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Investments Trends in and Funding Options for Agricultural Research with Focus on Sub-Saharan Africa

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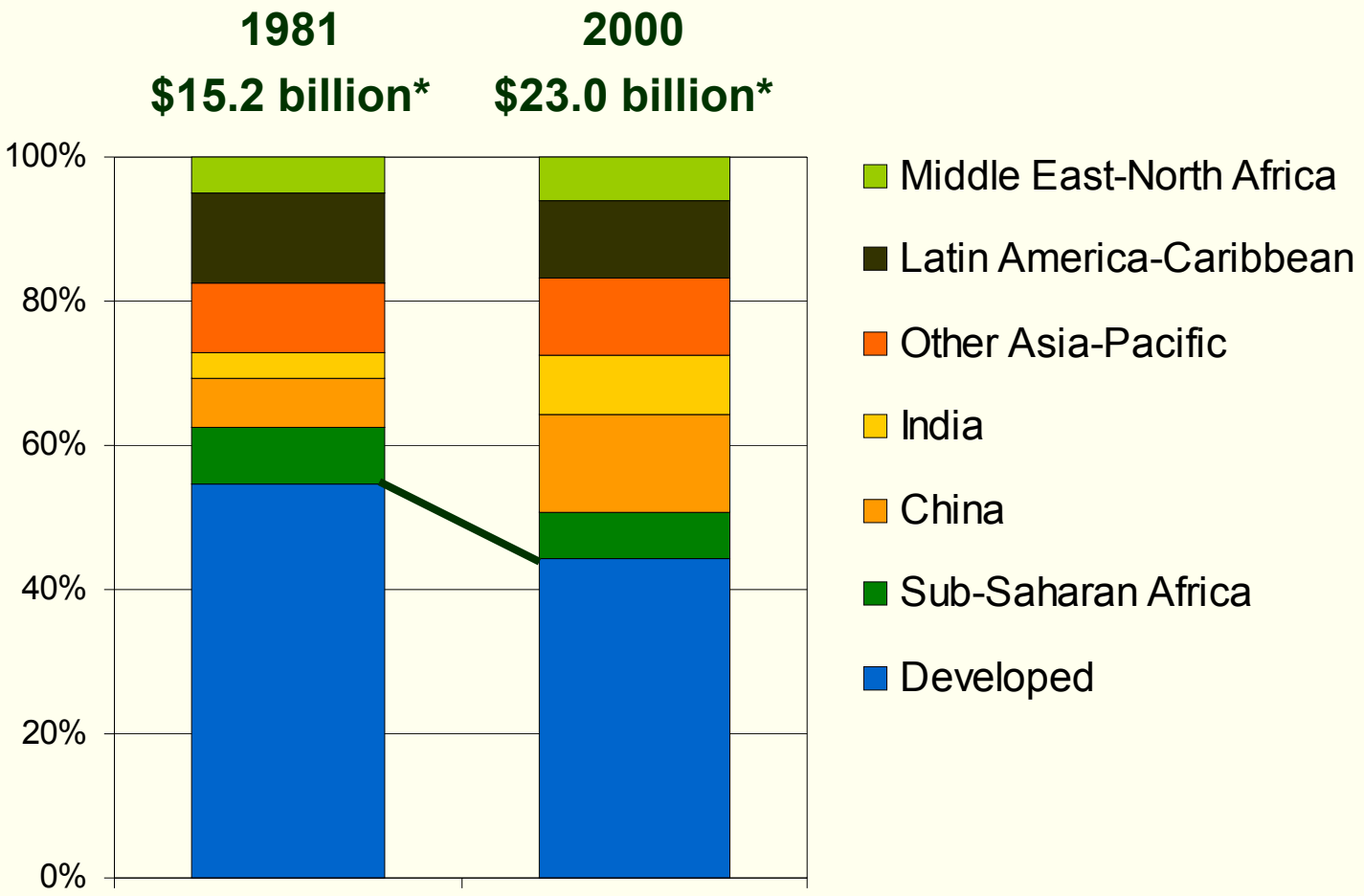
Outline Presentation

- Overview of global spending trends in agricultural R&D with a special focus on Sub-Saharan Africa
- Some trends on funding resources for African agricultural R&D
- Alternative funding mechanisms
- Concluding comments

Public and Private Agricultural Investments R&D Worldwide and in Sub-Saharan Africa specifically

