Enabling the Business of Agriculture

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The future of food

Towards a food system that feeds
everyone,
everyday,
everywhere

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Three Global Challenges

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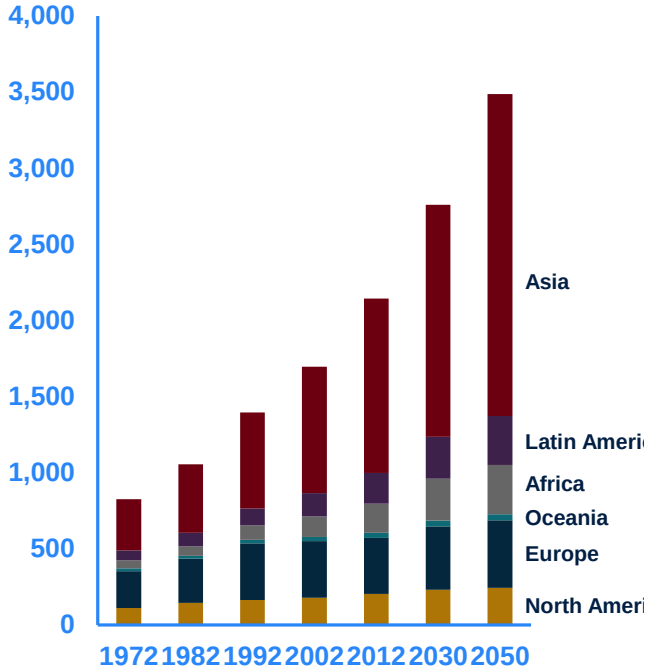
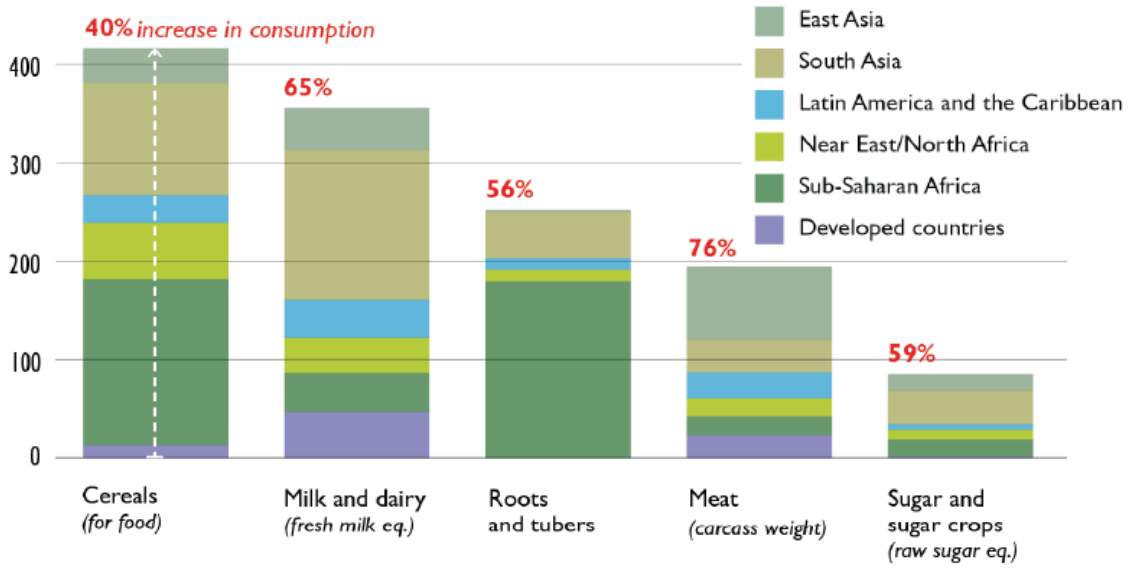
1

PRODUCTIVITY
Feeding 9 Billion People in 2050

Food Production by Region 1972-2050
(Constant 2004-06 US$)



Food Demand By Commodities in 2050 relative to 2005-07
(Billion kg per year)



CEA 2013 based on FAO 2012

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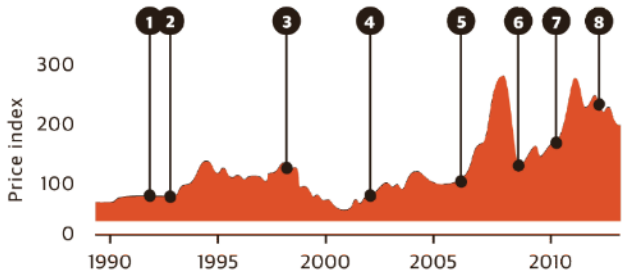
2 ADAPTATION
Climate Change Impacts on Food Systems

Problems Today:
Short Term Volatility

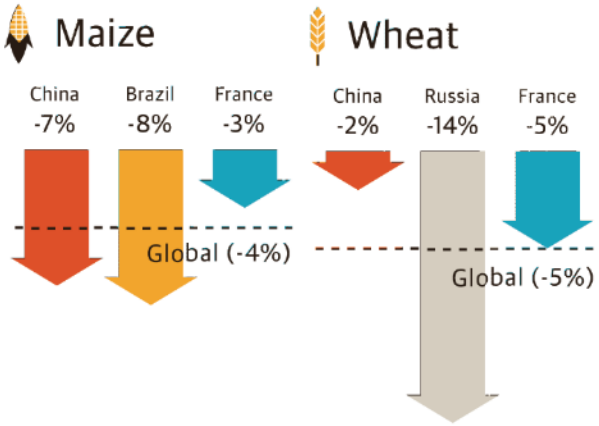
Recent price spikes for food commodities have been linked to extreme weather events



1. Australia wheat. **2.** US maize. **3.** Russia wheat. **4.** US wheat, India soy, Australia wheat. **5.** Australia wheat. **6.** Argentina maize, soy. **7.** Russia wheat. **8.** US maize.

