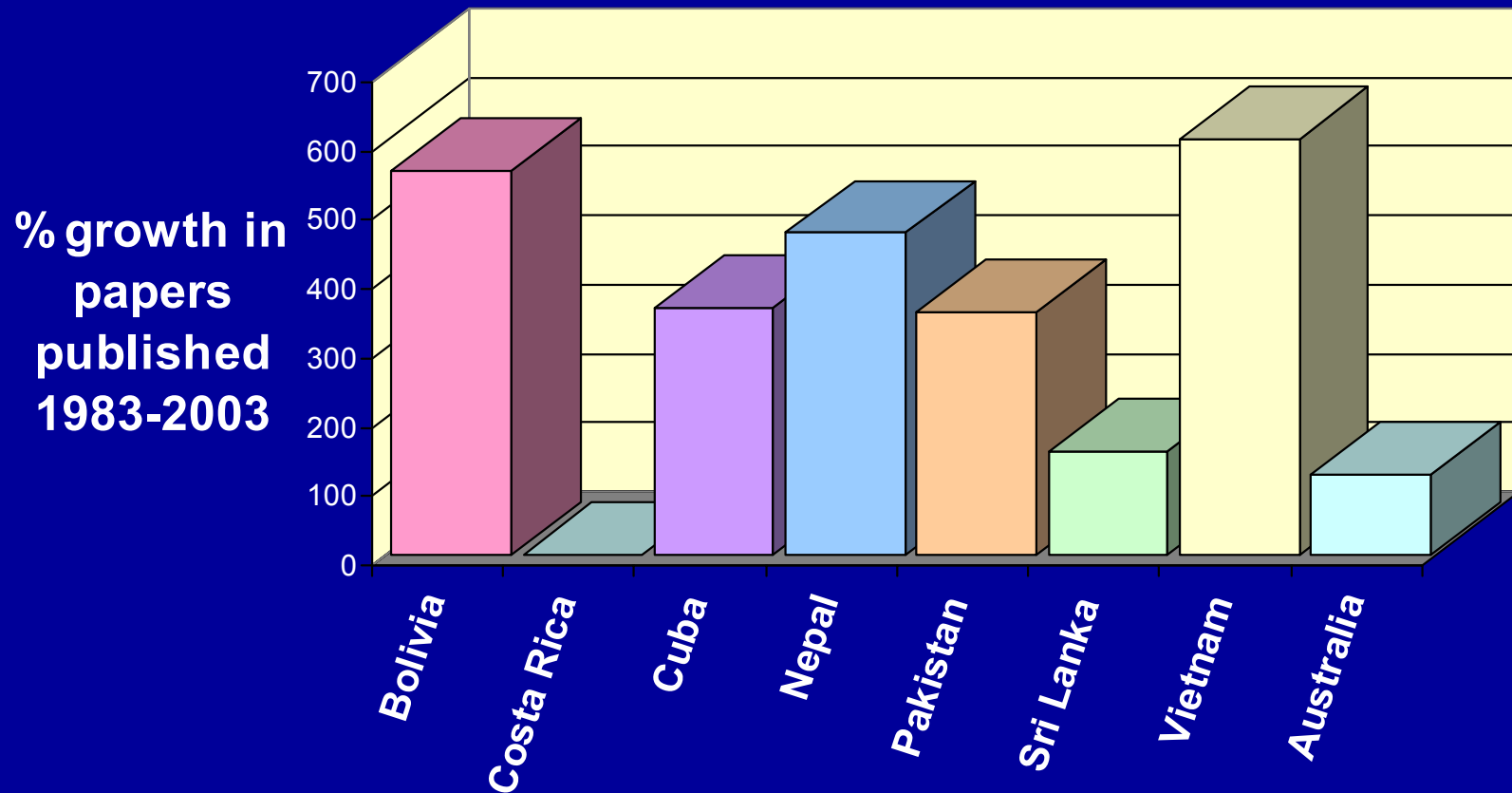
- Bolivia
- Costa Rica
- Cuba
- Nepal
- Pakistan
- Sri Lanka
- Vietnam
- Latin America
- South Asia

