

Check against delivery



**Mobilizing Resources for
Agricultural Innovation
Public & Private
Partnerships**

An Invitation to a Dialogue

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Brasilia, July 2006

Outline

- **R Mobilization**
- **Innovation Systems**
- **Public/Private Partnerships**
- **What's Next?**

R mobilization

- Networks, access to information
- Knowledge
- Intellectual Property
- Human resources
- Financial resources

Creativity

Financial Mechanisms A Snapshot

- Direct Financing
- Competitive Funds
- Endowment Funds
- Check-Off Programs
- Regional and Global Funds

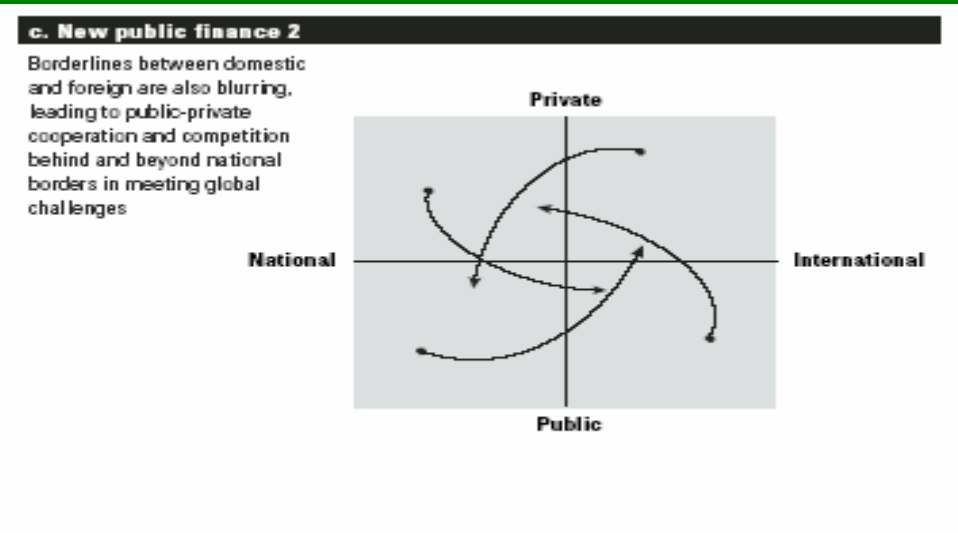
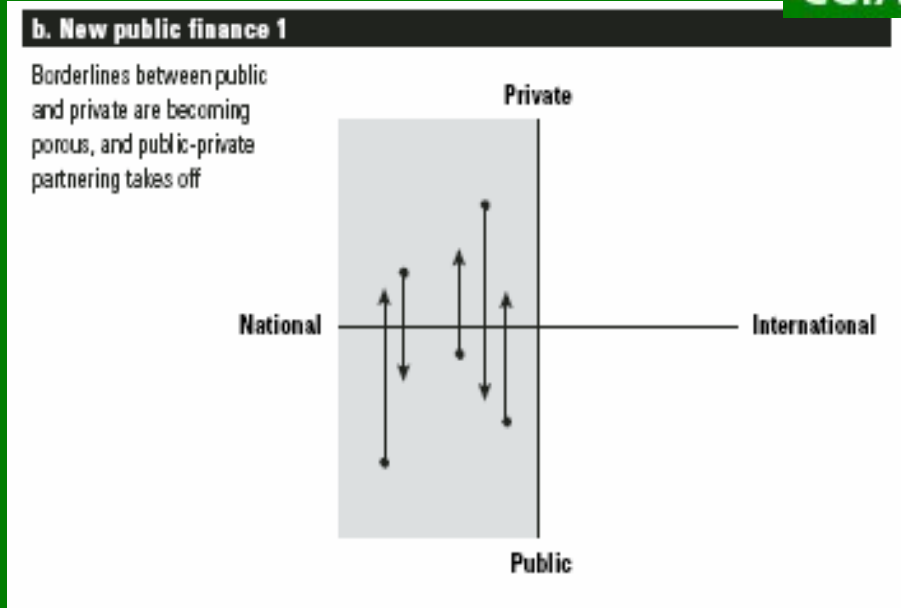
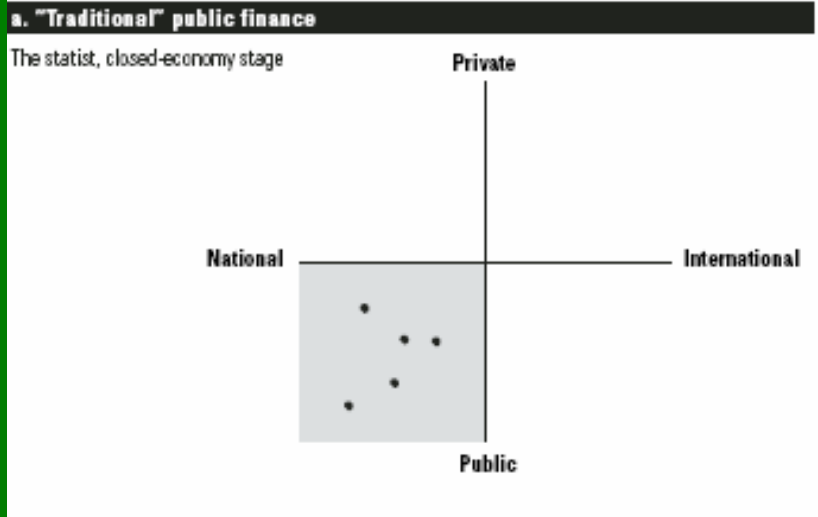
Shared/Mixed