Regional Public Agricultural R&D Expenditure Patterns, 1981 and 2000



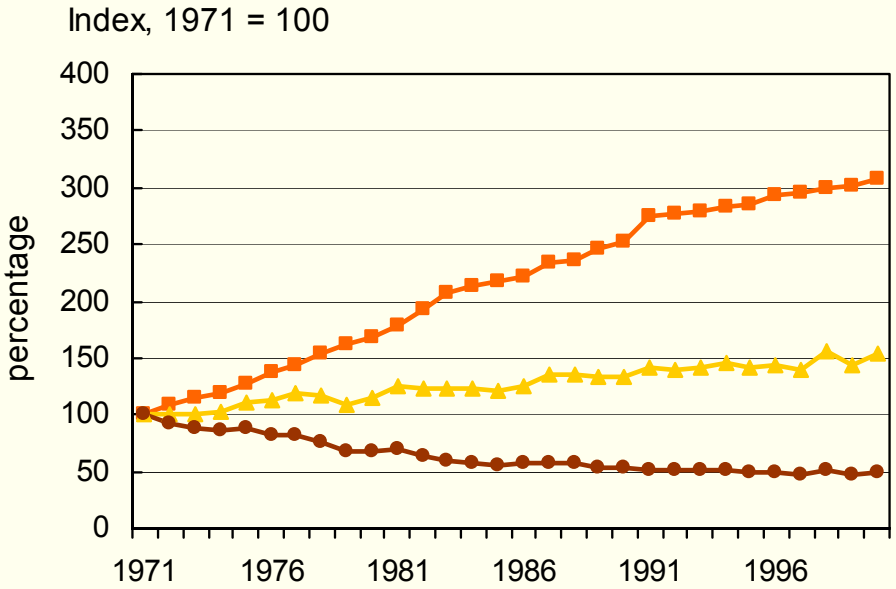
* in 2000 international prices

Spatial Concentration of Public Agricultural R&D Spending, 2000

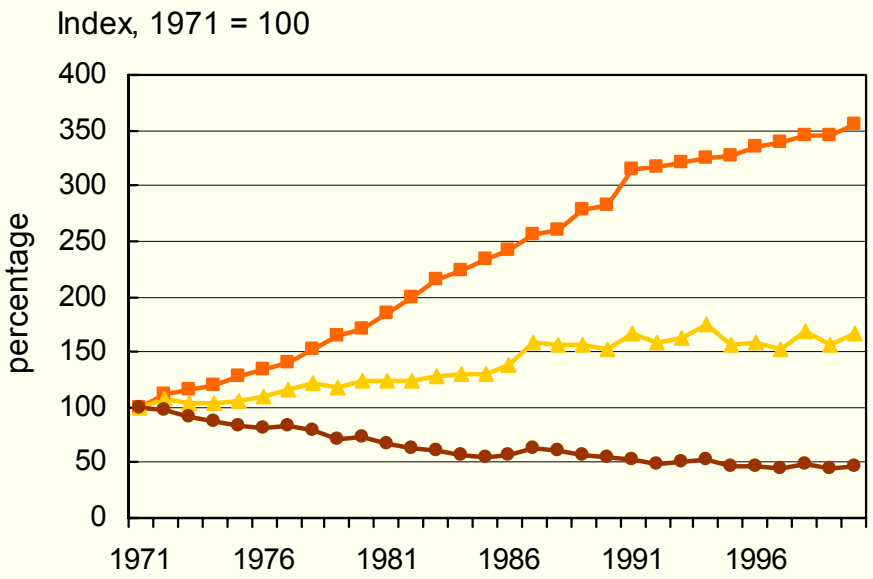
	Agr. R&D Spending	GDP	Population	Agr. Land	Agr. GDP
			(*percentage*)		
Top 5	50.0	52.6	51.8	22.7	40.4
Top 10	62.4	66.5	56.1	33.2	53.4
Bottom 80	6.3	5.7	11.3	13.6	5.8

