



Global Trends in Agricultural Research Investments

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Overview presentation

- **Background**
- **Global trends in agricultural research investments**
- **Alternative measurements for investment intensity**
- **Focus on Africa**
- **Concluding remarks**

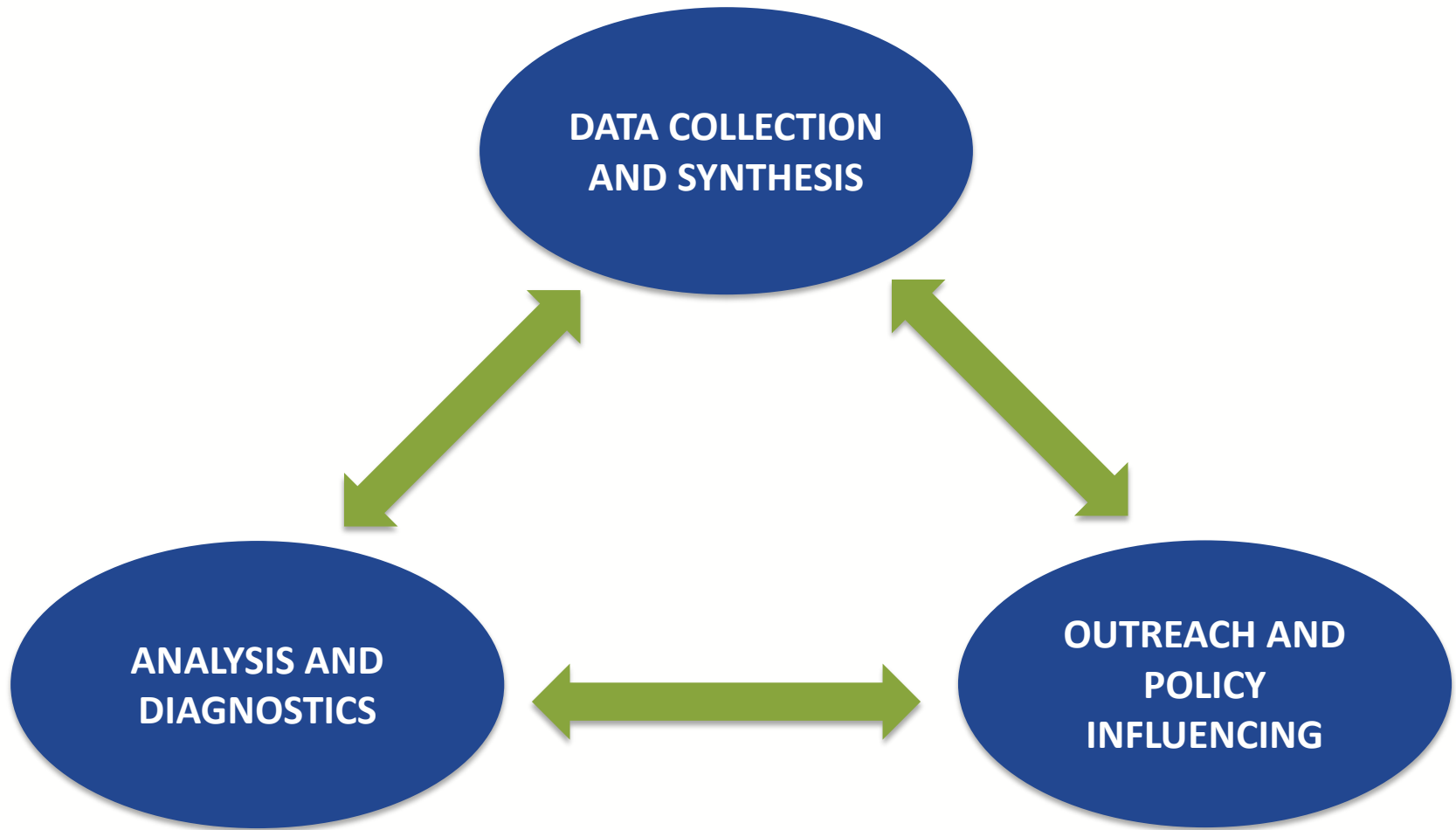


Background

Overview of ASTI

- ASTI provides open-access data and analysis on agricultural research investments and human capacities in low- and middle-income countries
- Large network of national, regional, and international partners; led by IFPRI
- In close collaboration with national agricultural research institutes (NARIs)
- Provides:
 - Trends over time at country/regional levels
 - Comparisons within and across countries/regions