Public/Private

Evolution of Public Finance

FIGURE 1
The evolution of public finance

- Policy approaches and tools
- ↑ Origin and extent of partnering

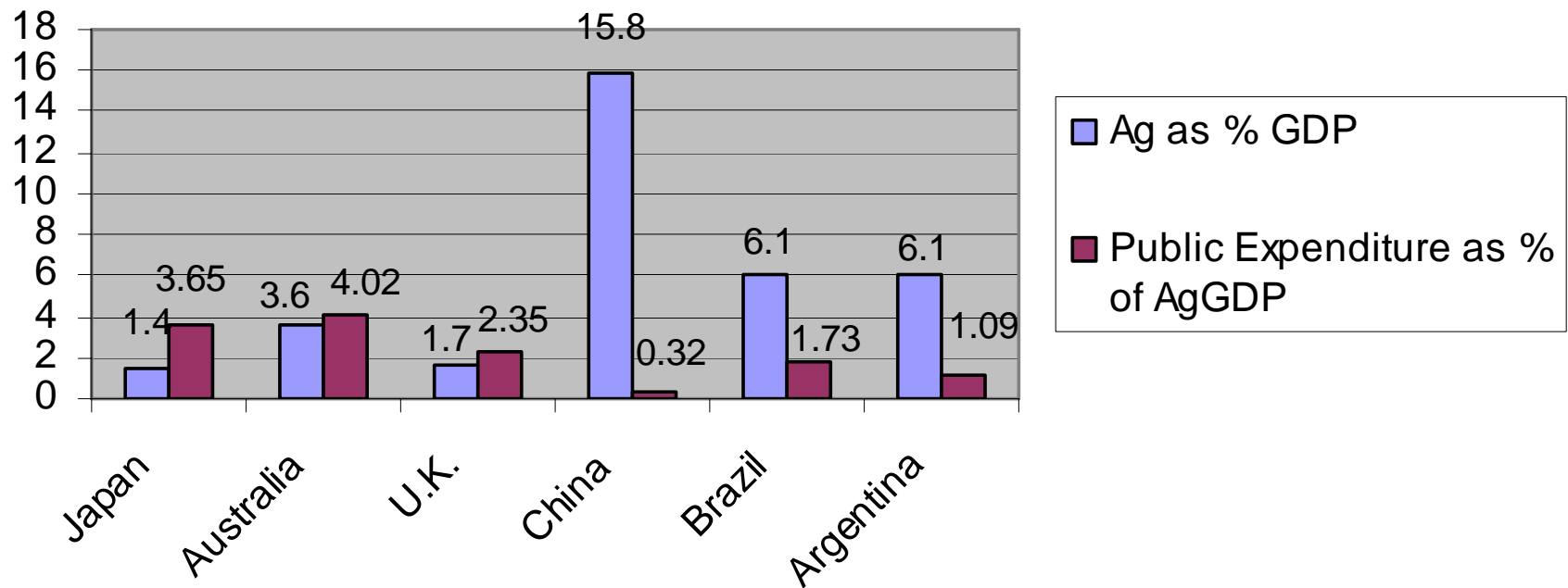


Source: *The New Public Finance*, UNDP 2006

Further Unlocking Innovation for Agricultural Development

Investments in Ag. R&D and Ag. as % of GDP

Investments in R&D as % of Ag GDP



ODA, Subsidies & Agriculture

Year	Total ODA ¹	Ag ODA ¹	Ag ODA/Total ODA (%)
1980	37.1	6.2	16.7
1985	40.0	6.6	16.6
1990	44.8	5.4	12.0
1995	38.9	3.0	7.6
2002	61.4	2.3	3.7
2003	78.2	2.9	3.7

¹ constant 2002 US\$ billion

Figures are defined as total ODA from all donors and to all recipients for category iia

Source: Official development assistance to agriculture, DFID 2004

2005p (TBC)

- Subsidies
 - OECD US\$ 385 billion (881 times CGIAR)

Source: I.1 Estimates of support to agriculture, (PSE/CSE Database) OECD, 2006

Ag Research Spending in 2000

- USA, Japan, France and Germany accounted for 2/3 of \$12.8 billion of public research done by industrialized countries
- China, India, Brazil and South Africa spent 50% of developing world's public agricultural research money
- As a group, developing countries undertook more of the world's public agricultural research than developed countries

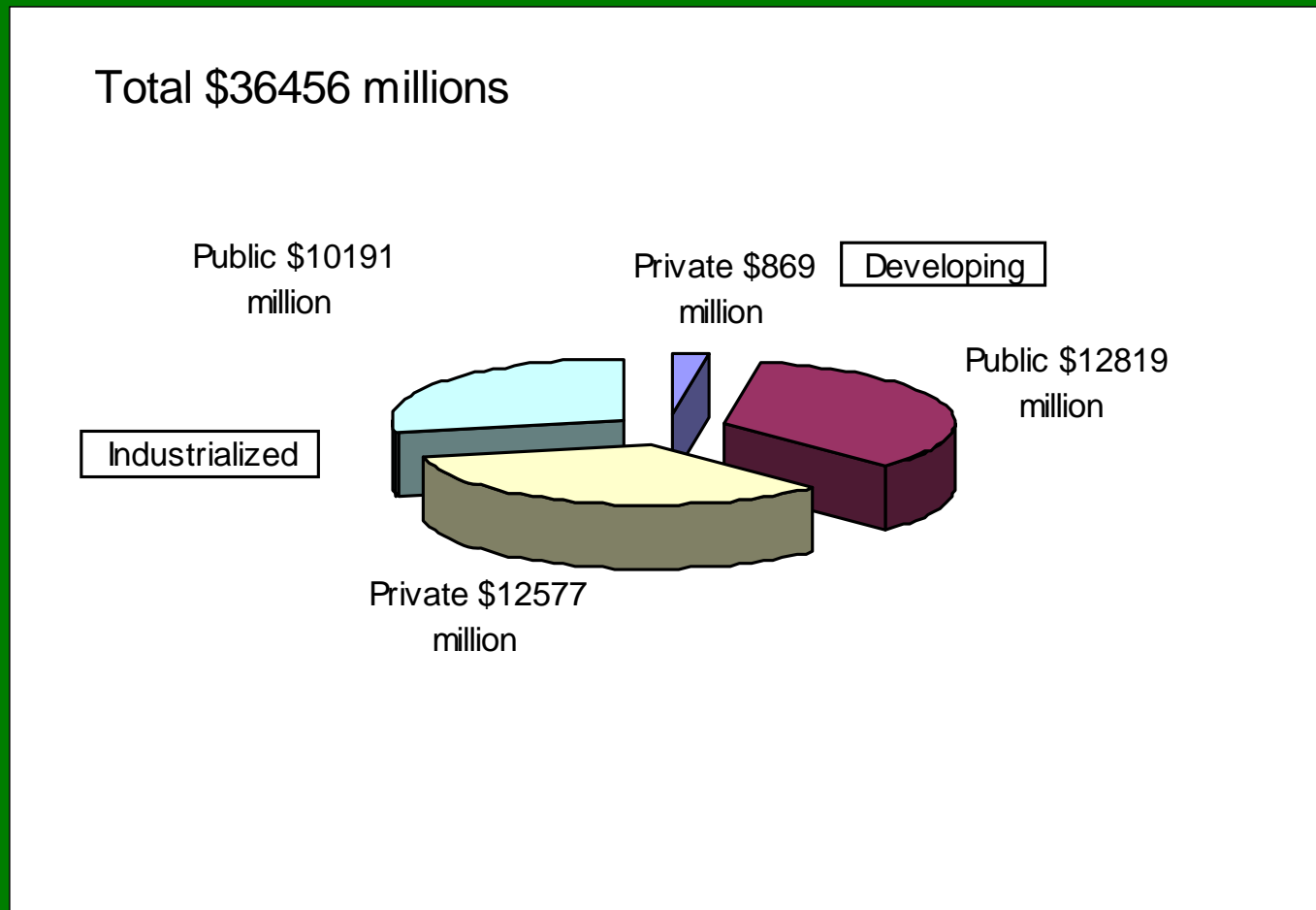
Public-Private Sector Expenditure

Public and private agricultural research and development totals, circa 2000

	Expenditure (millions 2000 international dollars)			Share (%)		
	Public	Private	Total	Public	Private	Total
Developing countries	12 819	869	13 688	93.7	6.3	100
Developed countries	10 191	12 577	22 767	44.8	55.2	100
Total	23 010	13 446	36 456	63.1	36.9	100

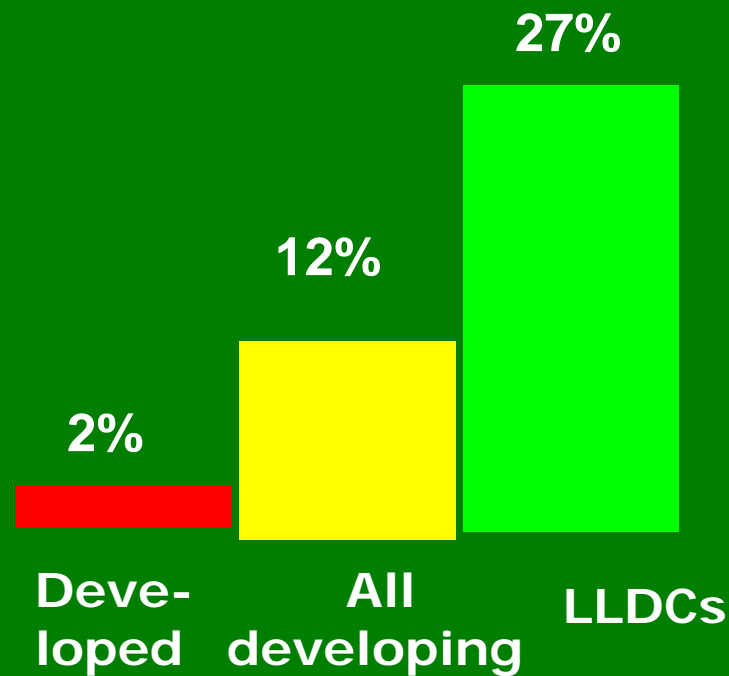
Source: Pardey et al. (2005) based on data from ASTI, available at <http://www.asti.cgiar.org/>.