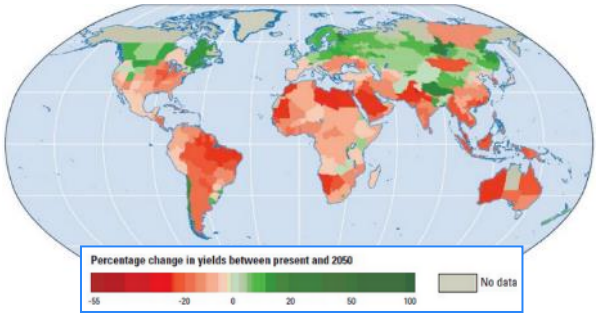
Issues Tomorrow:
Medium Term Yield Losses and Increasing Cost Structures

Maize and wheat yields show climate impacts



Uncertain Future:
Production Collapse in the Longer Term

Maize and wheat yields show climate impacts



CCAFS 2014; World Bank 2008

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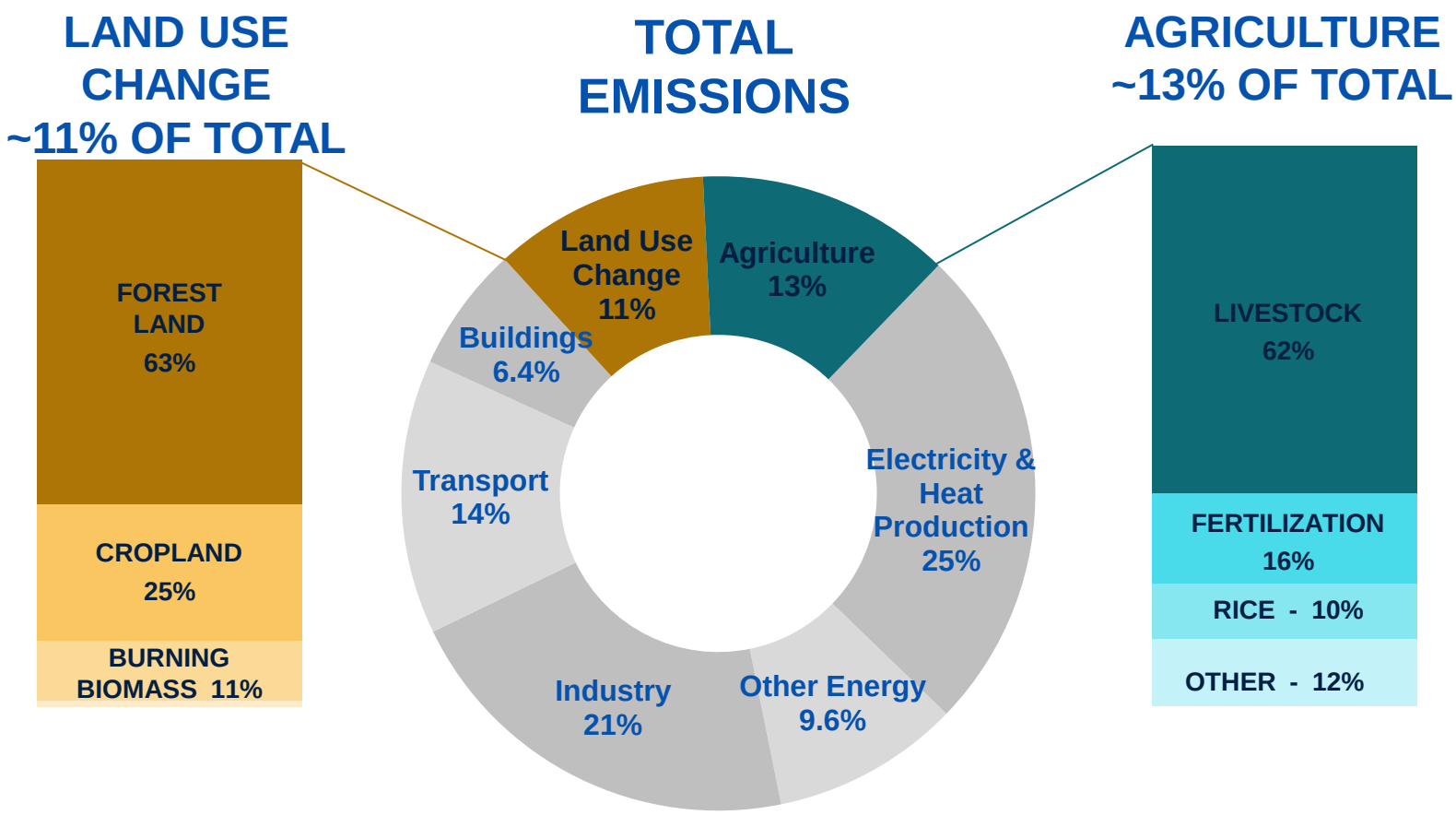
3a