Science output 1983-1993-2003

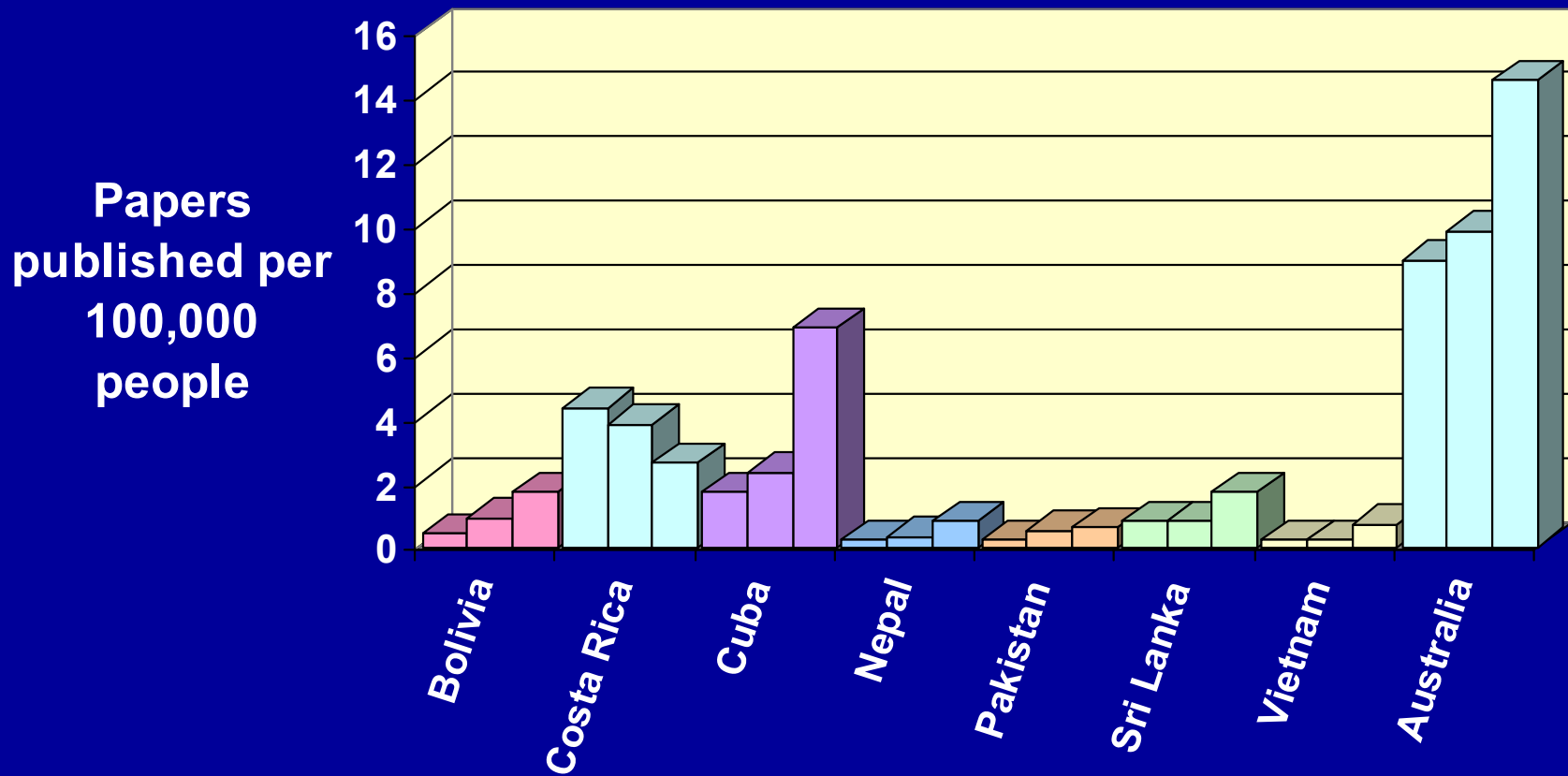
Papers
published:
1983; 1993;
2003



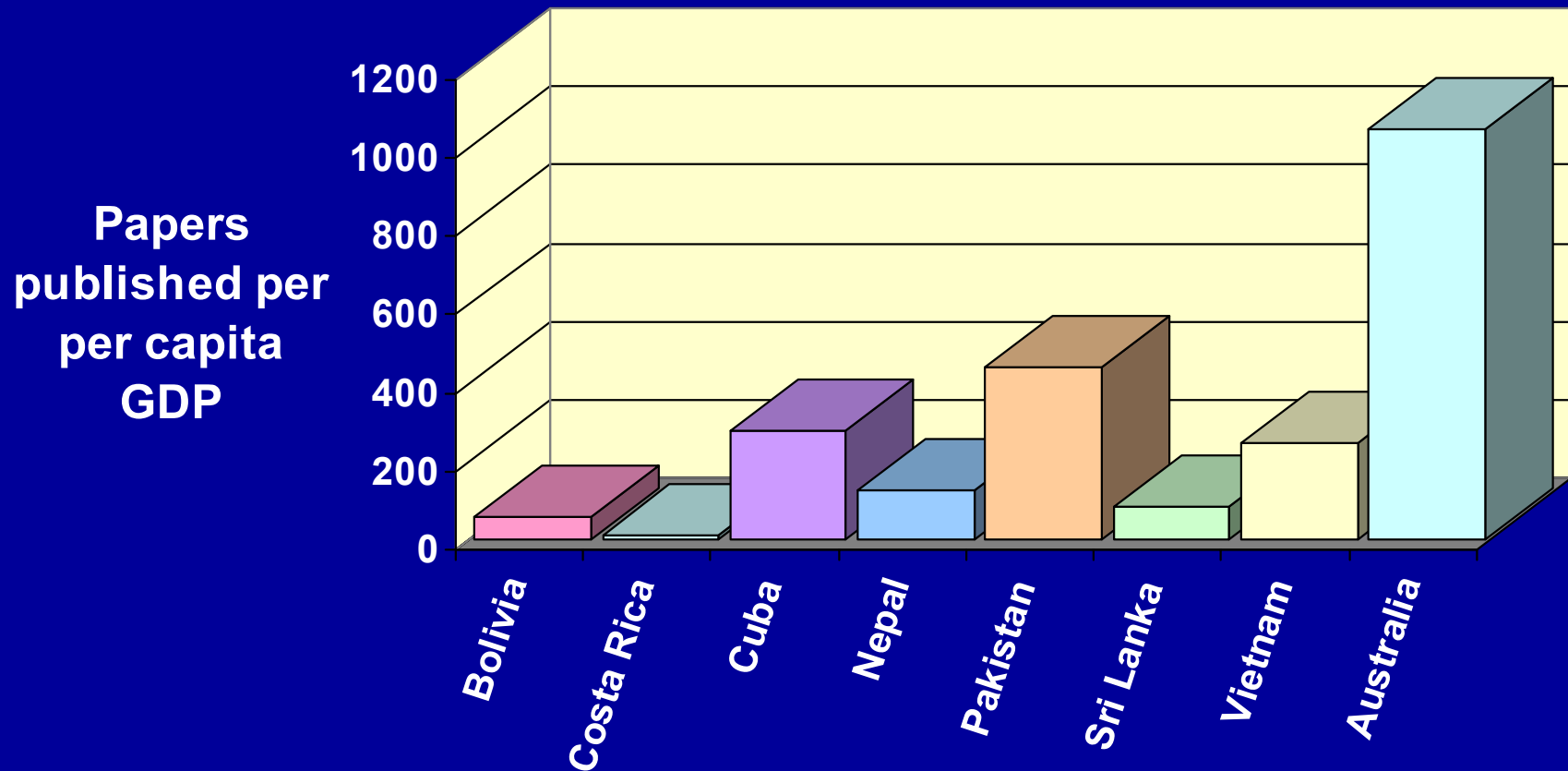
Growth in science output 1983-2003



Science productivity per capita



Science productivity by GDP



What is being published and where

Bolivia	Environmental Sciences (10%)	American Journal of Human Biology
Costa Rica	Biology (23%)	Revista de Biologia Tropical
Cuba	Agriculture, Dairy & Animal Sci (13.4%)	Cuban Journal of Agricultural Science
Nepal	Tropical medicine (9.4%)	Journal of Nutrition
Pakistan	Plant sciences (12.6%)	Pakistan J. Botany
Sri Lanka	Agronomy (8.1%)	Current Science
Vietnam	Condensed matter physics (13.5%)	Physica B – Condensed matter

South Asia: Patterns of publishing

1983: Plant sciences (16%)
Medicine, general (8%)
Public health (6%)
Organic chemistry (4%)
Tropical medicine (4%)

1993: Plant sciences (13%)
Chemistry (10%)
Public health (6%)
Tropical medicine (5%)
Agronomy (5%)

2003: Plant sciences (10%)
Public health (5%)
Environmental sciences (5%)
Pharmacology & pharmacy (5%)
Chemistry (5%)