Long-term Trends in Sub-Saharan African Public Agricultural R&D

27-country sample

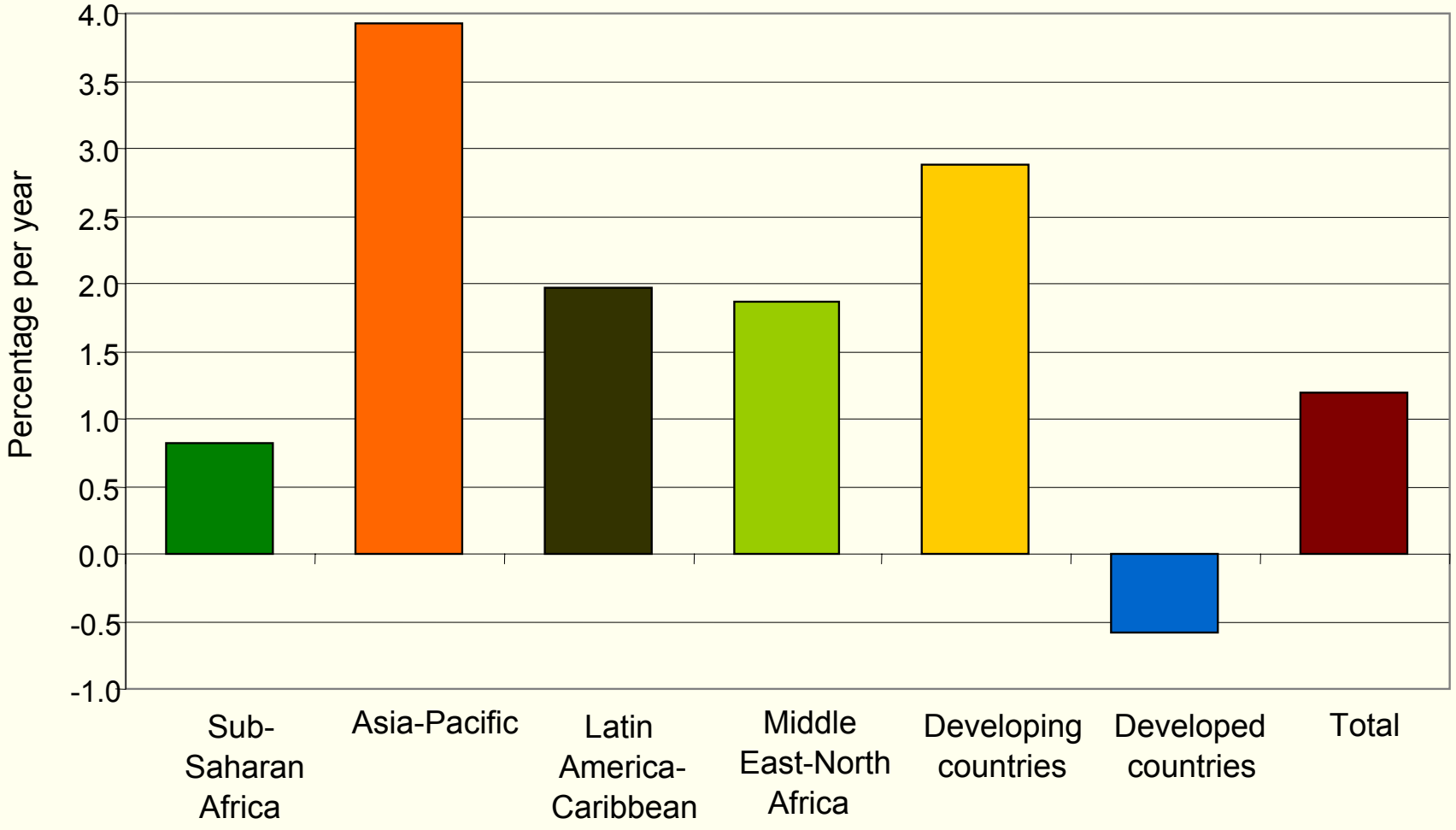


25-country sample
(excl. Nigeria and South Africa)