EMISSIONS
Agriculture: **Today**



IPCC 2014

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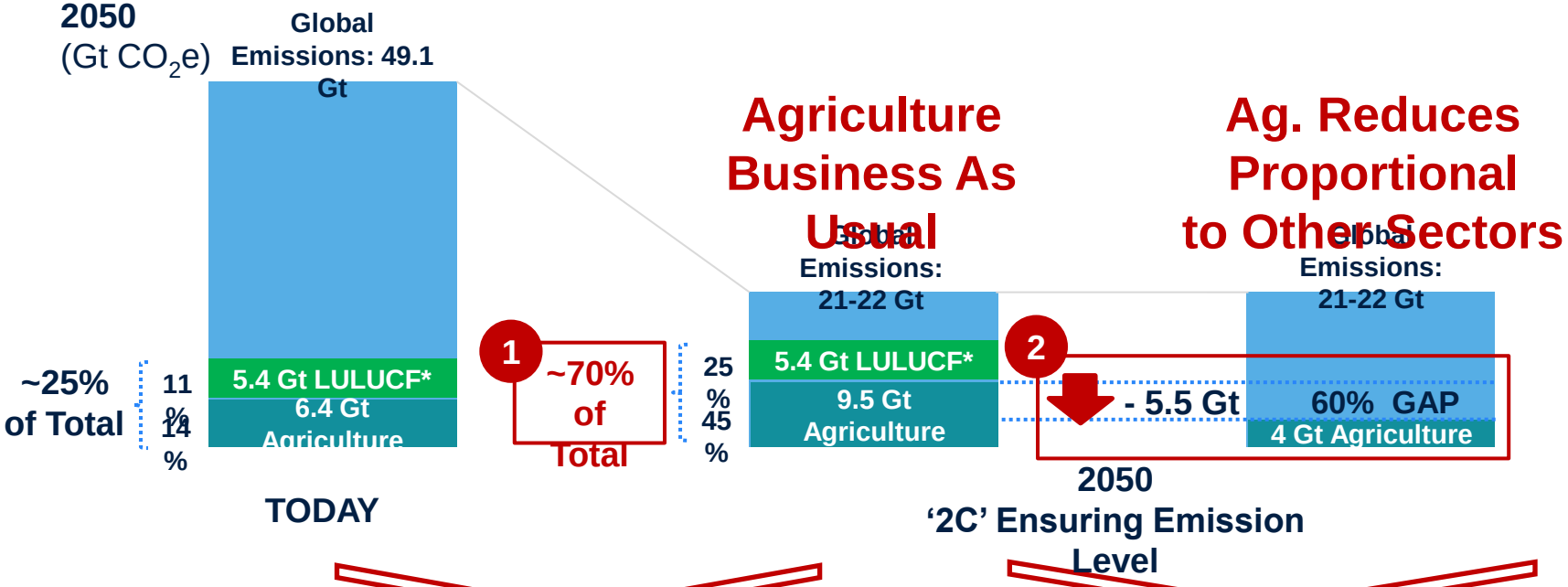
3b EMISSIONS
Agriculture: **Tomorrow**

Projections of Global, Agriculture and Land Use Change Related Emissions towards 2050



1

By 2050, Agriculture and Land Use Change could represent 70% of Global Emissions - if global emissions are reduced in accordance with a 2C goal, while Agriculture were to remain in business as usual.

2

By 2050, Agriculture will therefore have to reduce its emission intensity by 60%, if it is to maintain its footprint in parallel with overall emissions reductions. **This already assumes emissions from Land Use Change will have fallen to zero.**

WRI 2013

*Land Use, Land Use Change and Forestry

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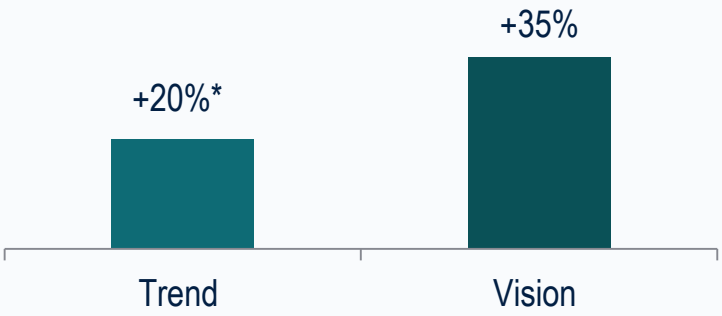
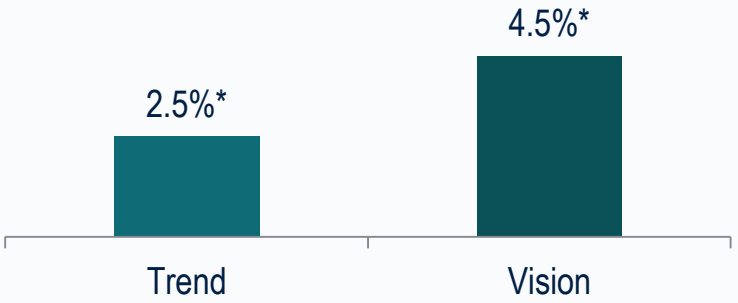
PROJECTED TRENDS WILL NOT GET US THERE

Increase in **Food Production** (%) by 2030



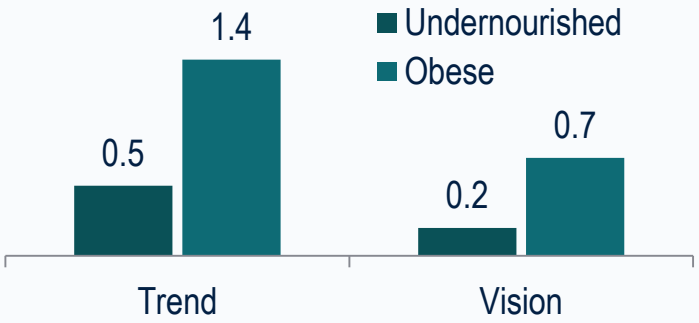
* Trend assumes a 2ºC warmer world by 2030 and an associated 10% reduction in food crop yields

Income Increase to 2030 (% per year)



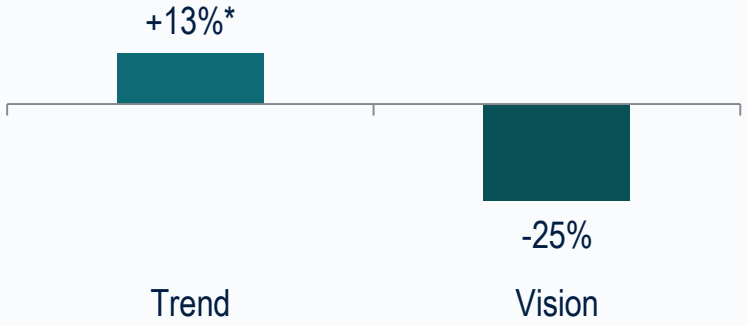
* 2.5.% is 10 yr trend growth (2003-2012) of agricultural labor productivity in low income countries projected forward to 2030; 4.5% is estimated agricultural incomes gains of the poor needed to end poverty by 2030.

Health Outcomes (bn people) by 2030



* Trend assumes 8% undernourishment rate and 6.8 bn people in developing countries by 2030, Vision is 3%.