1983: Bangladesh J. Botany
Pakistan J. Botany
Lancet
BMJ
Hadronic Journal

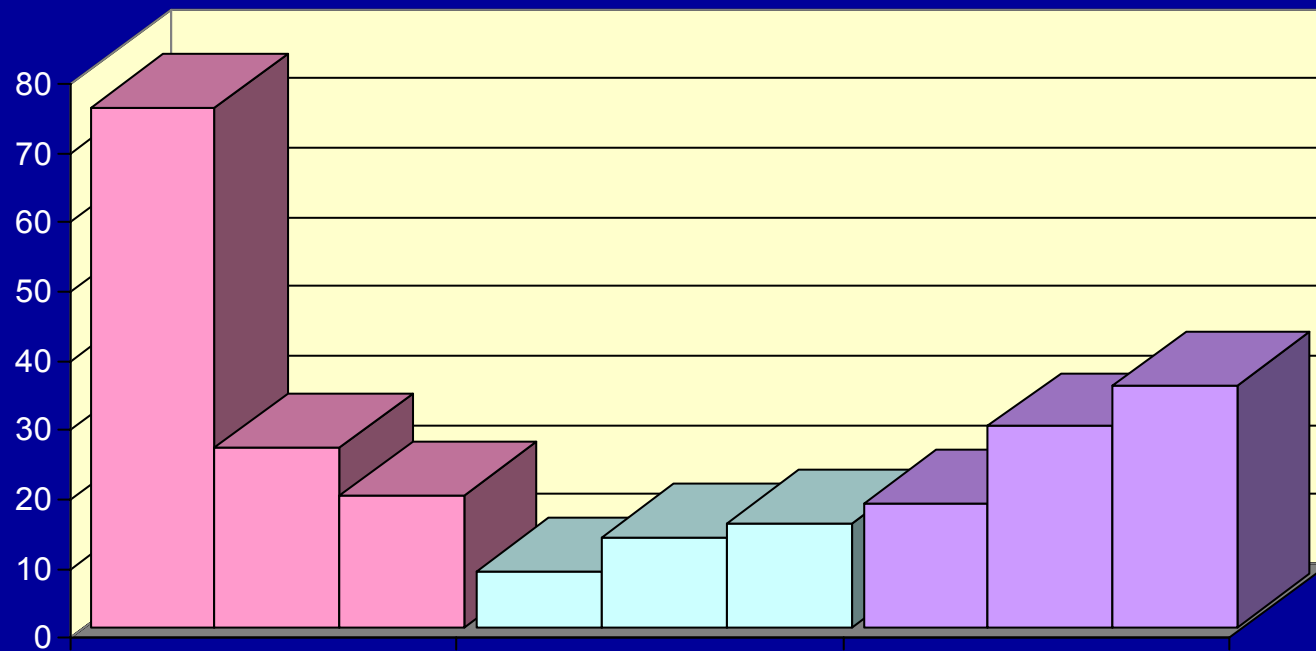
1993: J. Chem. Soc. Pakistan
Bangladesh J. Botany
Pakistan J. Botany
Lancet
Acta Paediatrica

2003: Pakistan J. Botany
J. Chem. Soc. Pakistan
Bangladesh J. Botany
Natural Product Research
Lancet

Spanish-speaking Latin America: patterns of publishing

1983:	Medicine, general (28%) Biology (18%) Medicine, experimental (18%) Biochem & Molec. biology (5%) Pharmacology & pharmacy (3%)	Arch. Biologia & Medicina Experimentales Acta Physiologica Latinoamericana Revista Medica de Chile Medicina – Buenos Aires Prensa Medica Argentina
1993:	Urology & nephrology (6%) Biochem & molec biology (5%) Medicine, general (5%) Chemistry, physical (4%) Astronomy & astrophysics (4%)	Kidney International Revista Medica de Chile Blood Arthritis & Rheumatism Medicina – Buenos Aires
2003:	Biochem & molec biol (5%) Genetics & heredity (5%) Medicine, general (4%) Chemistry, physical (3%) Astronomy & astrophysics (3%)	American J. Human Genetics Arthritis & Rheumatism Revista Medica de Chile European Heart Journal Invest. Ophthalmology & Visual Science