Three programmatic pillars

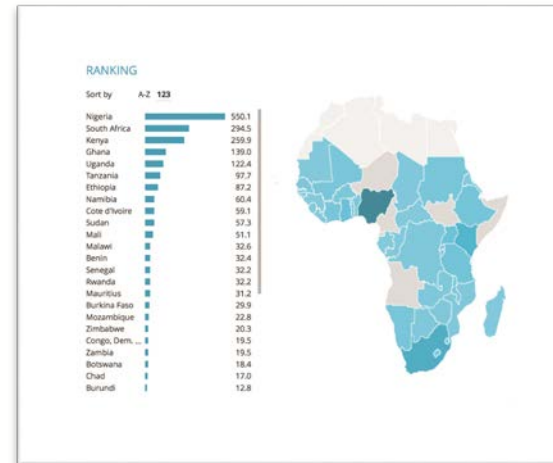


Various online tools (www.asti.cgiar.org)

ASTI's interactive country pages



ASTI's benchmarking tool



Women in agricultural research portal

in collaboration with **AWARD** (Agricultural Women's Empowerment and Advancement for Development)

WOMEN IN AFRICAN AGRICULTURAL RESEARCH DATA PORTAL

About this portal
 Female agricultural researchers, professors, and senior managers offer different insights from their male counterparts. They provide an important perspective in addressing the unique and pressing challenges of all farmers, and female farmers in particular. Consequently, it is crucial that agricultural research agencies employ a mix of male and female researchers.

Country scoreboards
 The country scoreboards provide a comprehensive overview of the distribution of male and female agricultural researchers by degree, age bracket, and institutional category for the latest year available. They permit easy comparisons of gender-disaggregated human resource indicators across countries.

Country pages
 More detailed sex-disaggregated timeseries data on male and female agricultural researchers are available on the ASTI/R&D country pages. These interactive pages facilitate comprehensive cross-country data comparisons. All graphs and data on the country pages are available for download and further customization by users.

ASTI's agency directory

Agency	FTEs (2014)	Research focus
KALRO Kenya Agricultural and Livestock Research Organization	515.0	45.6% 22.2% 12.0% 20.4%
KMFRI Kenya Marine and Fisheries Research Institute	121.0	43.8% 32.0% 21.2%
KFRRI Kenya Forestry Research Institute	92.0	100.0%
KALRO-SRI Sugar Research Institute	28.0	100.0%
KIRDI Kenya Industrial Research and Development Institute	24.6	10.0% 90.0%
KIPPRA Kenya Institute for Public Policy Research and Analysis	8.4	100.0%

Global investment trends

Agricultural research investment trends

Based on preliminary data

- Rapid growth in agricultural research investments (excluding the private for in middle-income countries (particularly China) caused the share of middle-income countries in global spending to increase from 44 to close to 60 percent during 2000–2013.
- Agricultural research investment y high-income countries remained fairly stagnant during the 2000–2013 period.
- China, India, and Brazil accounted for about one-fifth of global investments in agricultural research (excl. the private-for profit sector).