Researchers | Expenditures | Exp. per researcher

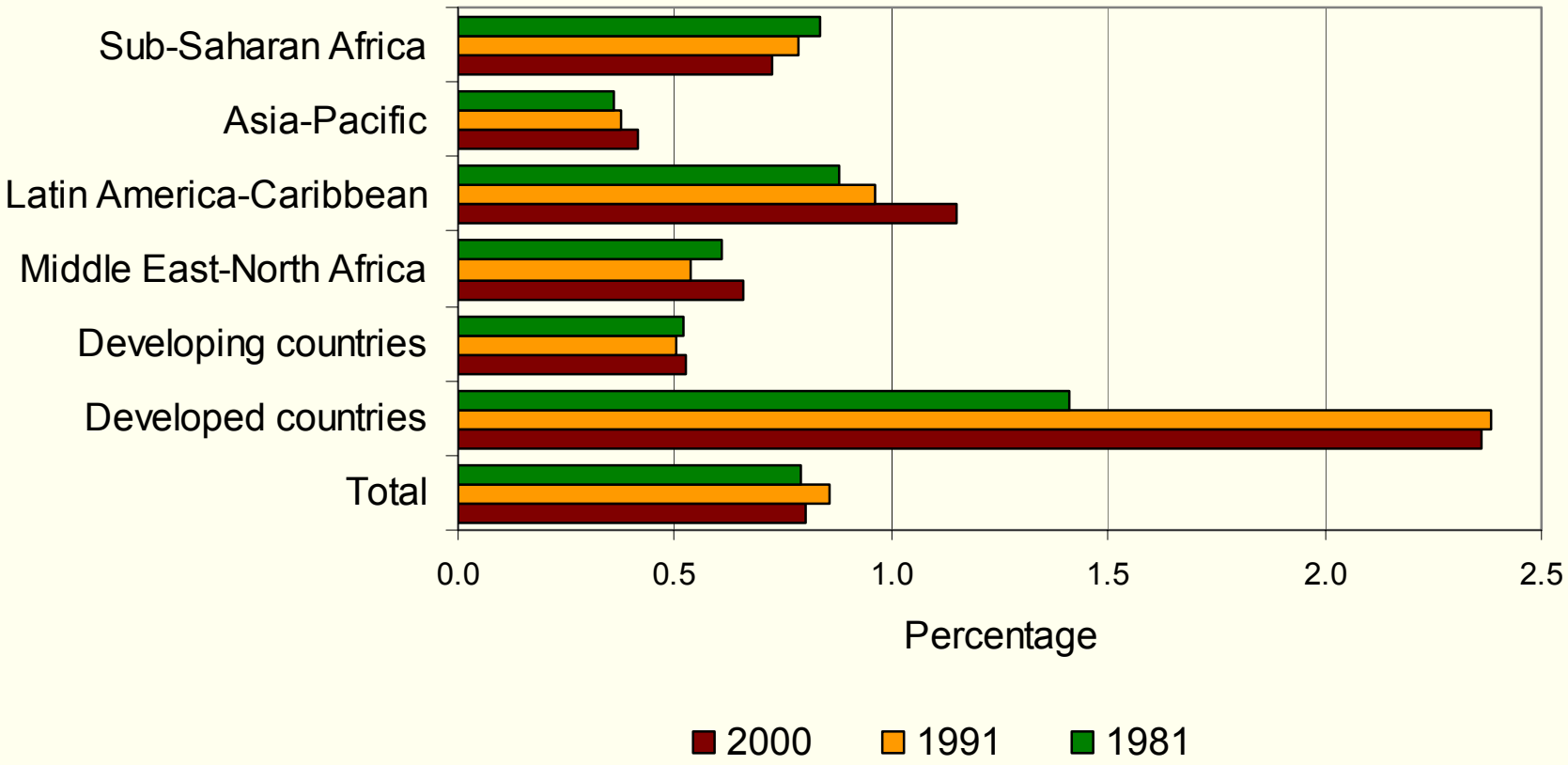
Regional Growth Rates, 1991-2000



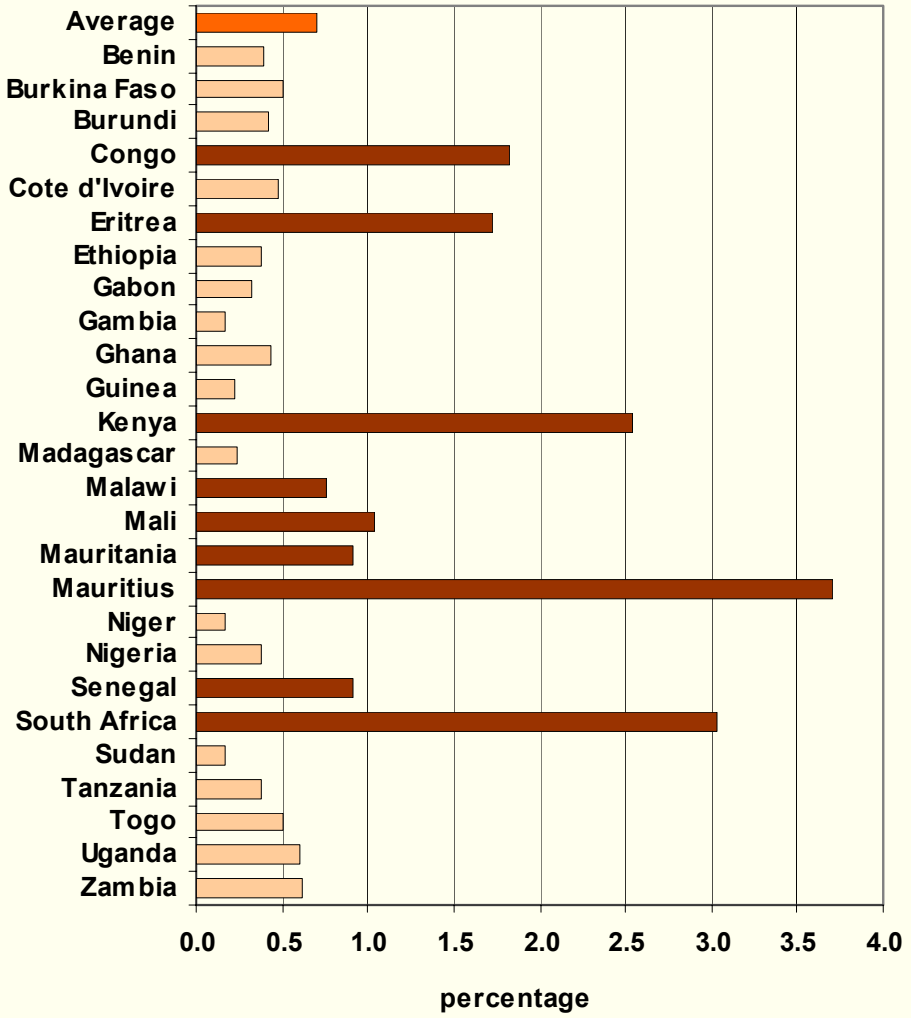
Variation among Sub-Saharan African Countries: 1991-2000 Annual Growth Rates