Spanish-speaking Latin America: origin and destiny of papers

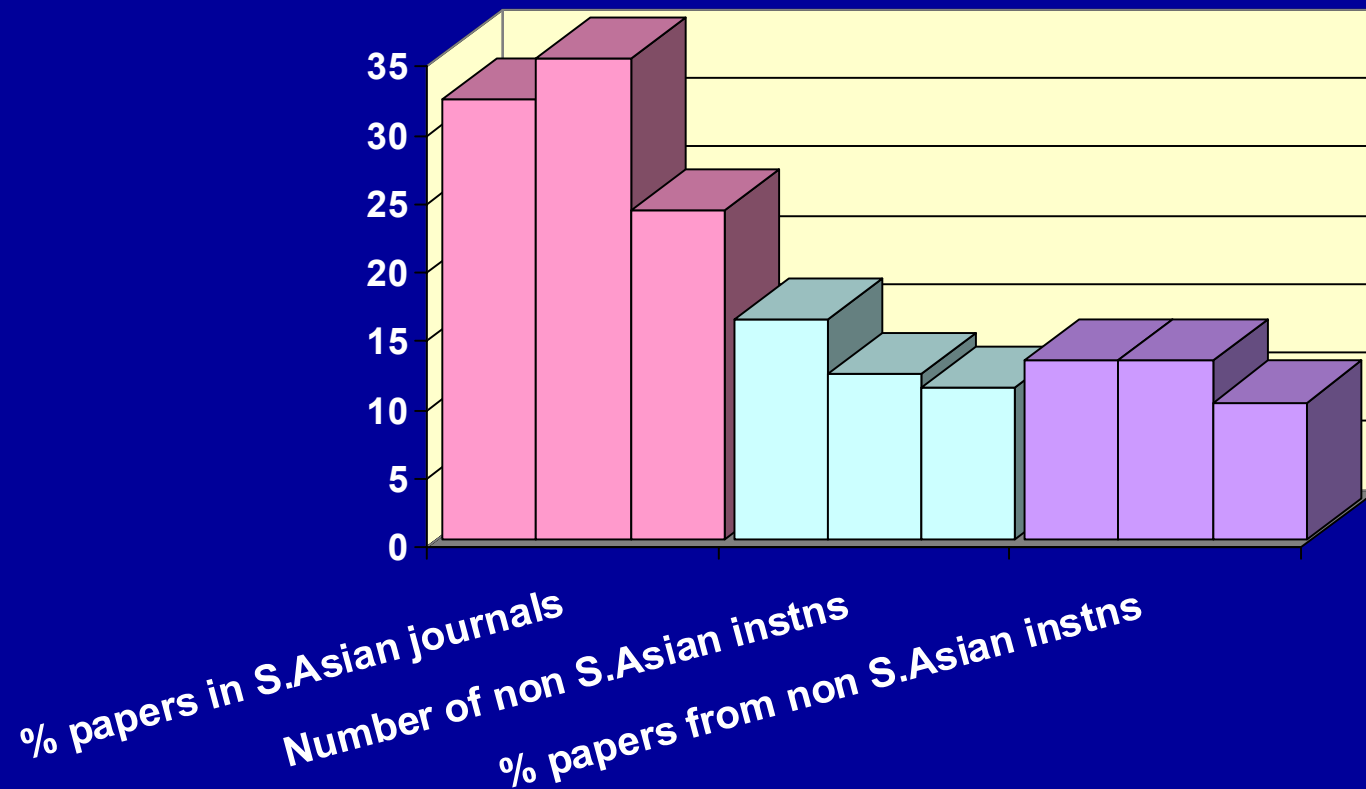


% papers in L.Am journals

Number of non L.Am instns

% papers from non L.Am instns

South Asia (less India): origin and destiny of papers 1983-2003



The impact of science from the developing world

- The amount of published science from the developing world is increasing
- What is required now is increasing **visibility** for that published science and better **access** to science from more developed countries

Some specific initiatives to increase **access** to scientific information

- Programme for the Enhancement of Research information
- African Journals Online
- HINARI
- SciELO
- Highwire Press
- Freemedicaljournals.com
- SciDev.net
- Electronic Publishing Trust for Development

Factors that will increase both access and visibility

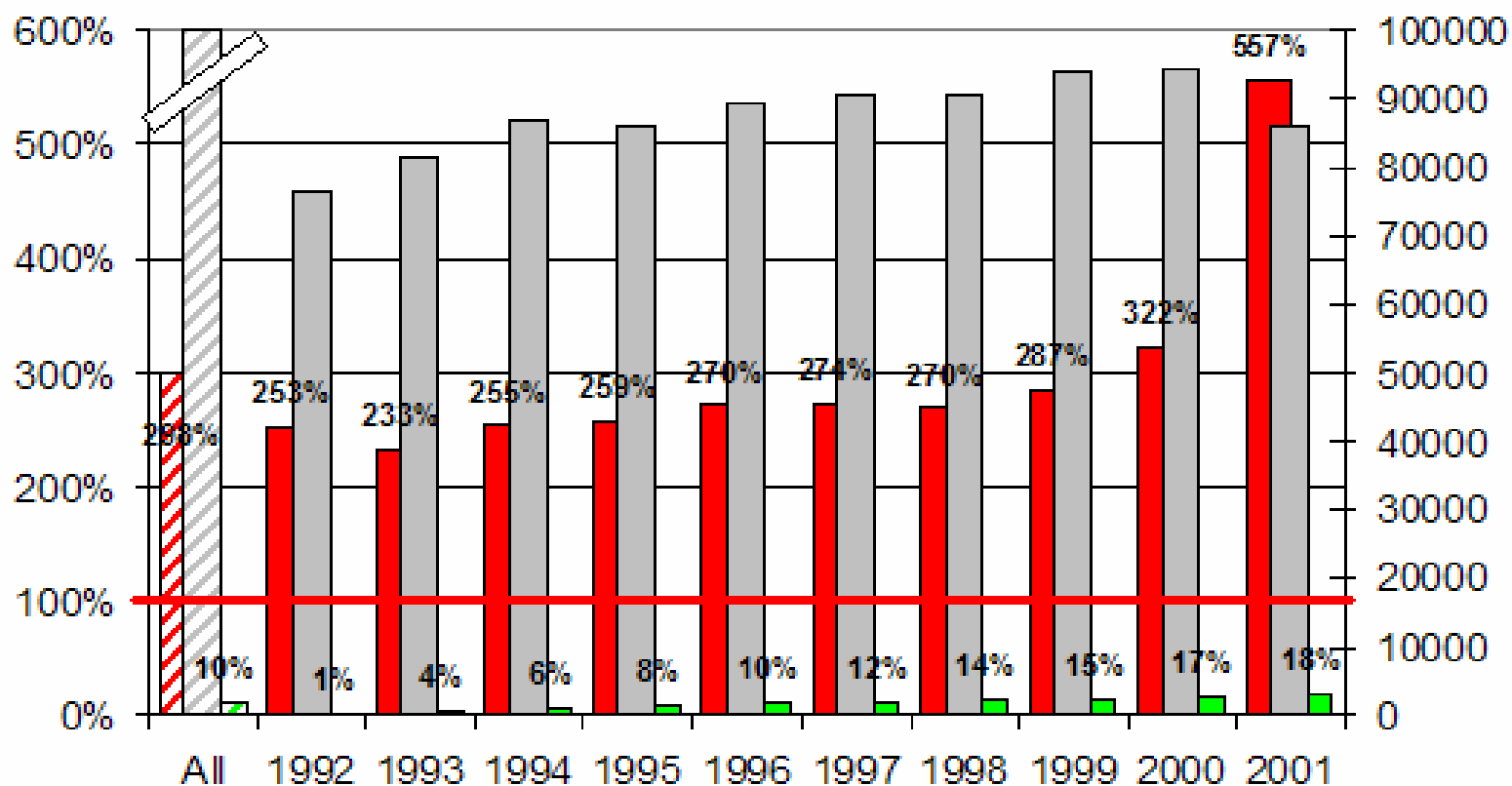
- The Internet
- Open access to the scholarly literature