GHG Emissions from Agriculture (% change) by 2030



* Trend: WRI estimates

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SPOTLIGHT ON AFRICA

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CHALLENGE 1: BROADEN GROWTH AND JOBS …

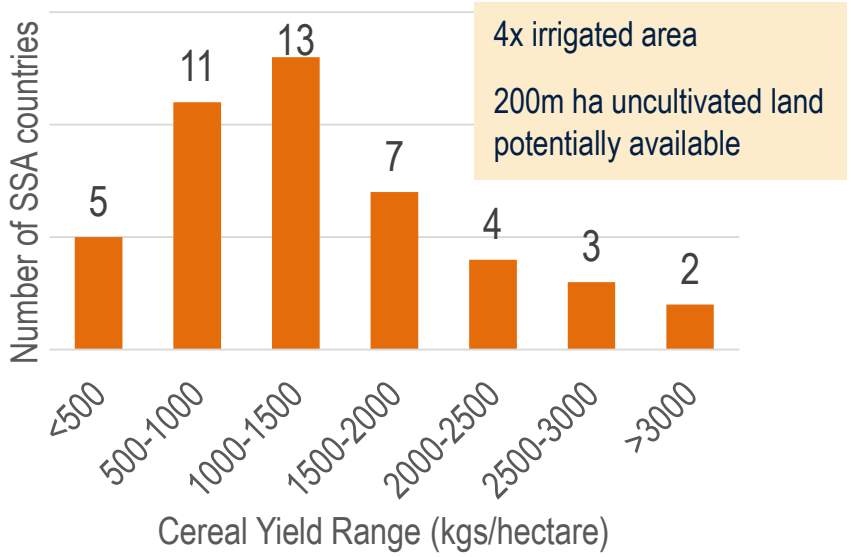
Recent growth, scope for further gains

Relatively strong recent growth ...

Annual growth rates (%)	2000-13
Agricultural value added	+5.1
Cereal yield growth	+2.1
Cereal area expansion	+1.8

Source: World Development Indicators

… scope for further gains.



Need to capture market opportunities

Food demand ~60% higher by 2030, more than any other region.

Change in food demand in SSA by 2030	%
Cereals, food	56
Roots and tubers	47
Sugar and sugar crops (raw sugar eq.)	62
Pulses, dry	60
Vegetable oils, oilseeds & products (oil eq.)	64
Meat (carcass weight)	63
Milk and dairy, excl. butter (fresh milk eq.)	50
Other foods (kcal)	48
Total foods (kcal)	55

Opportunities to expand agribusiness job growth across value chains as food demand increases.

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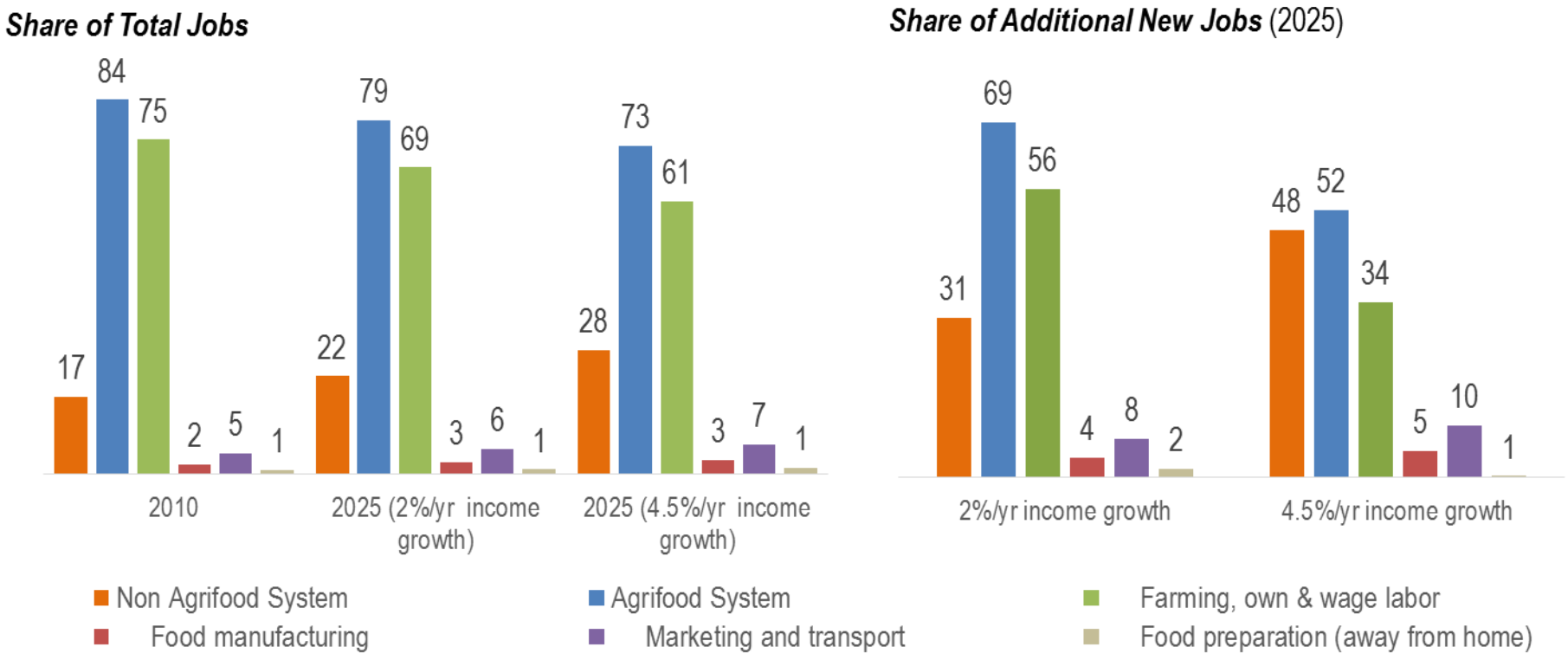
EMPLOYMENT: SPOTLIGHT ON AFRICA

The **agrifood system*** will continue to provide most jobs in Africa, and may account for **most job growth in Africa** over the next decade, even though its overall share of employment may decline.