Large Private Role in Industrialized Countries, 2000



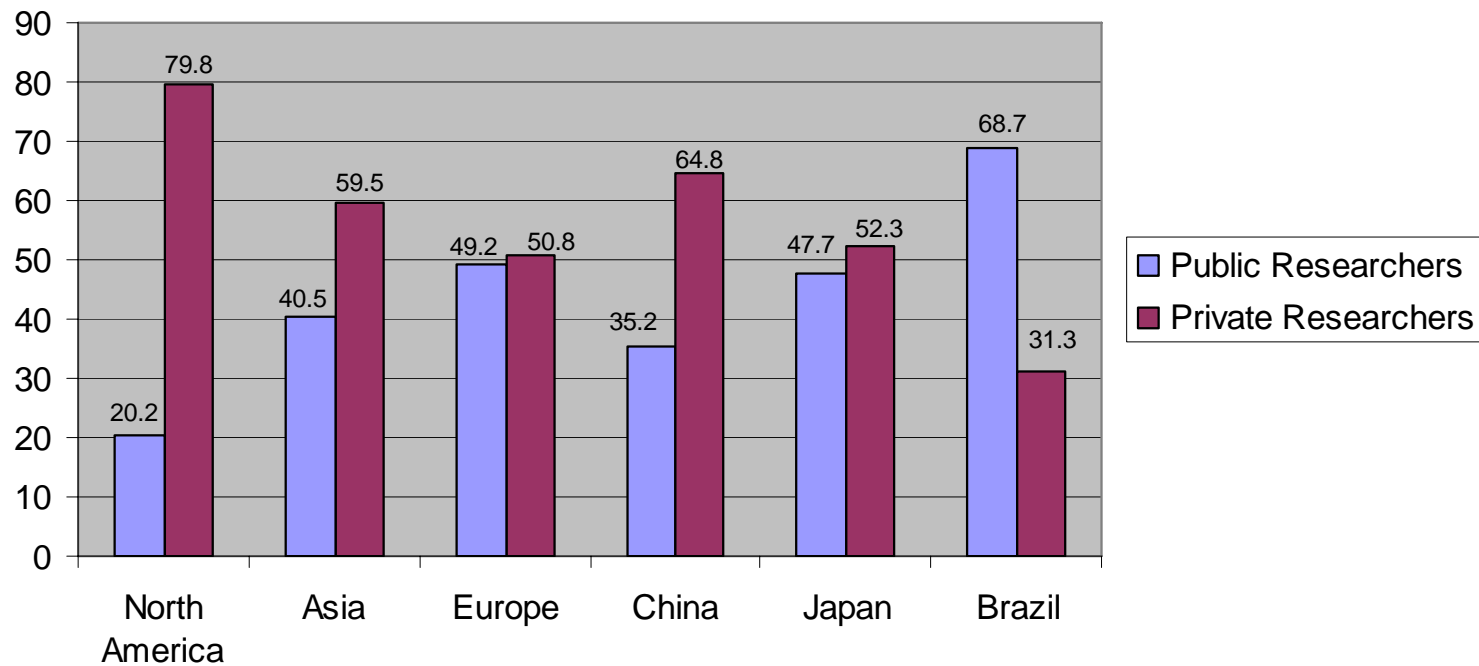
Centrality of Agriculture

Ag GDP/total



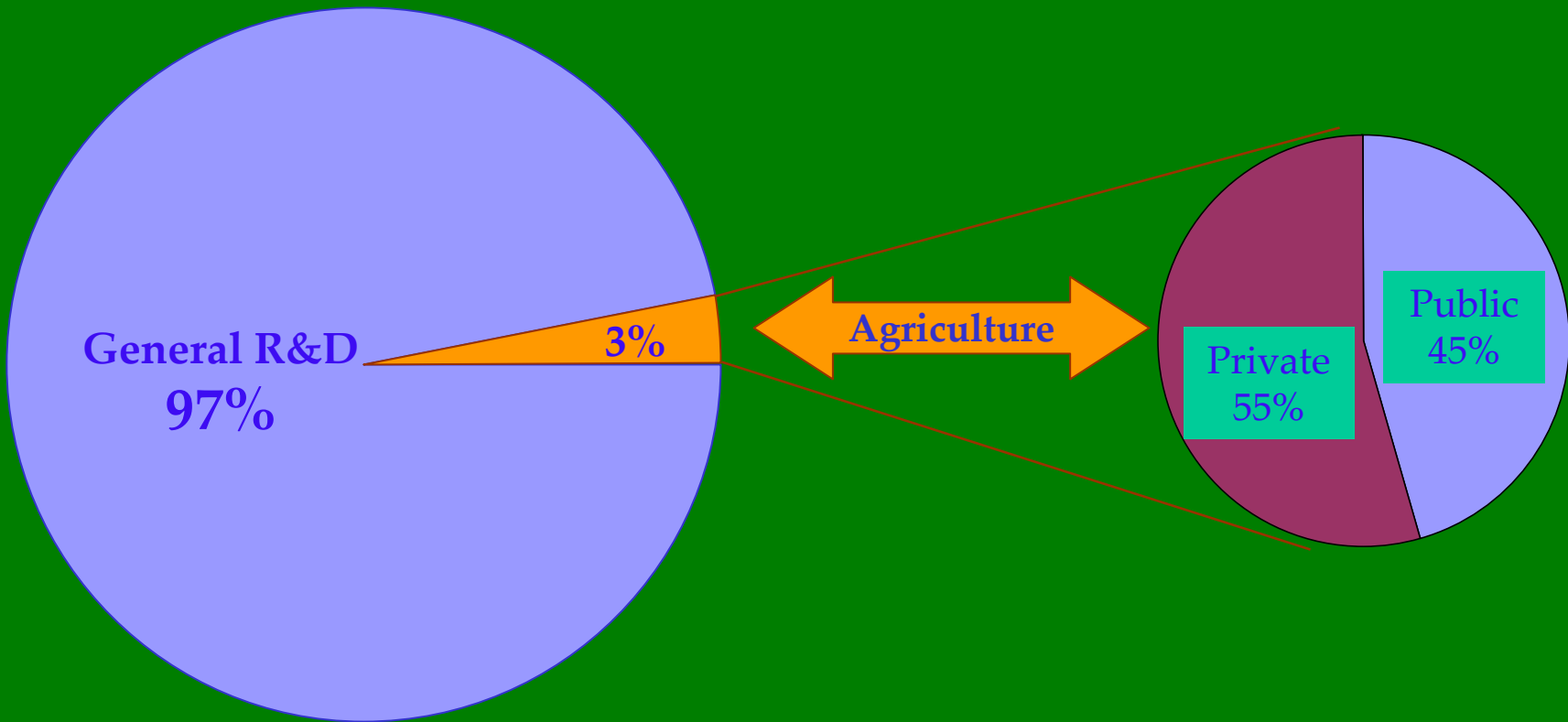
Public and Private Sector Researchers

Researchers from the Public and Private Sector -2001 (%)