Open Access

There are 2 ways in which a scientist can provide open access:

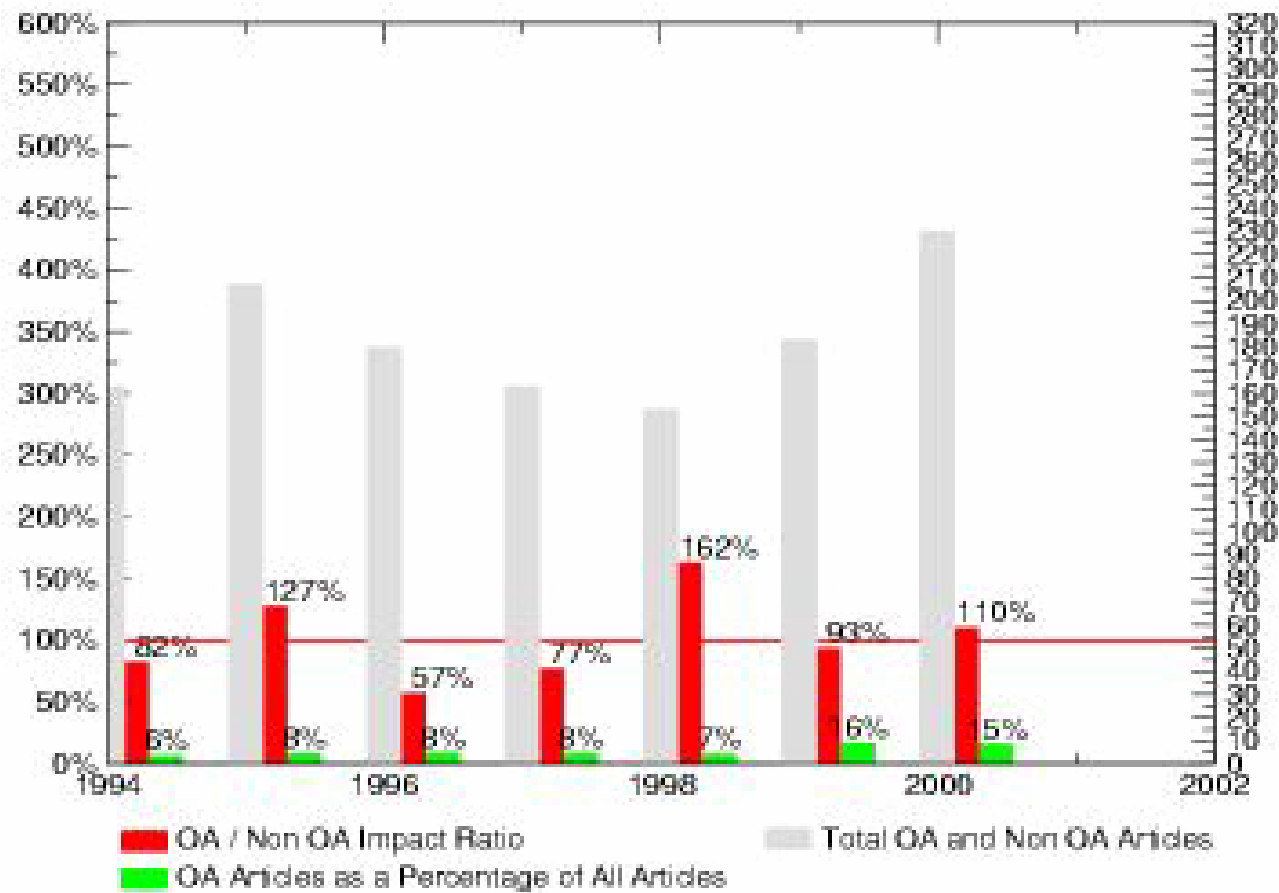
- Publish in an open access journal where appropriate
- Self-archive papers (e-prints) in an open archive (an institutional or subject-based archive)