** The agrifood system is the entire set of actors and activities in producing, packaging, and distributing agricultural products to consumers (farming, own & wage labor; food manufacturing; marketing; transport; and food preparation (away from home))*



Result for 6 African Countries (Ethiopia, Uganda, Tanzania, Mozambique, Malawi, Zambia)

Source: Tschirley et al (2015). Africa's Unfolding Diet Transformation: Implications for Agrifood System Employment. Journal of Agribusiness in Developing and Emerging Economies, 5(1).
Baseline derived from LSMS surveys

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CHALLENGE 1: SCALE SMALLHOLDER SUCCESS, NEW MODELS FOR LARGER FARMS

Scale smallholder success

- Countries with **significant cereal yield growth & significant poverty reduction** through smallholder production e.g.

Countries [time period based on poverty survey years, over about 10 yr period]	**Cereal yield annual growth (%)**	**% change in poverty headcount rate (%)**
Rwanda [2000-2010]	+7.2	-21
Ethiopia [1999-2010]	+4.9	-33

- Has not happened everywhere. E.g. Zambia & Malawi had annual cereal yield growth of 5.9% & 8.5% from early 2000s, but more limited poverty reduction. Lesson learning.

New models for larger farms

- Significant **interest from private investors.**
  - 31 agribusiness investment funds with target capitalization ranging from $8m to $2.7bn have sights on Africa.
- ~200 million hectares of **uncultivated land potentially available.**
- **Need to ensure inflow of private capital delivers growth and poverty reduction.**
- **Land governance assessment launched** in 8 countries (working with Africa Center of Excellence on Land Governance).
- Operationalizing the **Principles for Responsible Investment**
- Need **new models**, some being tested, to link in smallholders (e.g. Ghana).

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CHALLENGE 2: SUSTAINABILITY

Climate change

Significant negative impacts for Sub-Saharan Africa

- +1.5°C warming by 2030 could lead to about 40% of current maize area no longer suitable for current cultivars.
- 15-20% **crop yield decline** for warming above 2°C.
- Arid and semi arid areas to spread.
- 25-90% increase in **undernourishment** rate for 1.2-1.9°C warming.

Source: Turn Down the Heat

Natural resource use

Increasing pressures on land and water use

- **Land degradation** is increasing
  - Biophysical (soil properties, topography, vegetation)
  - Human induced (little replacement of soil nutrients, production on marginal lands).
- Water stress currently relatively low in aggregate, but increasing in some basins.

Disease risk

Vigilance on pest and diseases

- **Avian influenza** – not gone.
- **Wheat rust** spread across Africa (susceptible varieties still in use).
- Periodic **desert locust** outbreaks in West Africa (Mali, Niger).
- **Climate change** impact on distribution and virulence of crop pests and diseases.

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CHALLENGE 3: ENSURING FOOD SECURITY AND IMPROVED NUTRITION

- Lagging global target of halving undernourishment by 2015 (currently 23% down from 33% in 1990-92).
- Lessons to learn from countries that have halved undernourishment (16 countries in SSA).
- Need to accelerate progress with **more targeted approach** where undernourishment rates are above or similar to poverty rates.

	Countries	Children under 5 moderately or severely underweight (%)	Population undernourished (%)	Population below $1.25 per day (%)
Under-nutrition & undernourishment < poverty rates	e.g. Togo [2011]	16.5	18.9	52.5
Under-nutrition & undernourishment ≈ poverty rates	e.g. Ethiopia [2011]	29.2	36.0	36.8

Source: UN MDG database, POVCAL using data from the year of the latest poverty survey in the POVCAL database

Global focus on agriculture

POVERTY

FOOD DEMAND

ENABLING ENVIRONMENT FOR BUSINESS IN AGRICULTURE

Quality of regulations

Strength of institutions

Efficient administrative procedures

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World Bank Group Doing Business report

Enabling the Business of Agriculture has been inspired by the WBG *Doing Business* report, which has a recognized track record in measuring laws and regulations in 189 economies and leveraging reforms.

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Enabling the Business of Agriculture:

A tool to inform policymaking and trigger reforms based on cross-country benchmarking

Identify legal barriers for the business of agriculture

Quantify transaction costs of dealing with government regulations for 40 countries around the world

For more information see http://eba.worldbank.org

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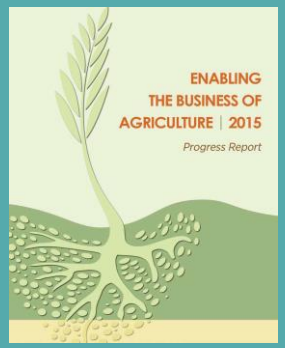
EBA timeline

