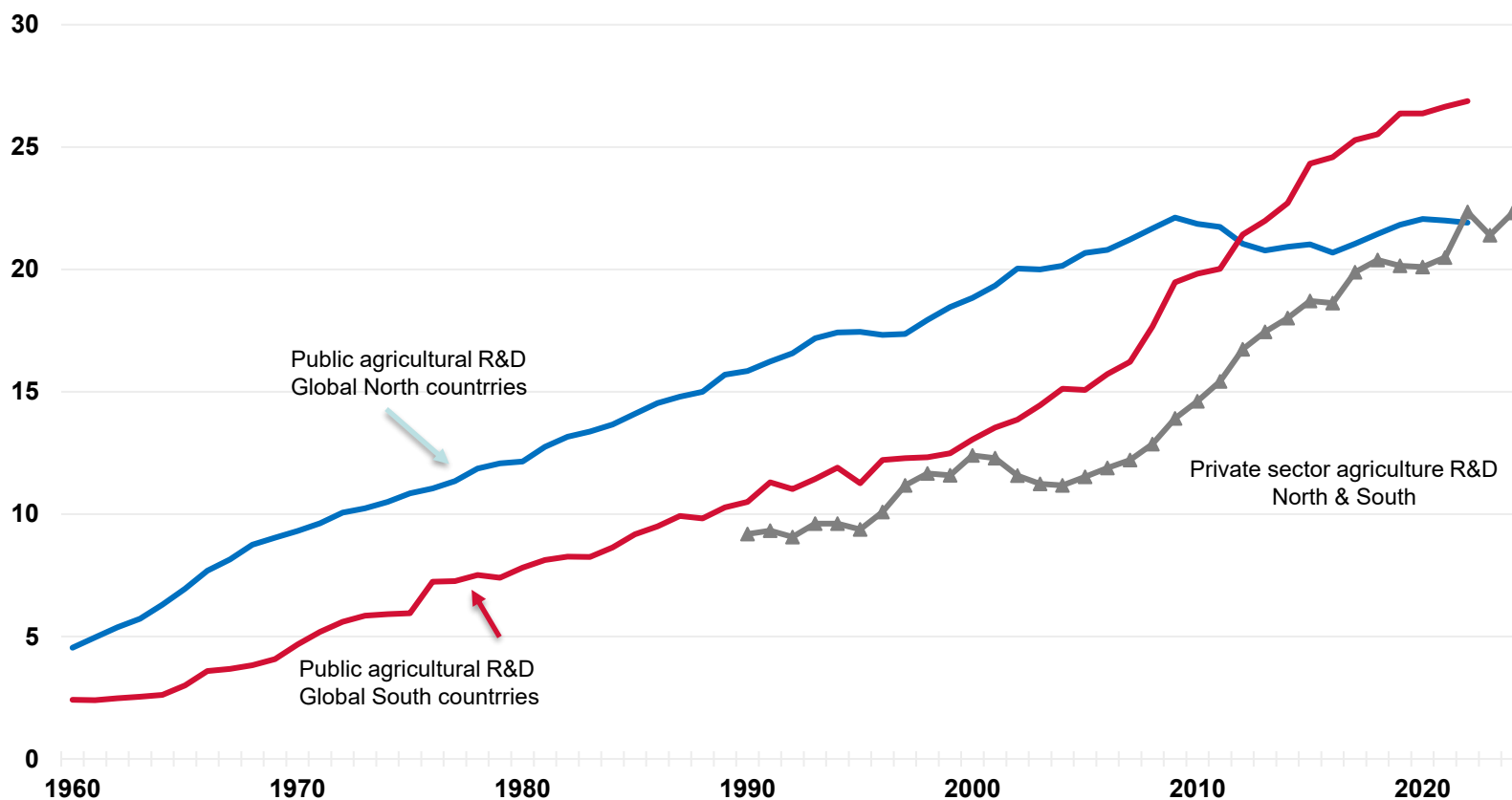


Changing Structure of Agricultural Research: Implications for CGIAR

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