Source: Elísio Contini, Patrick Séchet, *Ainda há um longo caminho para a ciência e tecnologia no Brasil*, 2005

% of R&D on Agriculture in OECD Countries



Knowledge Inequities:

most-cited publications, 1993-2001

97.5%



31 countries (G8, EU, Brazil, China, India, S. Korea, Israel, Russia, and Taiwan)

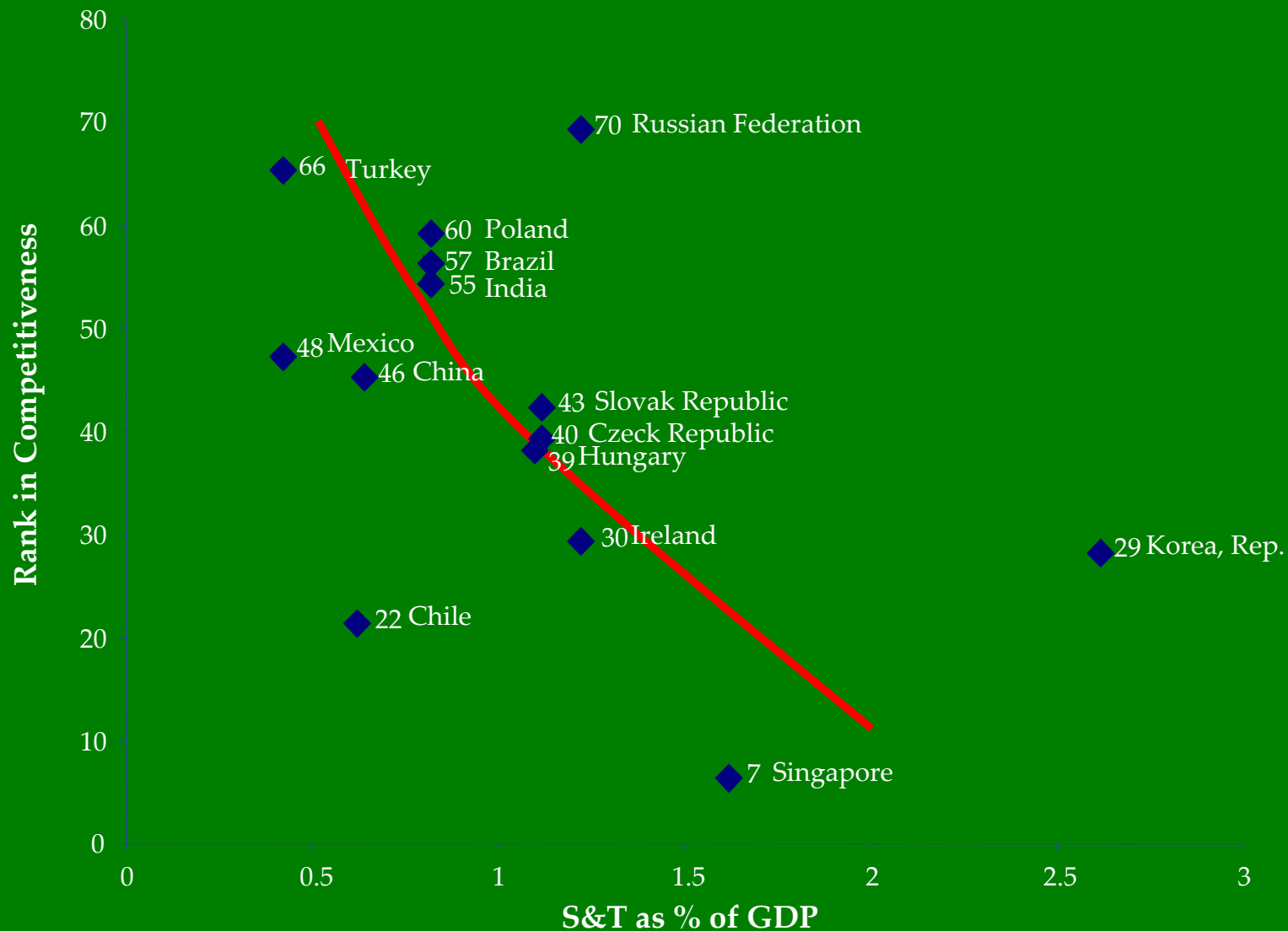
2.5%



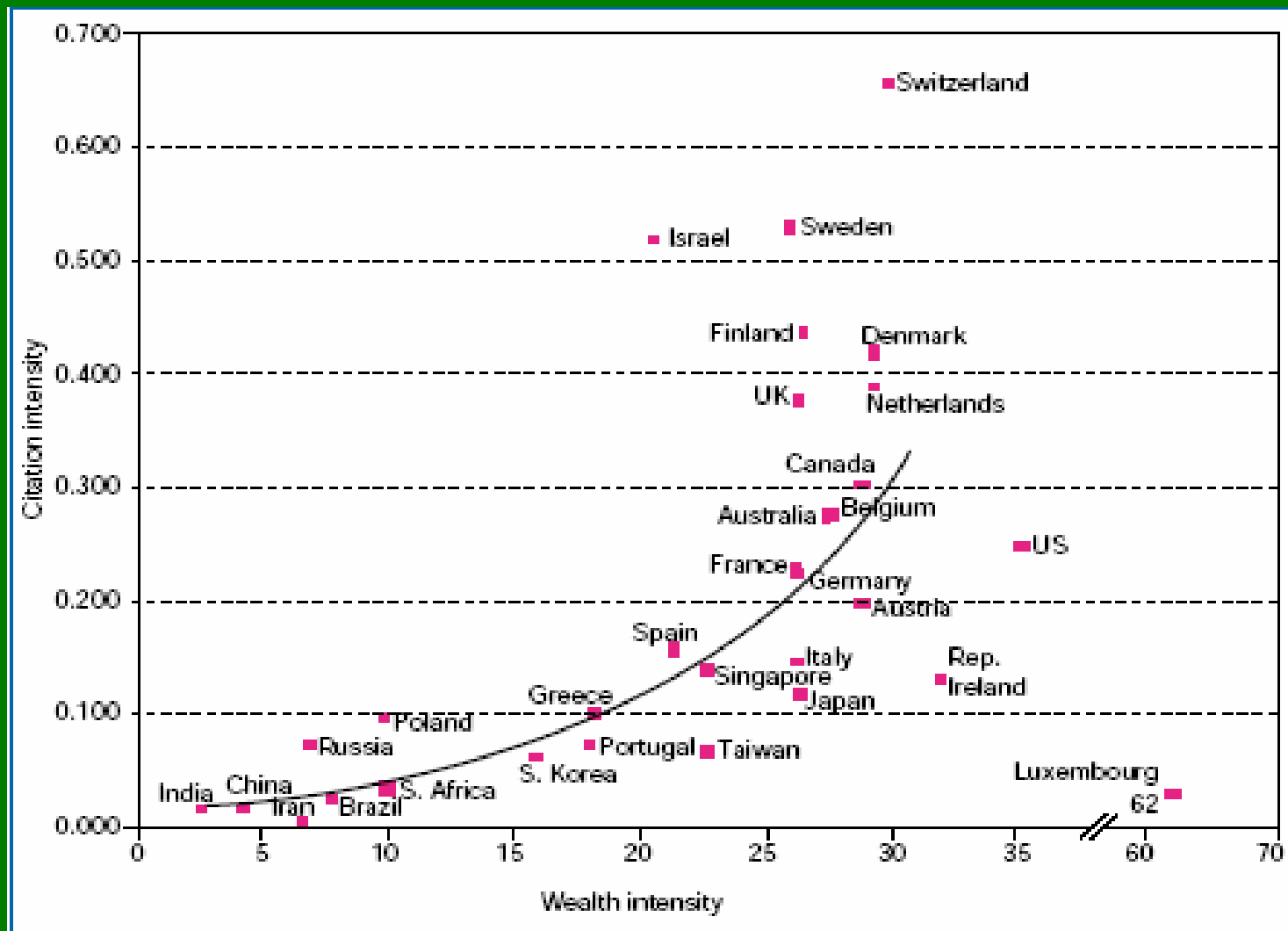
162 countries (Majority in Sub-Saharan Africa)