Open Access vs. Non-Open Access Citation Impact Ratios All Physics Fields

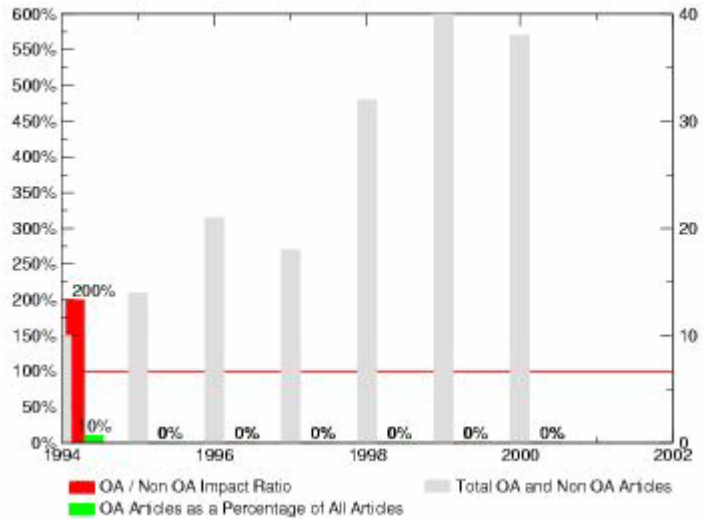


- Open Access/Non-Open Access Impact Ratio
- Open Access Articles as a Percentage of All Articles
- Total Open Access and Non-Open Access Articles