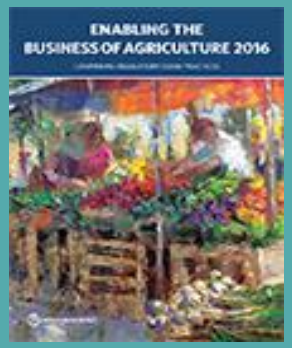
2012
EBA Kick - off

2013-14
Pilot data collection in 10 countries

2014-15
Data collection in 40 countries

2016
Data collection in 62 countries





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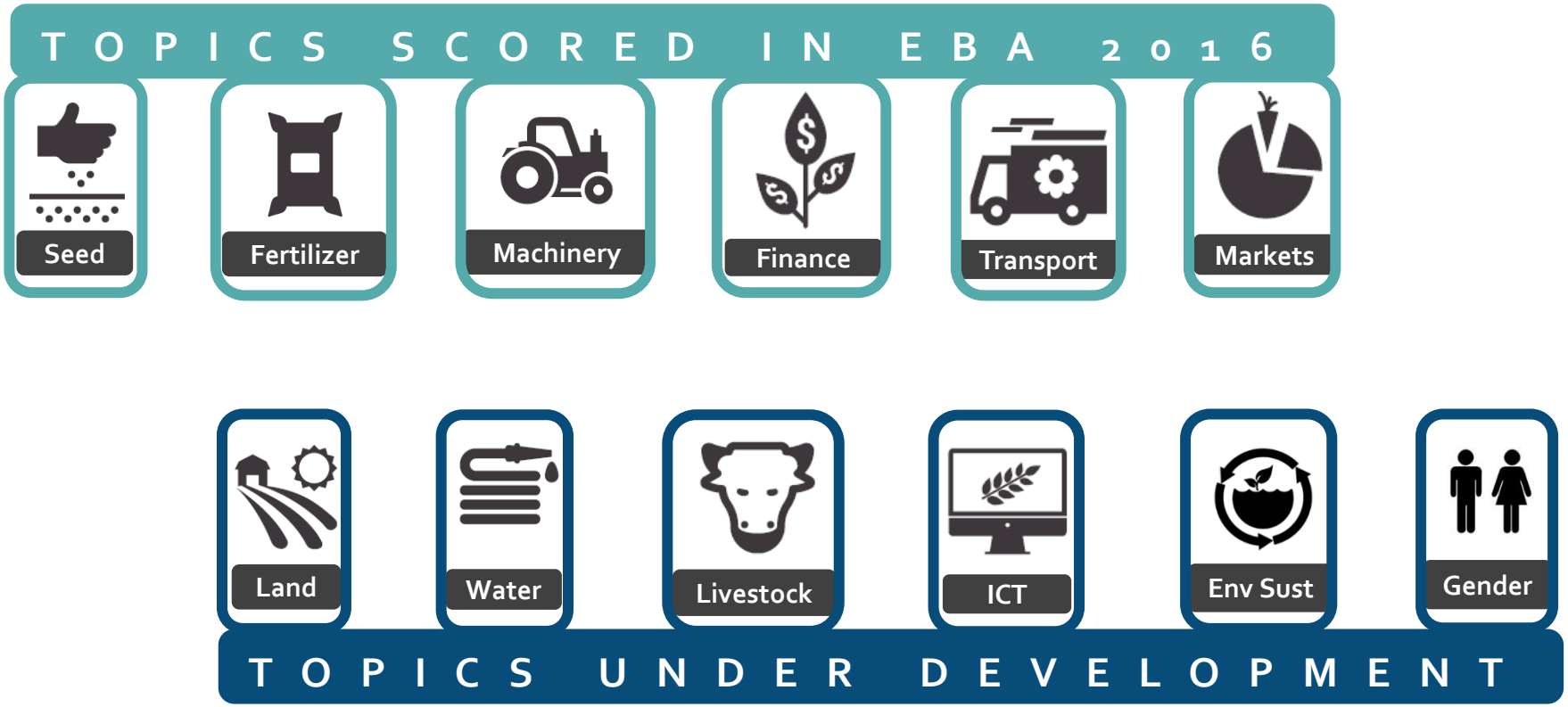
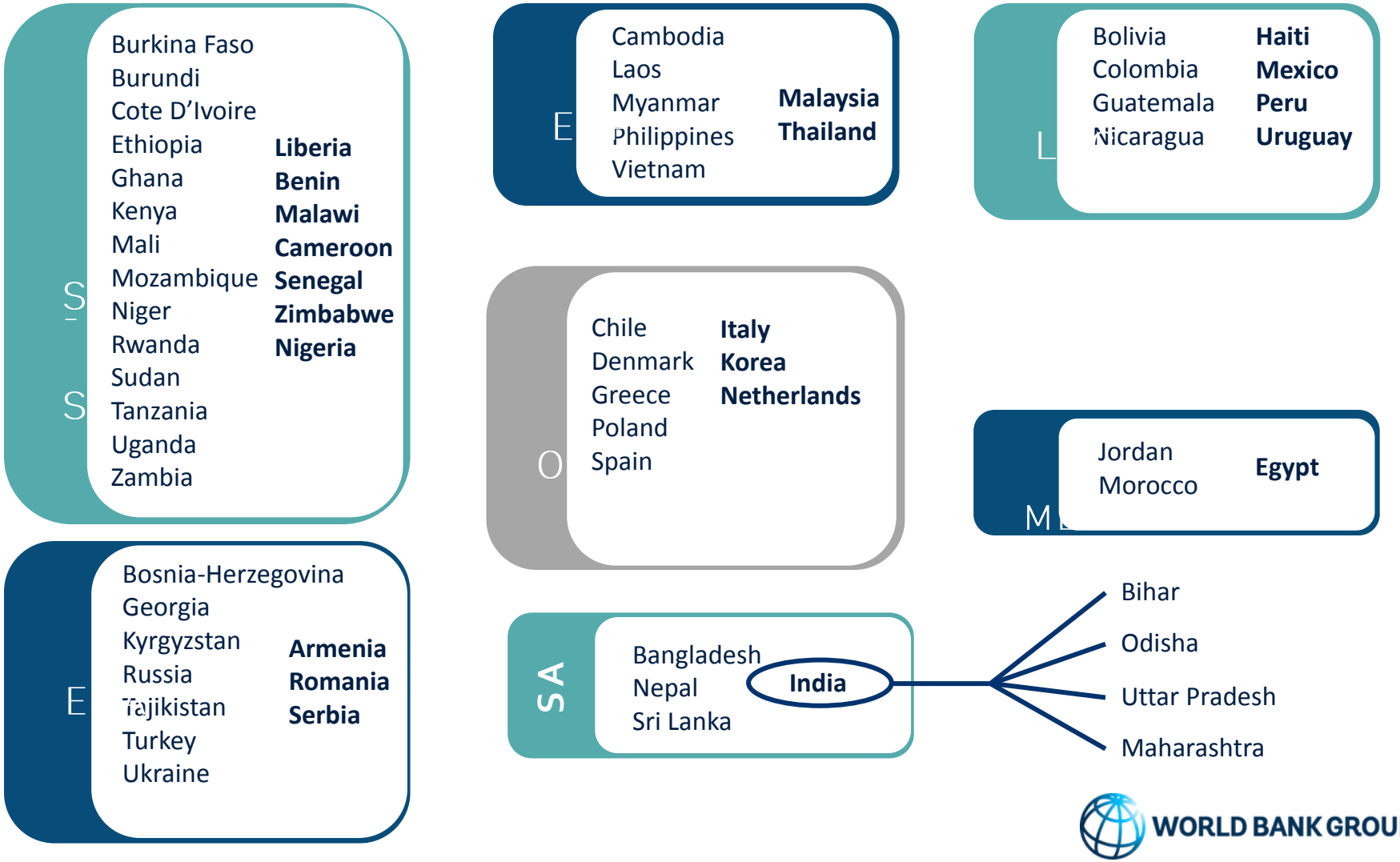
EBA thematic coverage