total spending		
positive	**stagnating**	**negative**
South Africa (1.8%)	Benin (-0.7%)	Burundi (-16.2%)
Mauritania (3.7%)	Kenya (0.6%)	Congo (-12.7%)
Gabon (4.1%)	Mali (1.1%)	Sudan (-11.0%)
Botswana (5.6%)	Ghana (1.1%)	Niger (-8.4%)
Mauritius (6.2%)		Madagascar (-7.9%)
Nigeria (6.3%)		Zambia (-7.3%)
Ethiopia (7.1%)		Gambia (-7.1%)
		Malawi (-5.5%)
		Togo (-4.4%)
		Côte d'Ivoire (-3.4%)
		Burkina Faso (-3.2%)
		Senegal (-3.1%)
		Guinea (-2.8%)

Public Agricultural Research Intensities, 1981-2000



Variation among sub-Saharan African Countries: 2000 Intensity Ratios



Public and Private Agricultural R&D Spending, 2000

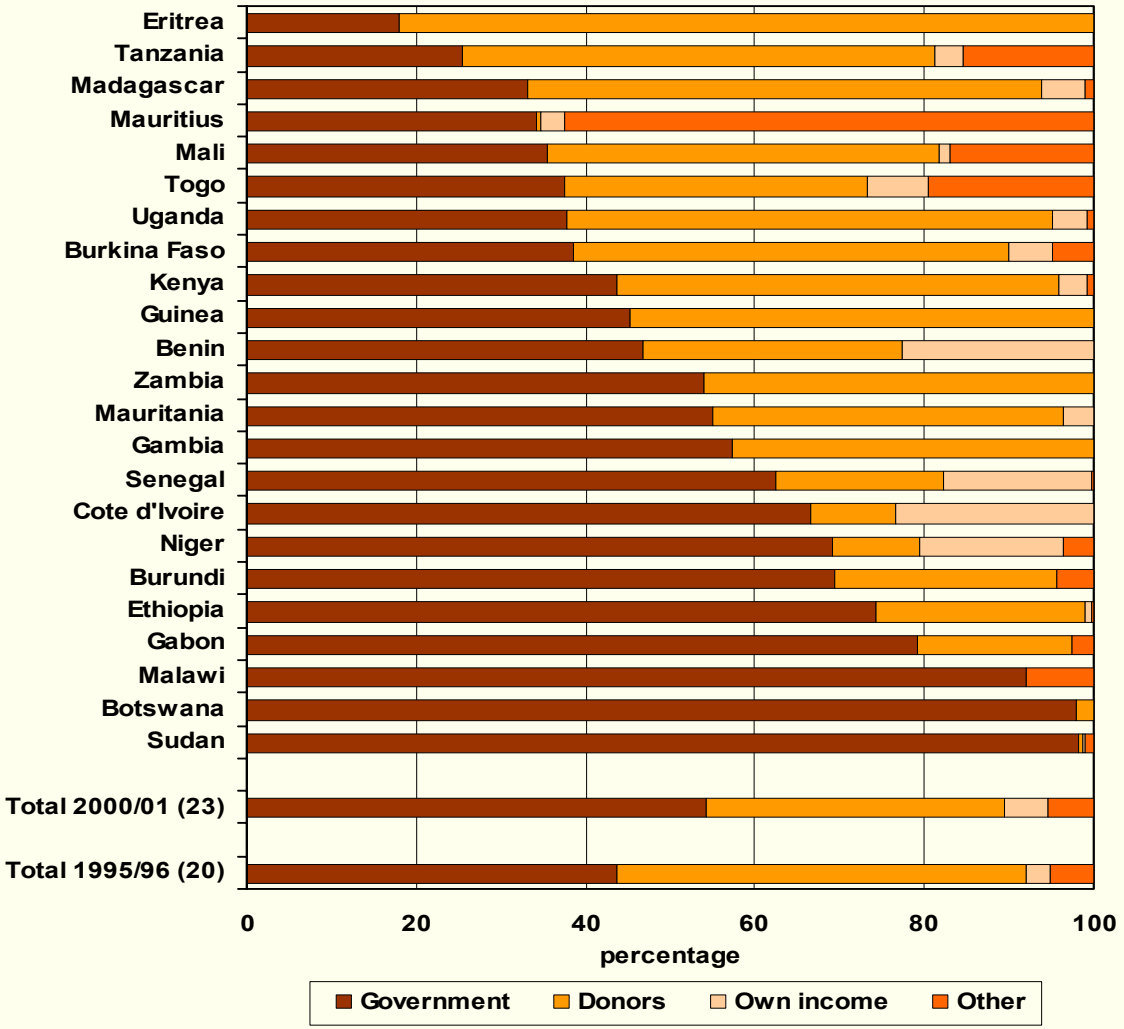
	Expenditures			Shares		
	Public	Private	Total	Public	Private	Total
	(*billion 2000 international dollars*)			(*percent*)		
Developing countries	12.8	0.9	13.7	93.7	6.3	100
Developed countries	10.2	12.6	22.8	43.7	54.3	100
Total	23.0	13.4	36.4	63.1	36.9	100