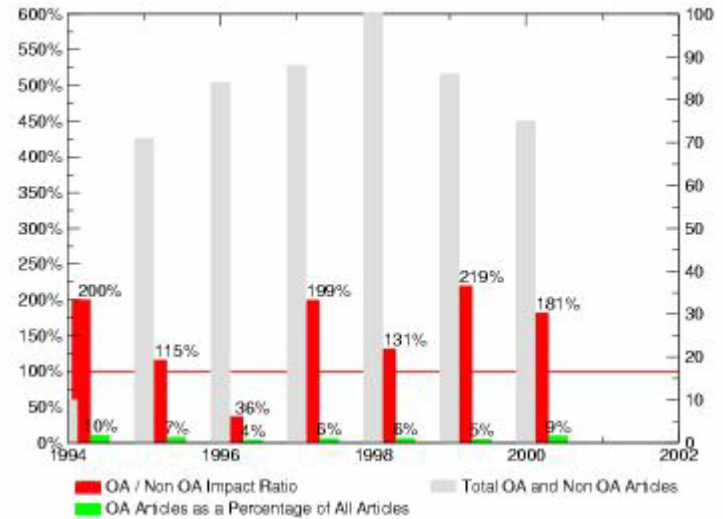
AMERICAN JOURNAL OF MEDICINE



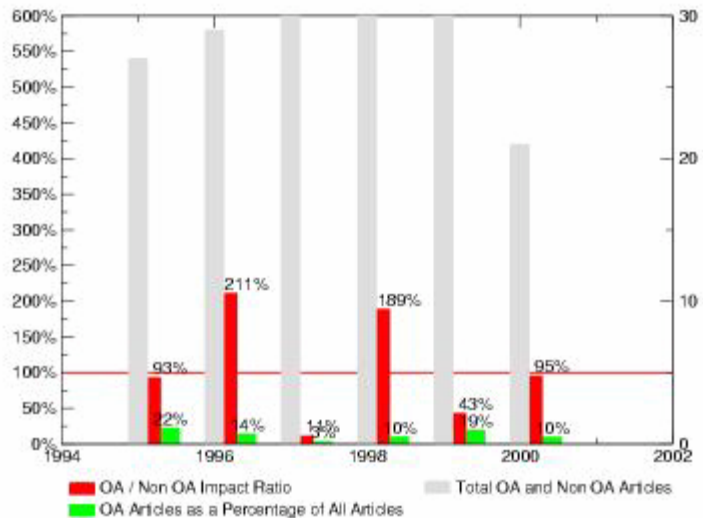
ACCOUNTS OF CHEMICAL RESEARCH



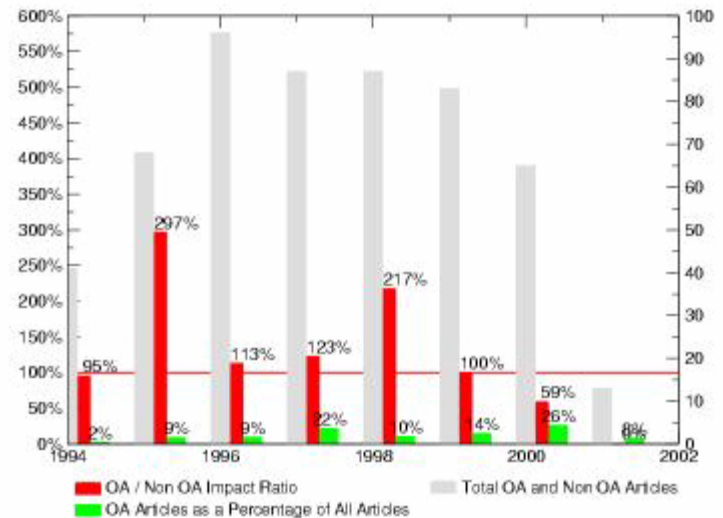
ANATOMICAL RECORD



JOURNAL OF MARKETING



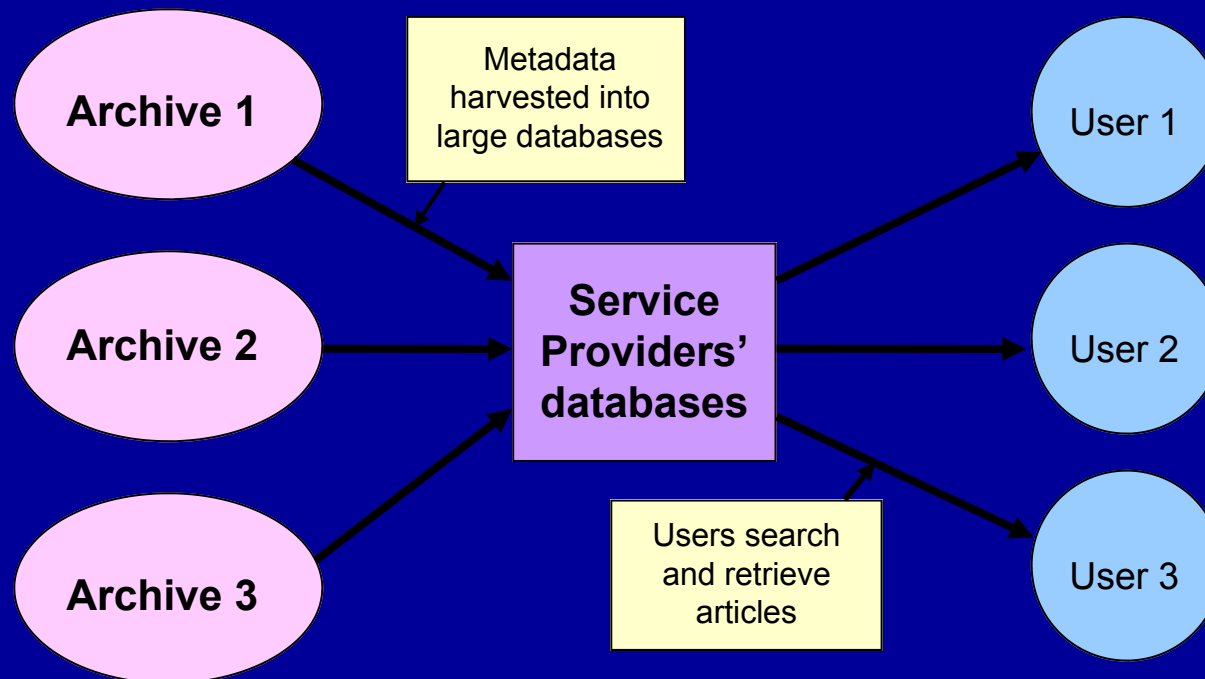
ECONOMIC JOURNAL



Open access journals

- Directory of Open Access Journals (DOAJ) from Lund University:
 - 1332 journals
 - 60818 articles
 - 328 journals now searchable at individual article level

Institutional archive network



Institutional archives: those containing e-prints worldwide

- United States (58)
- United Kingdom (33)
- Canada (19)
- Germany (15)
- France (15)
- Sweden (13)
- Netherlands (12)
- Italy (11)
- Australia (9)
- Denmark (5)
- Hungary (4)
- Brazil (4)
- India (4)
- China (4)
- South Africa (3)
- Portugal (2)
- Ireland (2)
- Mexico (2)
- Japan (2)
- Austria (2)
- Belgium (2)
- Finland (1)
- Colombia (1)
- Slovenia (1)
- Israel (1)
- Peru (1)
- Switzerland (1)
- Croatia (1)
- Norway (1)
- Spain (1)

Resources

- List of resources about open access in the handout, covering:
 - Open access journals ('OA publishing')
 - Institutional archives ('self-archiving')
 - Impact of open access research
 - Discussion forums on open access