Source: David King, *The Scientific Impact of Nations*, *Nature*, Vol 430, July 2004

R&D Intensity and Global Competitiveness Ranking in some Emerging Economies

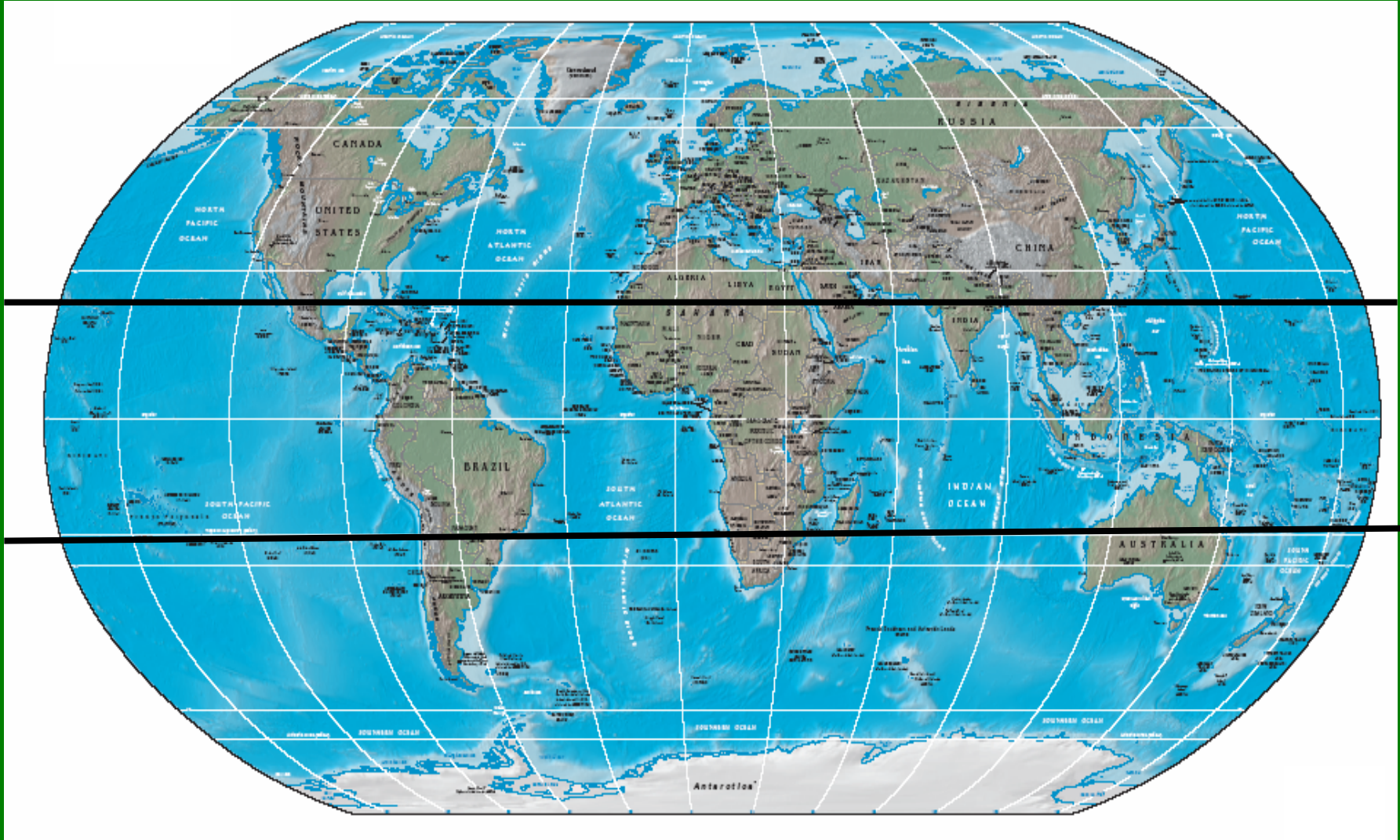


Economic and Scientific Wealth



Source: David King, *The Scientific Impact of Nations*, *Nature*, Vol 430, July 2004

The Tropics



African NARI's Source of Funding



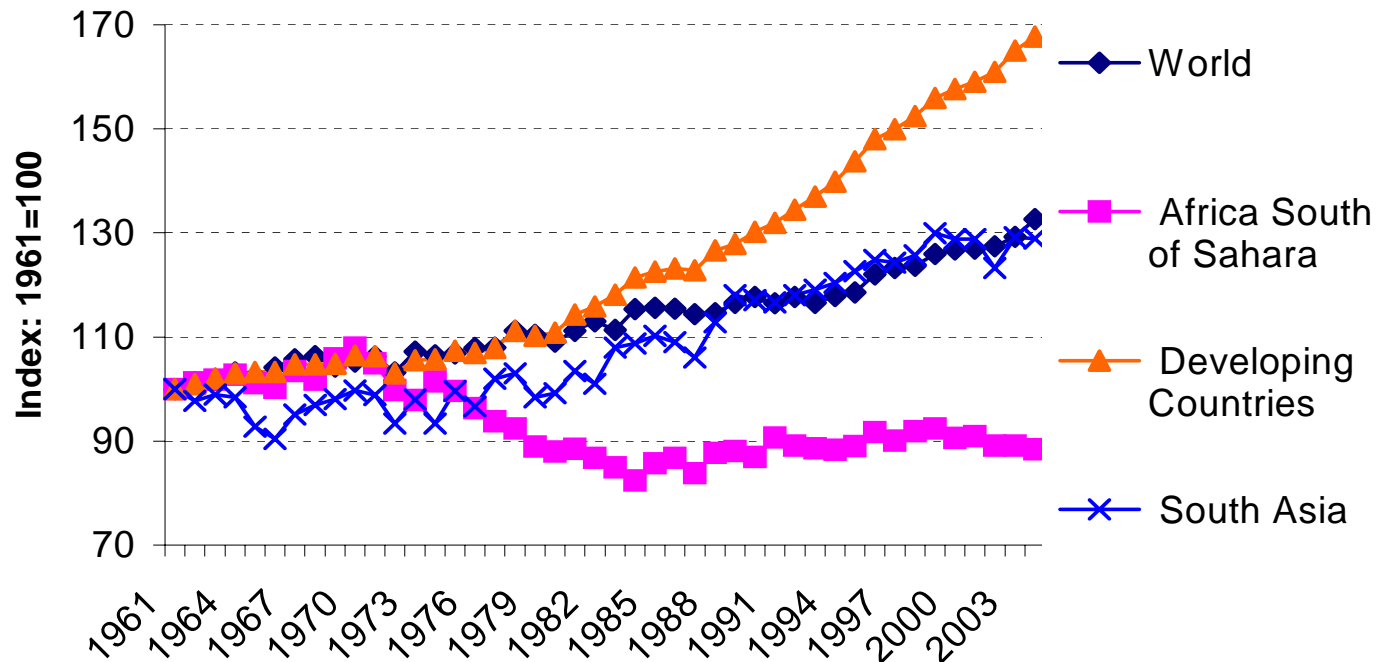
	1 st Category	2 nd Category	3 rd Category
Government Funding	Less than \$1 million	30%	100%
Donor Funding		50%	