Agricultural research investment intensity

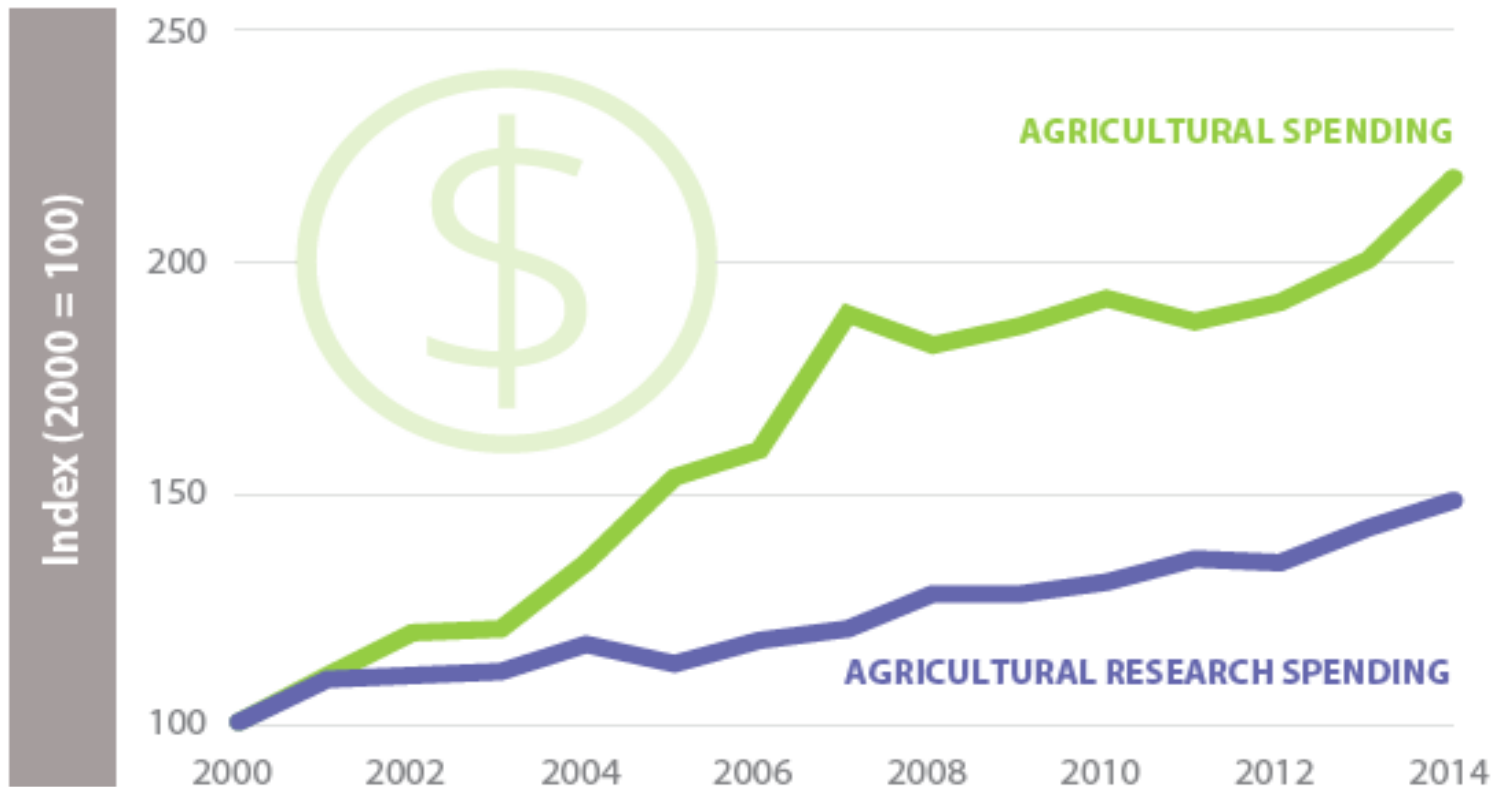
- Growth in low- and middle-income countries' research investments is offset by higher growth in agricultural production.
- High-income countries, on average, continue to have the highest research investment intensities.

Datasets will be finalized and a report with global trends in agricultural research investments will be published late 2017.