EBA benchmarks **markets**
associated to activities along the **agribusiness value chain**

EBA 2016 geographical coverage



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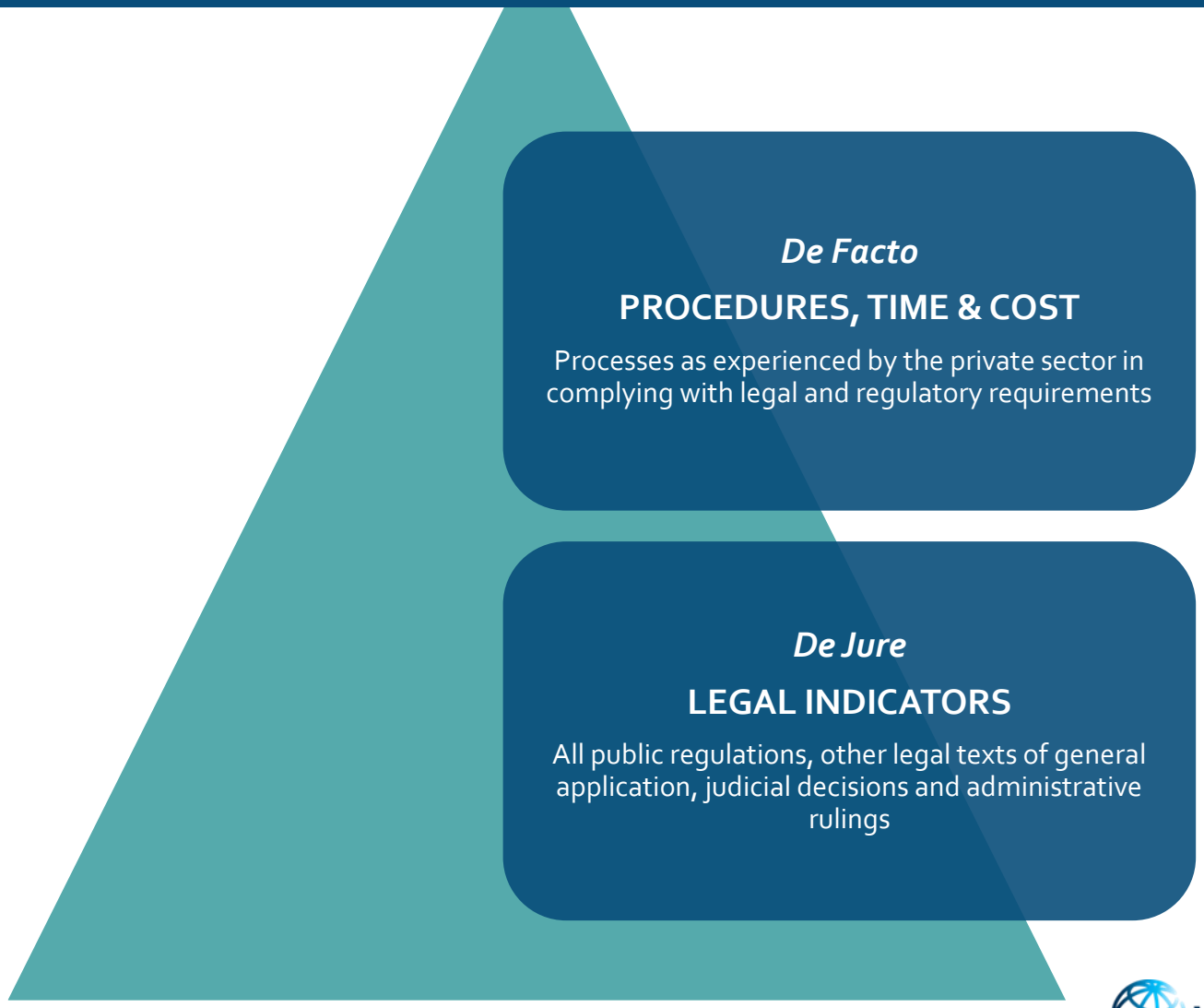
EBA 2016 indicators



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The agribusiness value chain is benchmarked in 3 different dimensions

Operations
(e.g. seed and fertilizer registration)

Quality control
(e.g. tractor safety and standards)

Trade
(e.g. cross-border transportation)

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EBA 2016 report

Indicator Data - Enabling t...

eba.worldbank.org/data/exploretopics/fertilizer

TOPICS

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Enabling the Business of Agriculture