- **1st Category:**
 - Departments of Agricultural Research in Malawi and Zambia
 - Institut des sciences Agronomiques du Rwanda (ISAR) in Rwanda
 - Centre National de Recherche Appliquée au Développement Rural (FOFIFA) in Madagascar
 - Instituto Nacional de Pesquisa Agraria (INPA) in Guinea Bissau
 - Institute of Agricultural Research (IAR) in Sierra Leone
- **2nd Category:**
 - Majority of NARIs
- **3rd Category:**
 - ARC of South Africa
 - Agricultural Research and Extension Unit (AREU) of Mauritius
 - NARIs of Botswana
 - Department of Agricultural Research of Namibia

Source: Agricultural Research Delivery in Africa: An Assessment of the Requirements for Efficient, Effective and Productive National Agricultural Research Systems in Africa, FARA, 2006

Innovating Innovation

Growth Trends in Per Capita Value-Added Output of Agriculture



Source: FAOSTAT, 2006

A Changing Context

- Markets, not production, increasingly drive agricultural growth
- The production, trade and consumption environment for agriculture and agricultural products is growing in unpredictable ways
- Knowledge, information and technology are increasingly generated and applied through the private sector
- Growth in information and communications transformed the ability to take advantage of knowledge developed in other places and for other purposes
- Knowledge structure of agricultural sector is changing in many countries
- Agricultural development increasingly takes place in a globalized setting

Innovation Systems- a view

- Actors and interactions
- Multiple knowledge bases, research: basic and applied
- Capacity to innovate in changing environments -- it is a dynamic adaptive capacity
- Embedded in an institutional (attitudes and practices) and policy context that shapes the ways actors and organisations behave, contextual and locally specific

Characteristics of Innovation

- Application of knowledge to achieve social outcomes
- Combines technical, organizational and other sorts of changes
- Innovation is the process by which organizations “master and implement the design of new goods and services that are new to them, irrespective of whether they are new to their competitors, their country, or the world” (Mytelka 2000)
- Continuous process of improvement
- Innovation can be triggered in many ways
- Considerable value is added in nontraditional agricultural sectors

Source: Enhancing Agricultural Innovation, The World Bank, 2006

Conditions for Innovation

- **Research +**
 - **Market knowledge**
 - **Venture capital or other forms of finance**
 - **Training**
 - **Collaborative mechanisms**
 - **Policies**

Creating Creation Nets in Agriculture

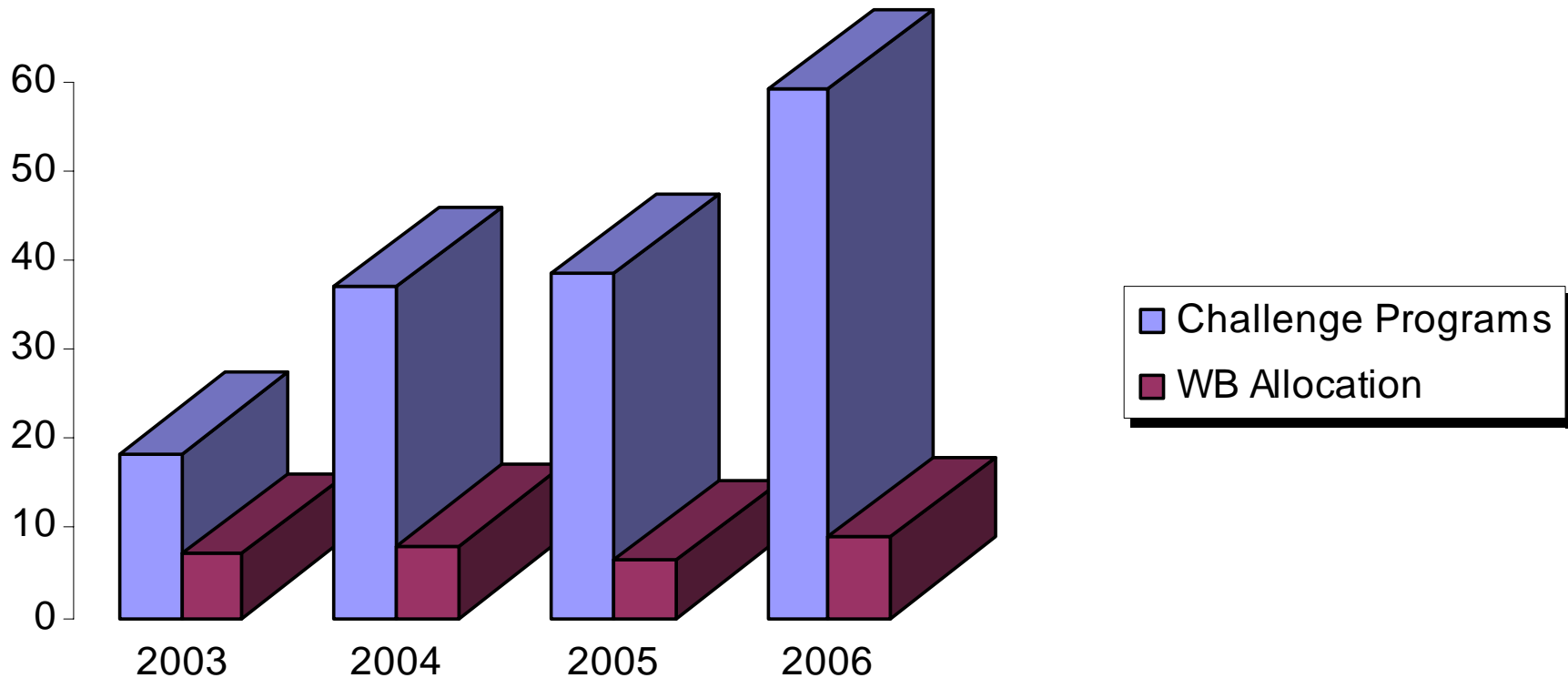
- Looking outside boundaries to get better access to ideas and innovation
- Broader set of participants with close relationships
- Diverse institutional setting
- Freedom to innovate and develop action plans

CGIAR Challenge Programs

Mobilizing R

- CP harness research capacities outside CGIAR
- Flexible governance & effective oversight
- Extract new knowledge & results across target areas
- Generate new funding from traditional and new sources