From global to country levels: Focus on Africa

Ag and ag research spending compared

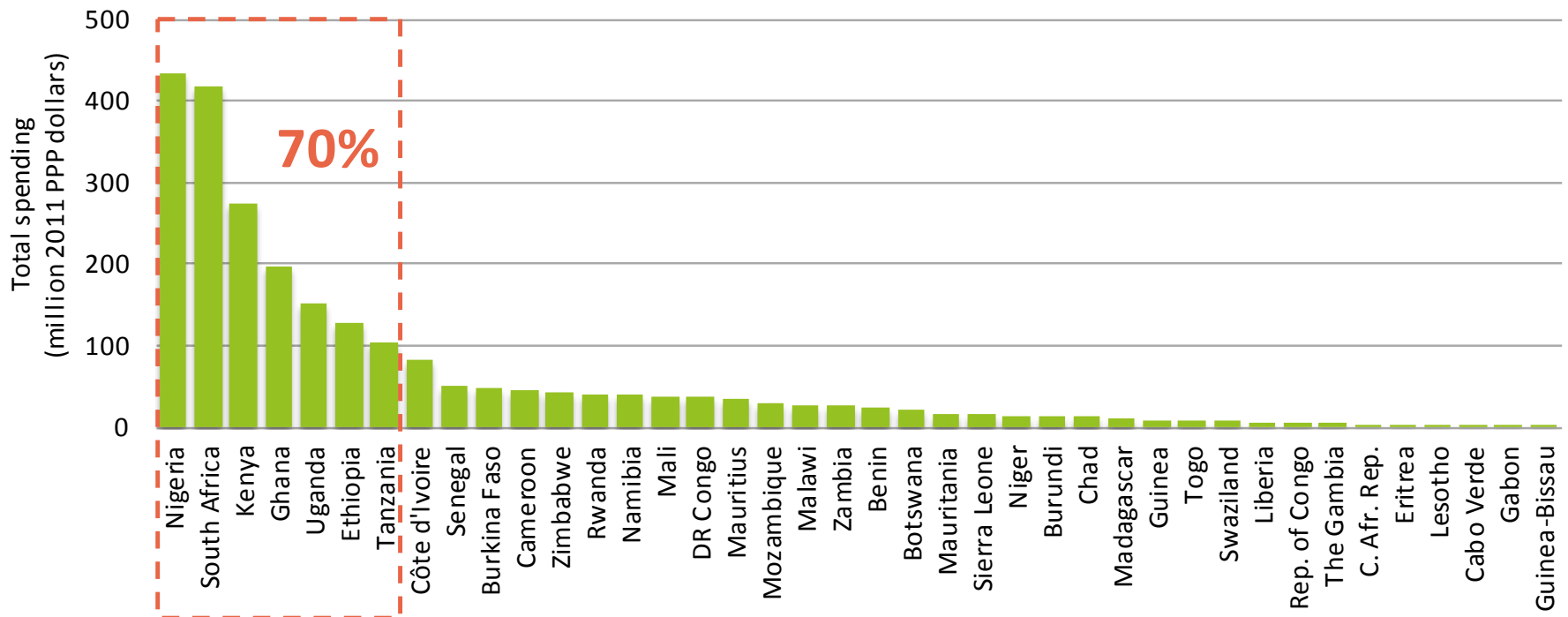
- Agricultural research spending growth lags behind growth in investment in other areas such (irrigation, subsidies, etc.)



Sources: ReSAKSS, ASTI

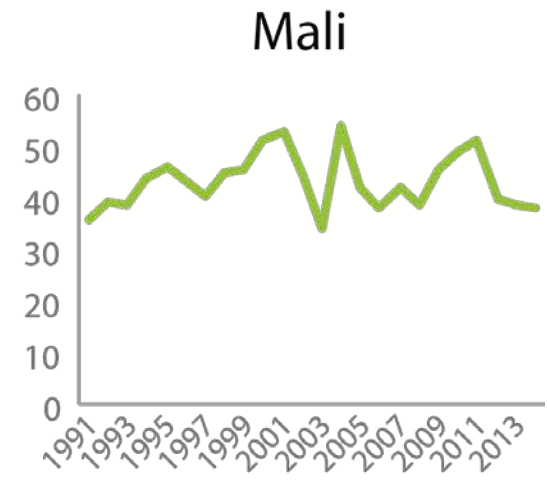
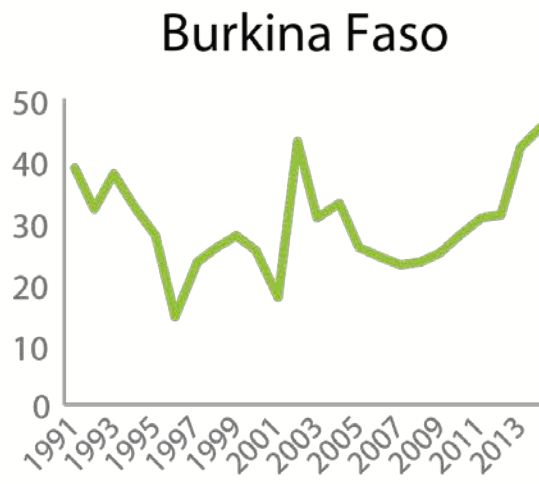
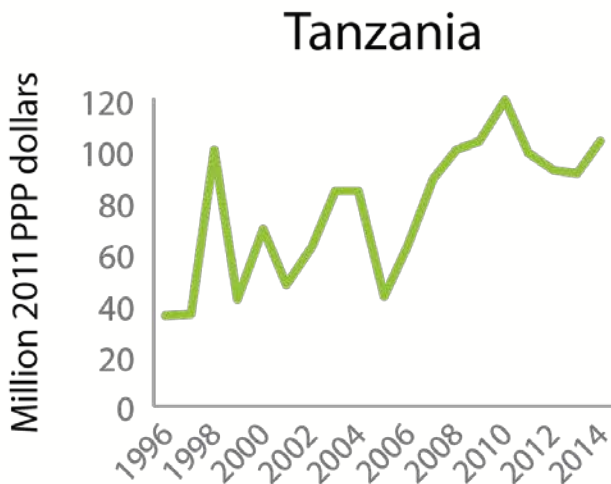
Agricultural research spending, 2014

- 7 of a sample of 40 countries account for 70% of the \$2.5 billion the region spent on agricultural research in 2014 (excluding the private-for-profit sector).
- 12 countries spent less than \$10 million.