Public and Private Agricultural R&D Spending in Sub-Saharan Africa, 2000

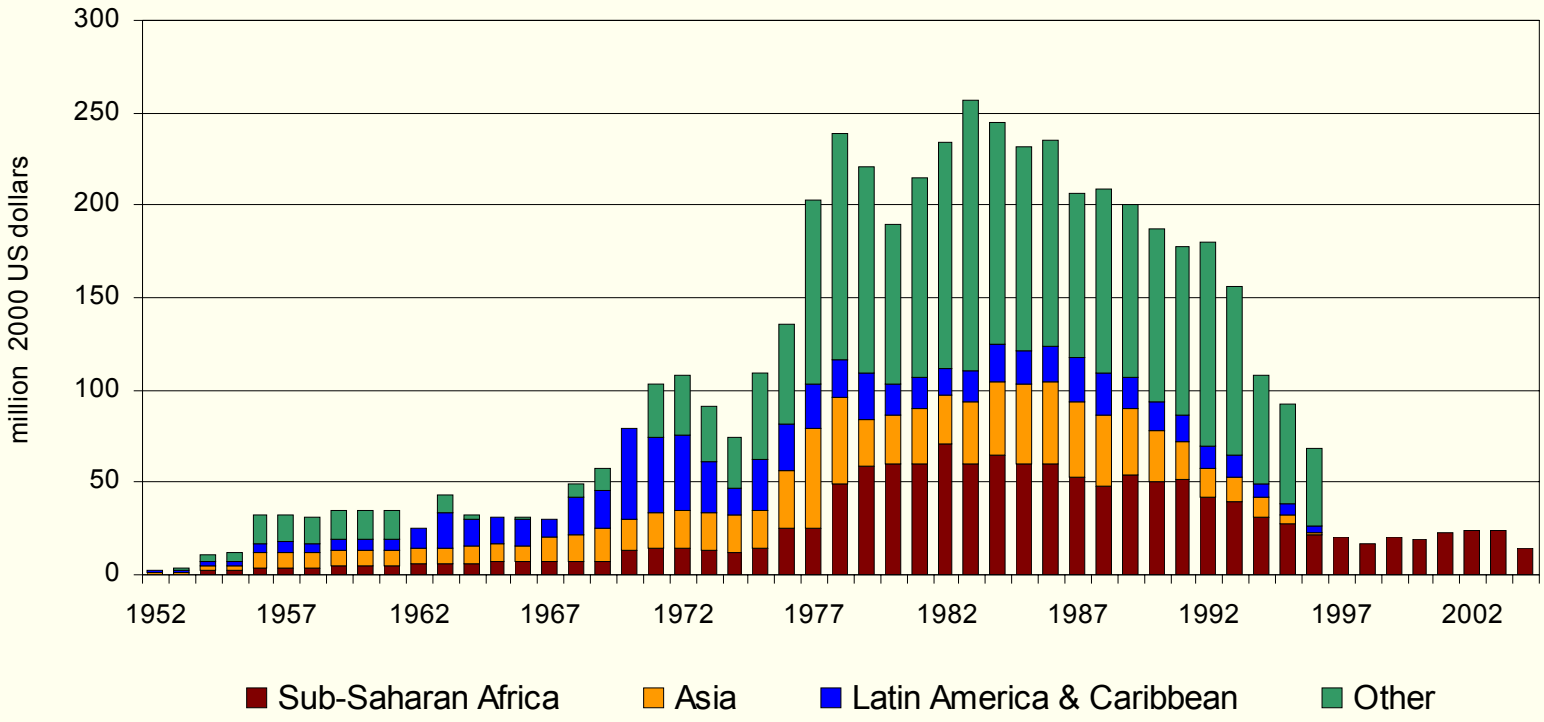
	Shares		
	Public	Private	Total
		(*percent*)	
South Africa	95.9	4.1	100
Other SSA countries (26)	98.6	1.4	100
SSA total (27)	97.7	2.3	100