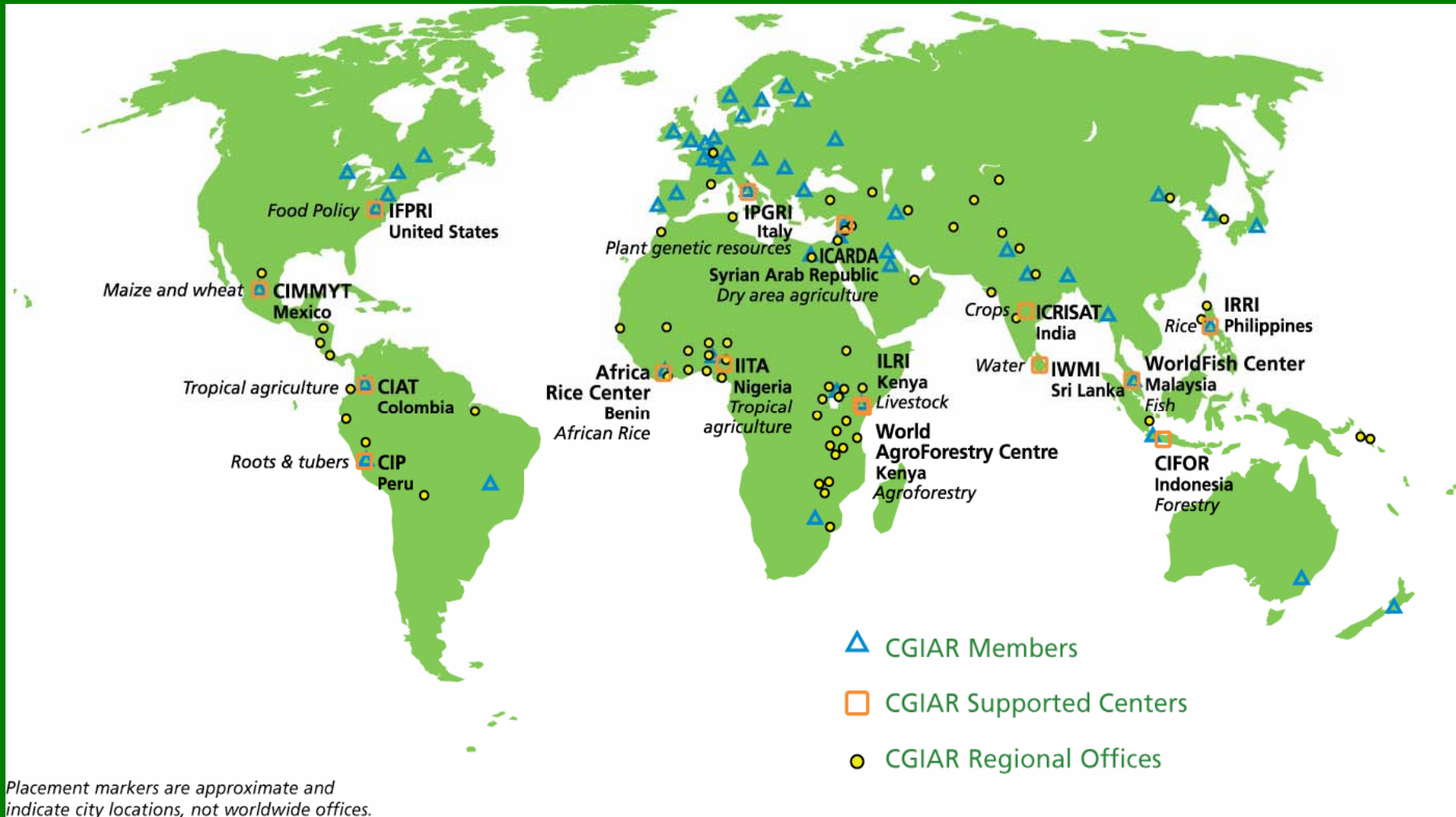
Leveraging Effect to CPs



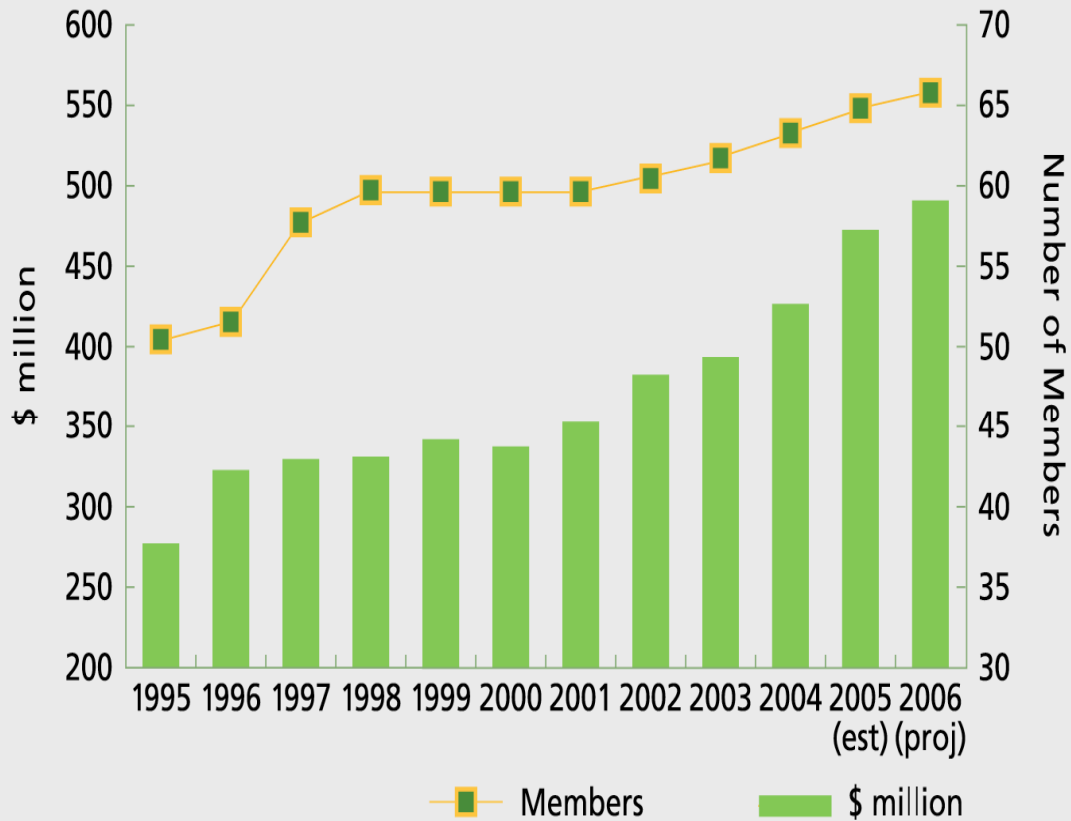
CGIAR as an Element of International Agricultural Innovation System

- Provision of global/ regional public goods (Knowledge, information, technology, policy advice, special services)
- Knowledge-sharing, strengthening national S&T capacities
- Network platforms

The Global CGIAR



An Evolving and Growing CGIAR



Compatibilizing the Incompatible

Public-Private Partnerships Major Challenges

- Not easy
- Lack of information
- Primary accountability different
- Incentive structure different
- Conflicting incentives, overlapping objectives
- High transaction, opportunity and reputational risk (public perception) and management costs
- Trust
- Intellectual Property Rights
- Lack of creative organizational mechanisms to reduce intersectoral competition
- Corporate responsibility