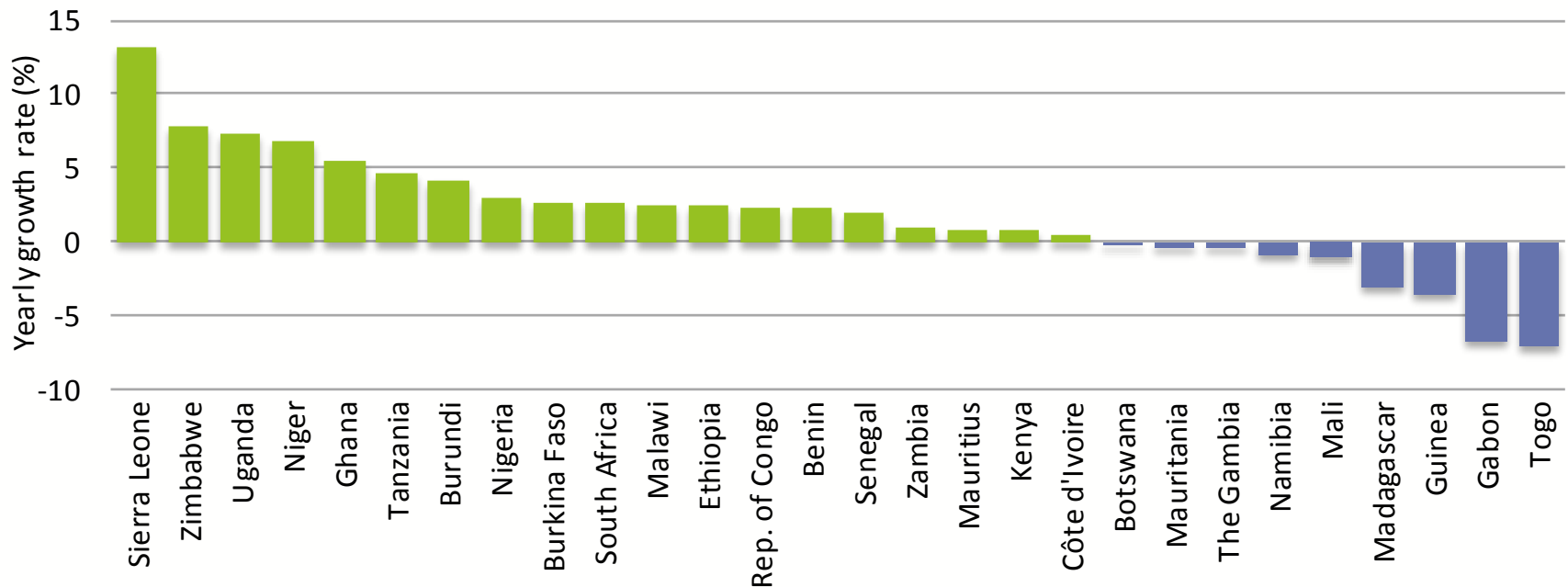
High funding volatility

- Agricultural R&D in SSA is more than twice as volatile as funding in other developing regions.
- Research agencies that are highly dependent on funding from donor and development banks are more vulnerable to funding shocks.