Funding Options for Sub-Saharan African Agricultural R&D

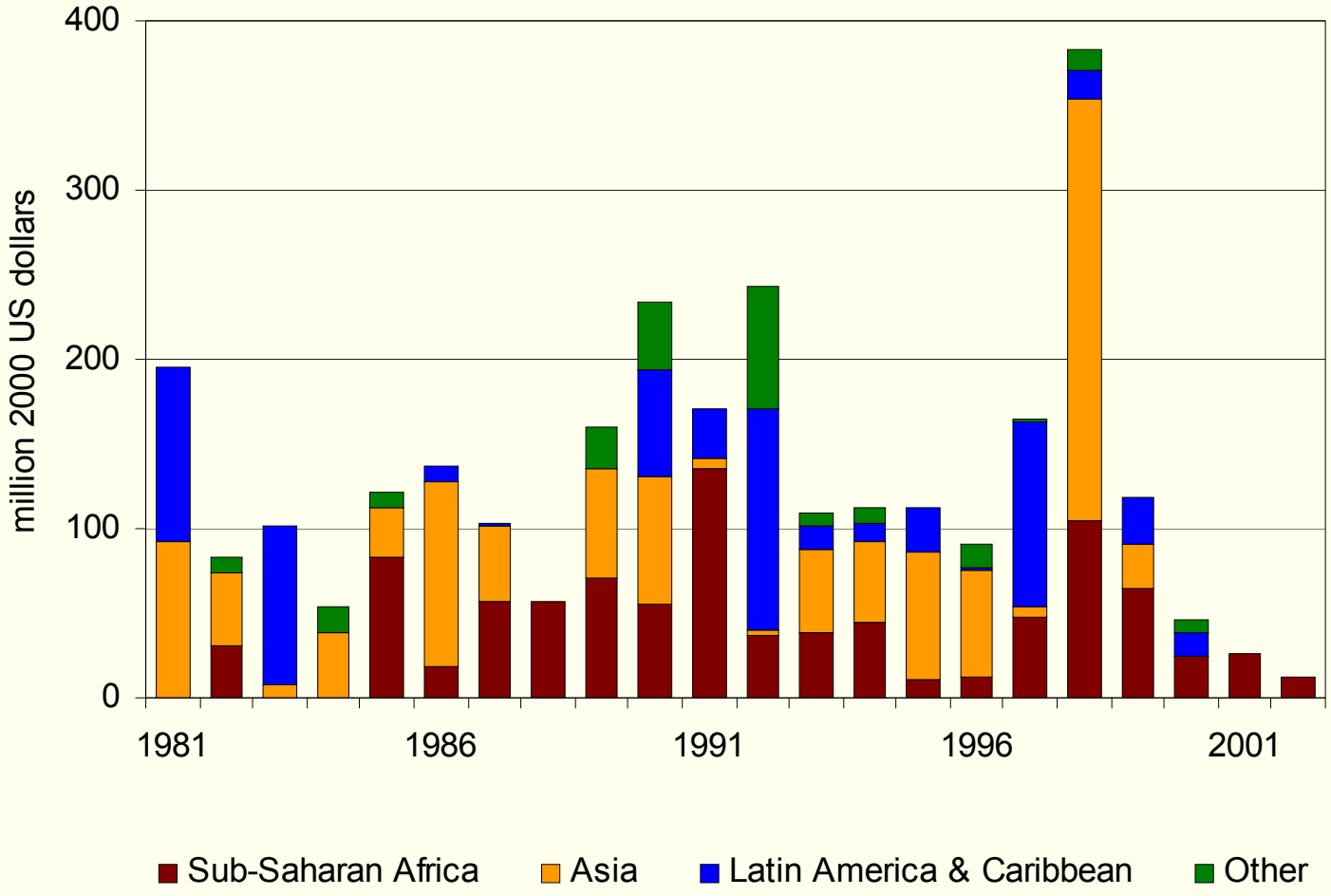
Trends: Funding Sources for Sub-Saharan Africa, 2000/01



Trends: USAID (1952-2004)



Trends:
World Bank Lending (1981-2002)



Funding Sub-Saharan African Agricultural R&D: The Context

- Despite high pay-offs to investments in agricultural R&D, chronic under-funding continues to threaten the performance or existence of agricultural R&D agencies.
- The quality of organization and management of agricultural R&D are often poor. More could be achieved with available resources if they are better targeted and used more efficiently.
- Many public agencies have insufficient funds for maintenance of human and physical capital.
- In addition, the research agenda has expanded to include new areas of concern such as environmental, social and poverty issues.