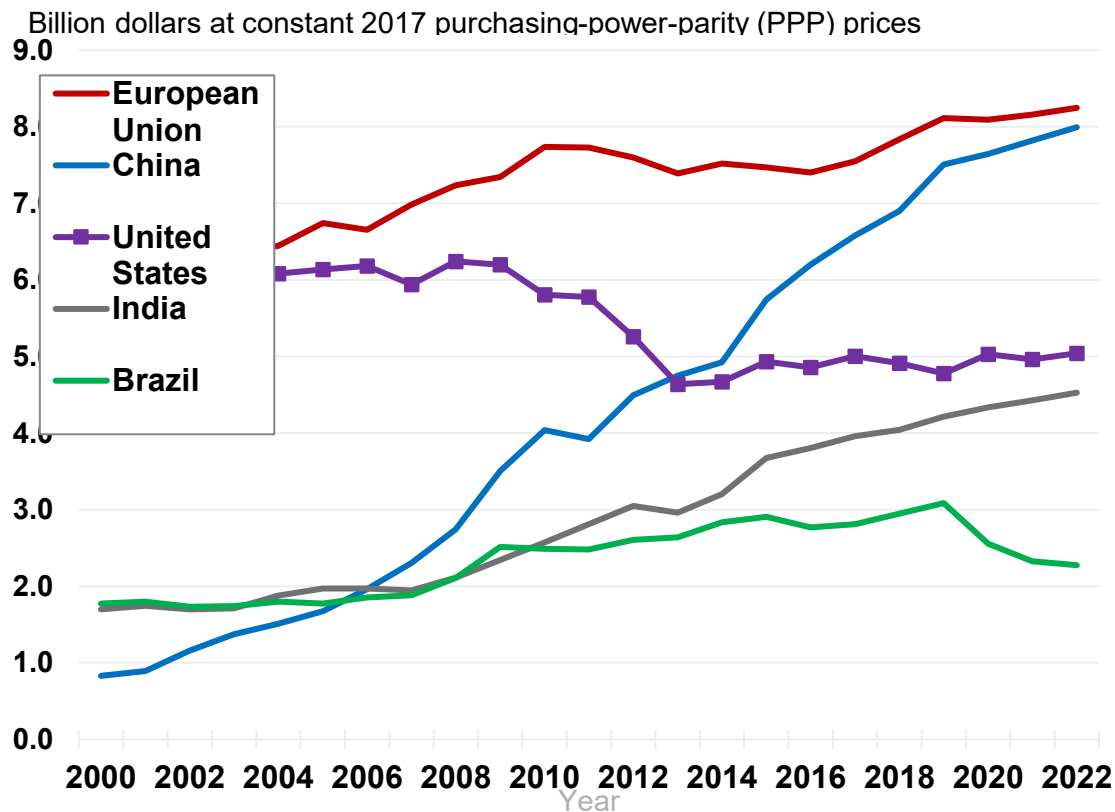
Public research in South exceeds North and Private Agricultural Research Increasing