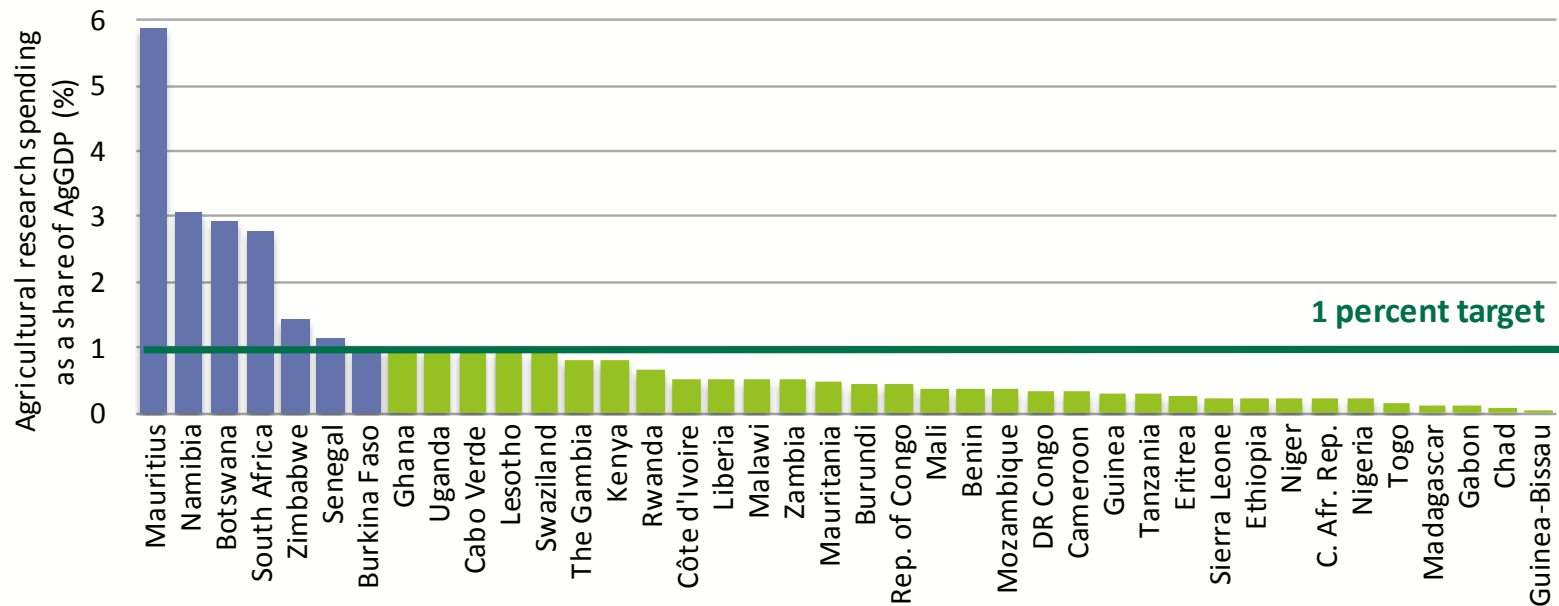
Two-speed growth, 2000–2014

- Numerous (generally larger) countries recorded substantial spending growth, but numerous (usually smaller) other reported the opposite.
- The extremely low (and often declining) spending and capacity levels of some countries call into question the effectiveness of their agricultural research programs.



Country-level spending intensity, 2014

- In 2014, Africa spent 0.42% of agricultural output on agricultural research, far below AU and UN 1-percent target of agricultural spending as a share of AgGDP.
- Only a few countries met the 1-percent target.
- Some limitations on a one-size-fit-all target.



Alternative measurement for investment intensity

Moving beyond the 1-size-fits-all targets

- Conventional target of investing 1 percent of AgGDP into agricultural research assume investments should be proportional to size of agricultural sector.
- Investment targets should be established based on structural characteristics of the country such as:
 - Country's income level.
 - Level of diversification of agricultural production.
 - Availability of relevant technology spillovers from other countries.
- Recently released ***ASTI Intensity Index***: Countries with a same mix of inputs are expected to require similar minimum levels of research investments.

What can we do with the ASTI index?

- Rank and compare countries according to R&D intensity levels.
- Identify underinvesting countries comparing intensity levels of countries with similar characteristics.
- Determine intensity gaps and define specific investment targets for different countries and regions.

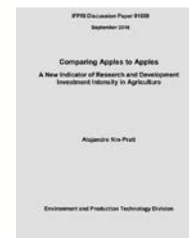
SSA's investment gap, including donor and nongovernment funding:

Actual agricultural research investment = \$2.5 billion (61%)

Investment gap = \$1.6 billion (39%)

Estimated attainable agricultural research investment = \$4.0 billion

<http://astinews.ifpri.info/2016/09/30/comparing-apples-to-apples-asti-discussion-paper-on-new-agricultural-intensity-index>



Concluding remarks

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- Middle-income countries, particularly China, continue to drive growth in agricultural research investment
- Regional trends are driven by larger countries and mask considerable variations across countries, warranting a closer look.
 - A large number of low- and lower-middle income countries have very small agricultural research capacities and are facing serious financial, institutional, and human resource capacities.
 - Need for different institutional arrangement beyond “a sustainable NARS for each country”.



ASTI
led by **IFPRI**

AGRICULTURAL SCIENCE & TECHNOLOGY INDICATORS

Open-access data and analysis on agricultural research investment and capacity in low- and middle-income countries



Thank you

www.asti.cgiar.org