Funding Sub-Saharan African Agricultural R&D: The Context (cont'd)

- As shown, agricultural R&D in Sub-Saharan Africa remains highly dependent on direct government allocations.
- And, African agricultural R&D is also highly dependent on donor contributions, but these have been declining.
- There is an immediate need to find alternative institutional funding mechanisms.

Alternative Funding Mechanisms and Experiences in Sub-Saharan Africa

- Greater participation of higher-education sector
  - Potential to increase human resources to research, but teaching remains main focus of faculty staff.
  - Research budgets at SSA university are often small or non-existent.
  - Increasing share in SSA agricultural R&D: 9% in 1971 to 16% in 2000
  - Although number has increased, individual capacity remains small.
- Competitive funding mechanisms
  - Aim to optimize performance of agricultural R&D by promoting collaboration and improve accountability and flexibility.
  - Should be considered to be complementary to direct government allocations as they often fund specific (short-term) projects and often only operational costs.
  - High transaction and do not work in small agricultural R&D systems.
  - Becoming more common in SSA at national and regional levels; also included in (almost) all World Bank projects on agricultural research.

Alternative Funding Mechanisms and Experiences in Sub-Saharan Africa (cont'd)

- Commercialization of research products
  - In the form of contract research, sale of improved seeds, other products.
  - Can contradict public-good nature of research output.
  - Often small share of budget, but increasing in some SSA countries.
- Levies on production
  - Often raised by commodity associations to conduct their own research or to fund research at other research organizations.
  - Can result in more demand-driven system and increase total financial resources available for agricultural research.
  - Mainly on exports crops such as coffee, tea, cotton (Kenya, Tanzania, Uganda).

Alternative Funding Mechanisms and Experiences in Sub-Saharan Africa (cont'd)

- Stimulate more private-sector involvement
  - Especially in countries with liberalized markets and proper IPR regimes.
  - Could stimulate private sector participation by offering tax concessions.
  - Increases total resources available for research.
  - Private sector involvement remains small in SSA: 2% of total public & private spending in 2000.
- Establish public-private partnerships
  - Provides opportunities to improve efficiency of entire research system by developing complementarities and interactions between both sectors.
  - Goal of profit sector is profit-making and so partnerships with private sector has the risk that attention is diverted away from the needs of small scale farmers.
  - Important focus in debate on African agricultural research.
  - Few public-private partnerships in effect (mostly with multinationals).

Alternative Funding Mechanisms and Experiences in Sub-Saharan Africa (cont'd)

- Research foundations
  - Fund and conduct agricultural research (national/international).
  - Those that have national/local funding support or endowments will remain important players.
  - Examples: Rockefeller, Ford, Bill & Melinda Gates, African Agricultural Technology Foundations.
- Regional and international partnerships
  - At larger scale than what one country could provide freely.
  - Increasing number of networks that fund and execute research
  - FARA, ASARECA, CORAF/WECARD, SADC, CGIAR, other.
  - Need to increase funding at regional/global level.
  - In addition, more harmonization at funding and execution levels are needed to efficiently manage large global challenges.

Concluding Remarks

- Investments in agricultural R&D yield high returns and agricultural R&D plays a major role in the provision of food for large and expanding populations.
- Therefore, increasing the amount spent on public R&D in developing countries that are heavily reliant on agriculture is wise, but difficult because it competes with non-agricultural sectors such as health and education.
- In Sub-Saharan Africa specifically, growth rates in agricultural R&D spending have been decreasing, donor dependency is still high, and government sector remains main provider.
- More resources for agricultural R&D are needed in Sub-Saharan Africa as well as many other developing countries.

Concluding Remarks (cont'd)

- In addition, innovative funding mechanisms are required to develop more effective and efficient research systems.
- A number of combinations of these mechanisms are possible, but depend on specific nature of the research and funding source.
- In addition, better targeting and usage of the available resources is critical to make agricultural systems more effective.
- A number of countries have had successful reforms of their research systems resulting in:
  - Greater client orientation through a more demand-driven approach.
  - Increasing diversity in funding sources.
  - Growing collaborations at national, regional, and international levels, which include execution as well as funding of joint-research activities.