Creation of Public-Private Partnerships

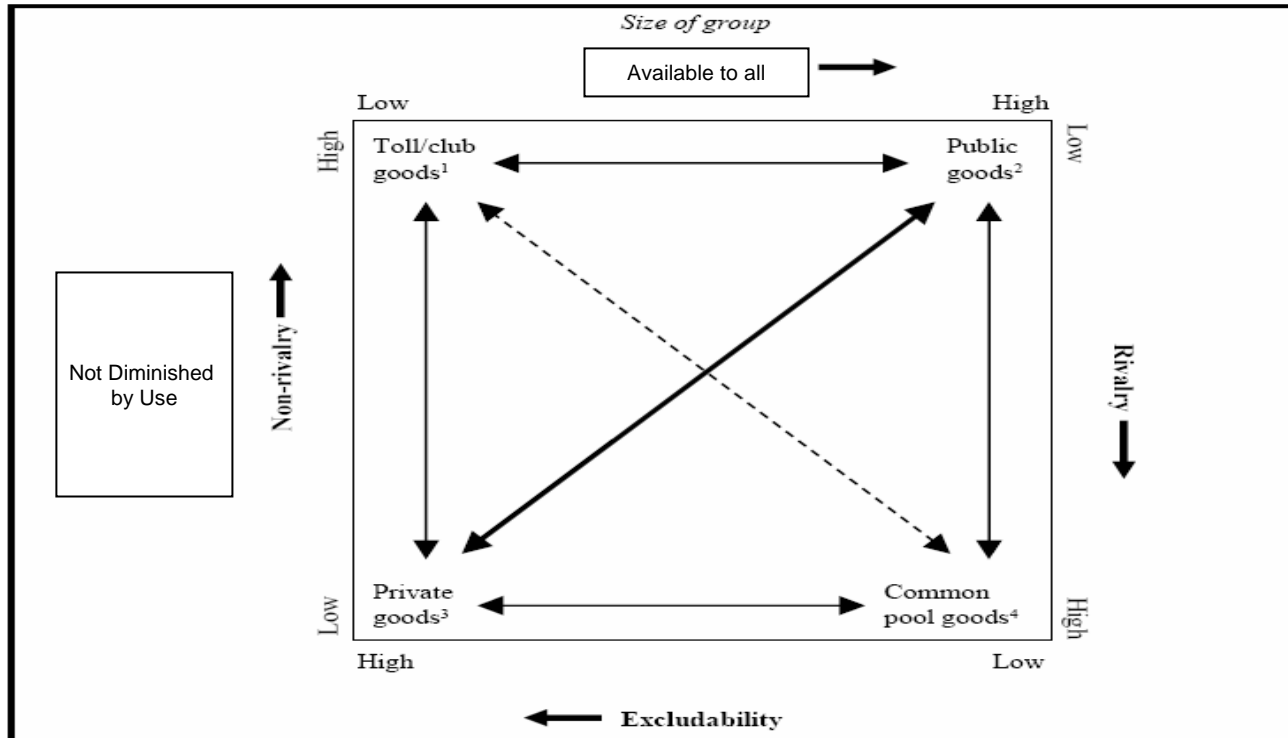
- Common space
- Increased dialogue
- Guidelines, frameworks
- Oversight
- Information on past experiences
- Clear incentives
- Shared benefit

Benefits of Collaboration

- Improved access to scientific and financial resources
- Synergies in research
- Access to new markets
- Increased capacity to innovate
- Increased impact

Public, Private and other goods

Relationship of public, private, and other goods to rivalry and excludability*



Notes:

* In the case of pure goods, use by one person does not reduce availability to others (non-rivalry) and individuals cannot be excluded from their consumption (non-excludability).

¹ e.g. farmer-financed research.

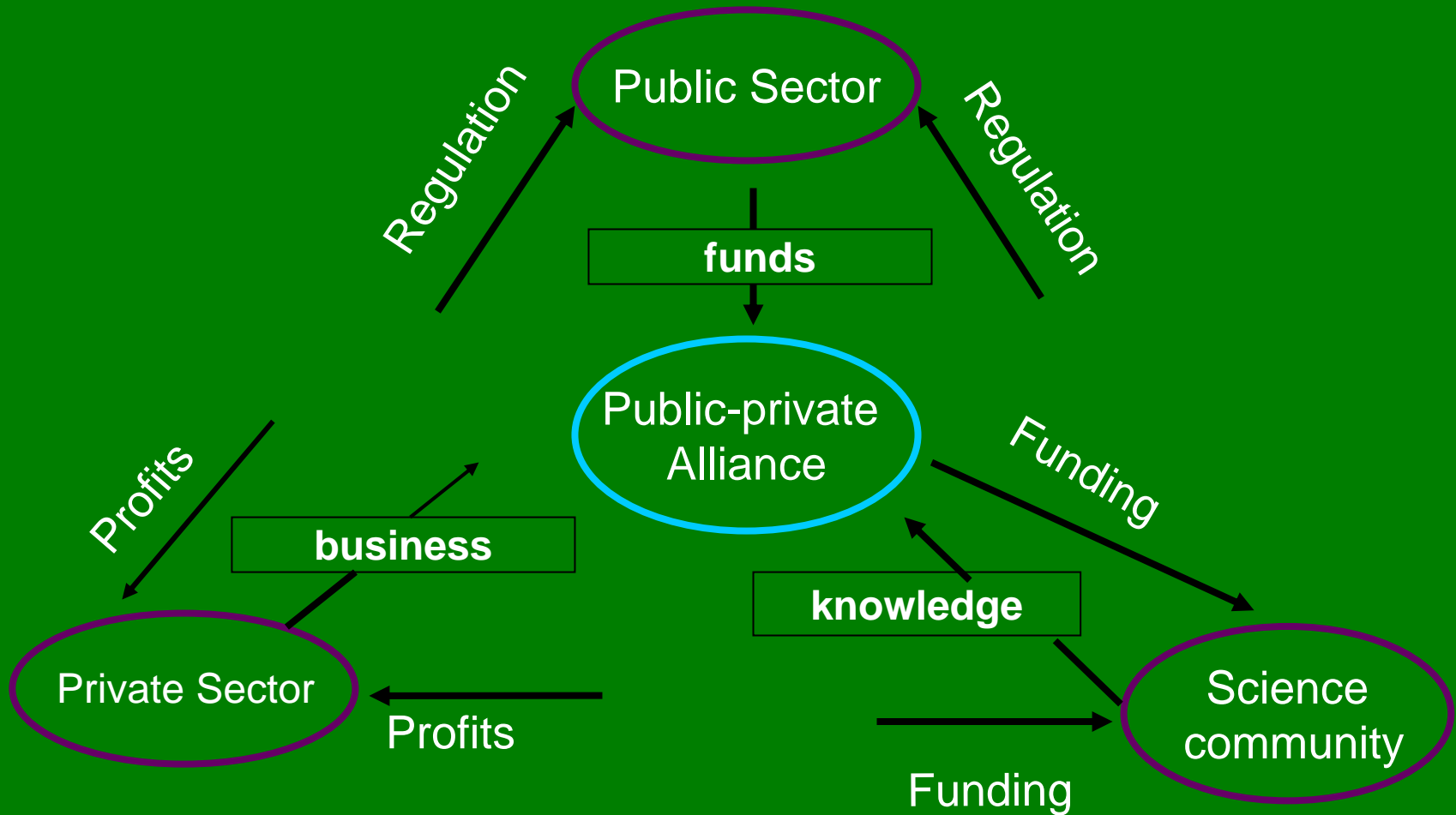
² e.g. research done by U.S. Department of Agriculture agencies.

³ e.g. research products covered by intellectual property rights.

⁴ e.g. use of scarce natural resources.

Sources: Developed from: basic elements in BUCHANAN (1968) and additional dimensions in VAN DER MEER (2002). In: BYERLEE and ECHEVERRIA (2002: 125).

PPP in Ag Research India – National Ag Innovation Project



What's Next in Mobilizing Resources for Agricultural Innovation for the Tropics ?

An Invitation to a Dialogue

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