2017 PPP\$, billions



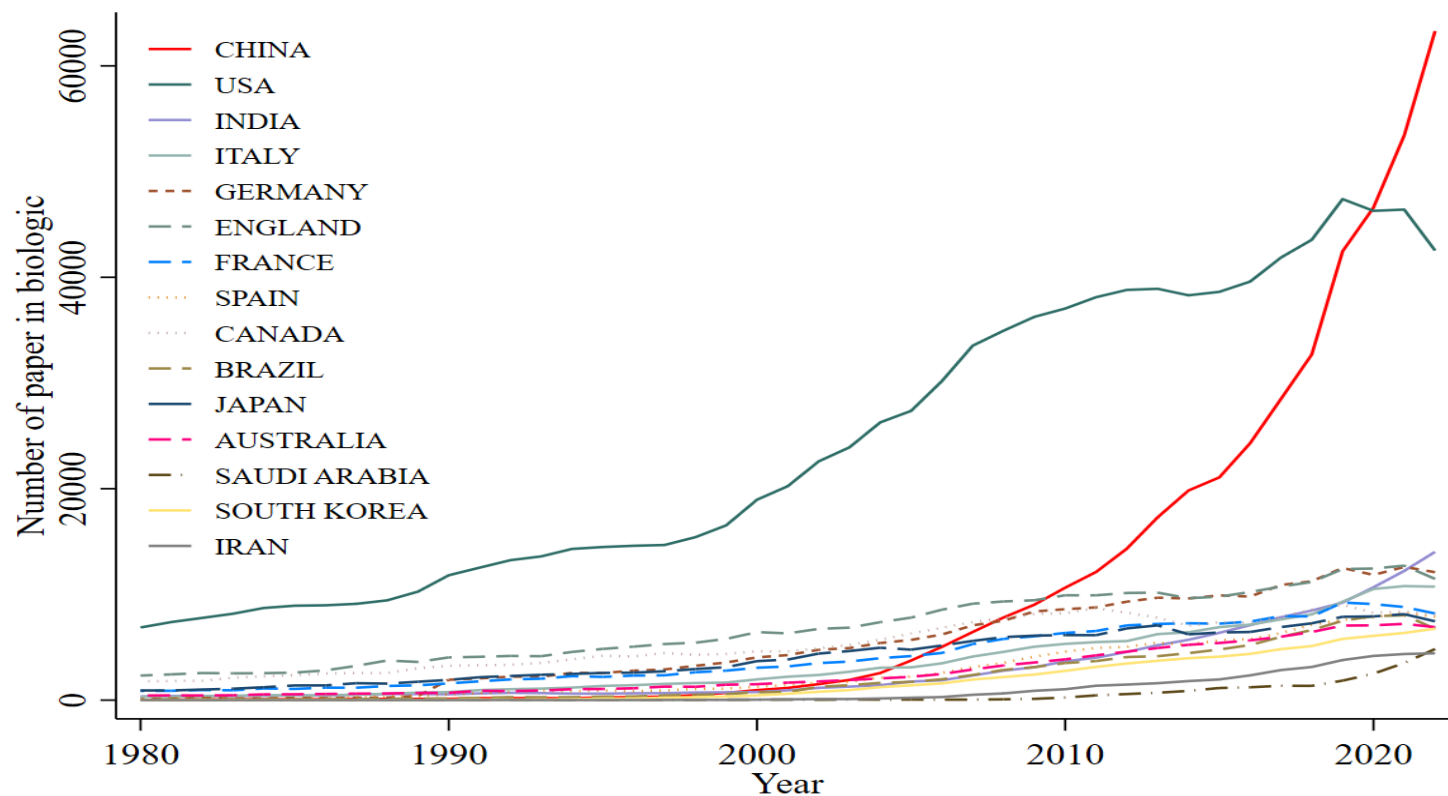
Based on data from Keith Fuglie 2026

Public Sector Agricultural R&D Concentrated in few large countries



Source: Constructed by Keith Fuglie using GRAPE database (van Dijk et al., 2025).

China, USA dominate numbers of publications in biology



Source: Figure Deng et al 2022 using Web of Science publications

Private input firms in South also grow rapidly

- 2017 Chinese SOEs buy major input firms
 - ChemChina buys Syngenta – largest pesticide firm & 3rd largest seed & biotech firm.
 - Longping Hi Tech buys Dow's South American seed company to put it in top 10 global seed firms globally
- UPL (India) bought Advanta Seeds in 2006 South America SE Asia. Bought DuPont's fungicide business in 2010 and Arysto Lifesciences in 2019. Now 5th biggest pesticide firm.
- Grupo Don Mario (Argentina/Brazil) biggest soybean breeder in Argentina and Brazil (now World?)
 - American KWS Corn seed businesses in 2024
 - AgReliant Genetics in US in 2025 from KW & Limagrain (4th biggest corn business)

North-South research spillovers/tech transfer declining ?

- Public sector
 - USAID eliminated, British & Europe foreign aid declining
 - Chinese public sector limited
 - Chinese Academy of Agricultural Science research collaboration increasing
 - Belt and Road financed some ag tech transfers
- Private
 - Pull back of European firms – KWS (Germany) leaves South America, China and US corn business; Syngenta seed R&D down resources shift to China...
 - But now private MNCs companies from South are providing new competitive technology transfer from North to South: GDM, UPL/Syngenta, Mahindra tractors...

South – South spillovers increasing?

- Private MNCs are providing new linkages
- Chinese and Indian pesticide companies dominate the generic pesticide market.
- South America now the big markets for Chinese and Indian pesticide firms, biotech and seed industries.
- Big State Owned Enterprises in China focus on home market first but are also encouraged to expand in South and SE Asia.

Implication for CGIAR

- More focus on South – South research and technology transfer.
- Focus on collaborative efforts on small and medium enterprises (SMEs) serving local and regional markets .
- Encouraging competitive markets –
 - Access for germplasm
 - Research tools – training, IPRs, big data & AI.
 - Don't close out opportunities for big MNCs to transfer tech

Thanks