EBA Home

Data by Country

Data by Indicator

Methodology

Reports

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USA
E-mail

Fertilizer

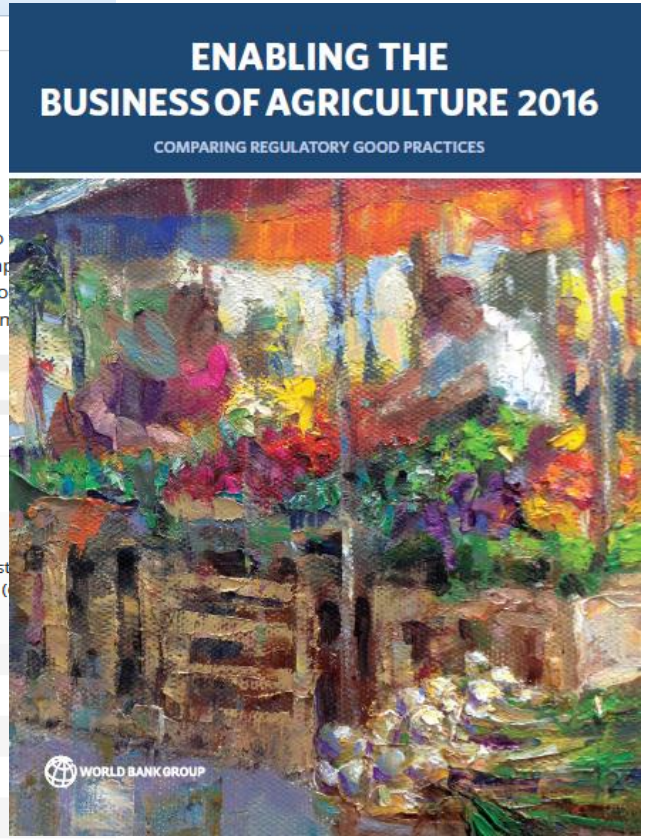
The *Enabling the Business of Agriculture* fertilizer indicators measure laws and regulations related to registration, import, and quality control of fertilizer products. They address factors important to comp importing and selling fertilizer products, farmers using quality fertilizer products to increase their pro governments pursuing regulations that ensure the quality of products and effectiveness of fertilizer r

Search records

Showing 1 to 40 of 40 results

Show entries 40

Economy	Topic Score	Fertilizer registration (0–100)	Number of procedures to register a new fertilizer	Time to regist new fertilizer (
Denmark	82.2	80	2	31
Ethiopia	34.4	20	N/A	N/A
Georgia	68.9	90	5	765
			4	255
			7	211
			2	105
Jordan	67.8	70	3	36
Kenya	50.0	0	N/A	N/A
Kyrgyz Republic	63.9	75	5	730
Lao PDR	60.6	45	4	No data



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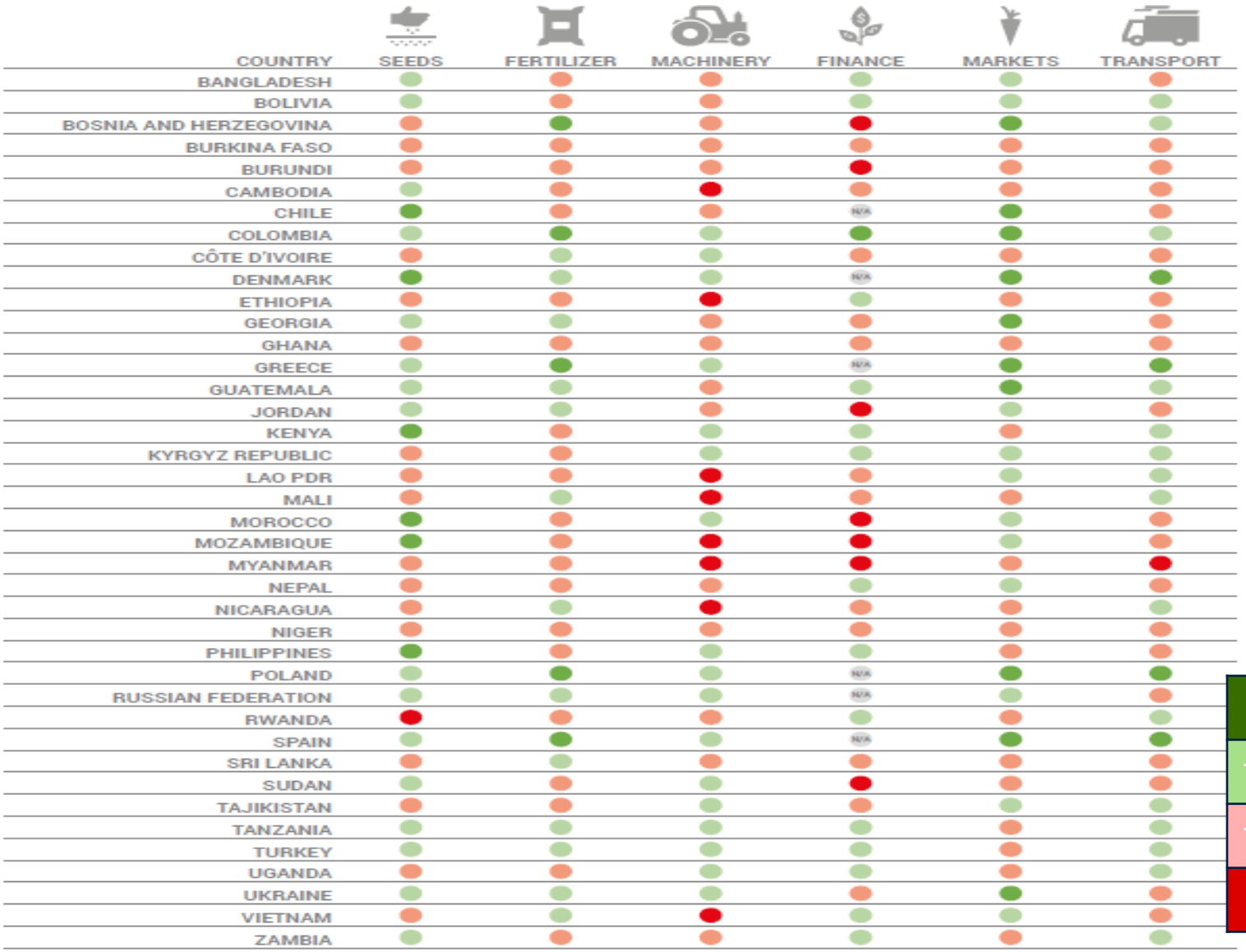
OVERVIEW OF RESULTS



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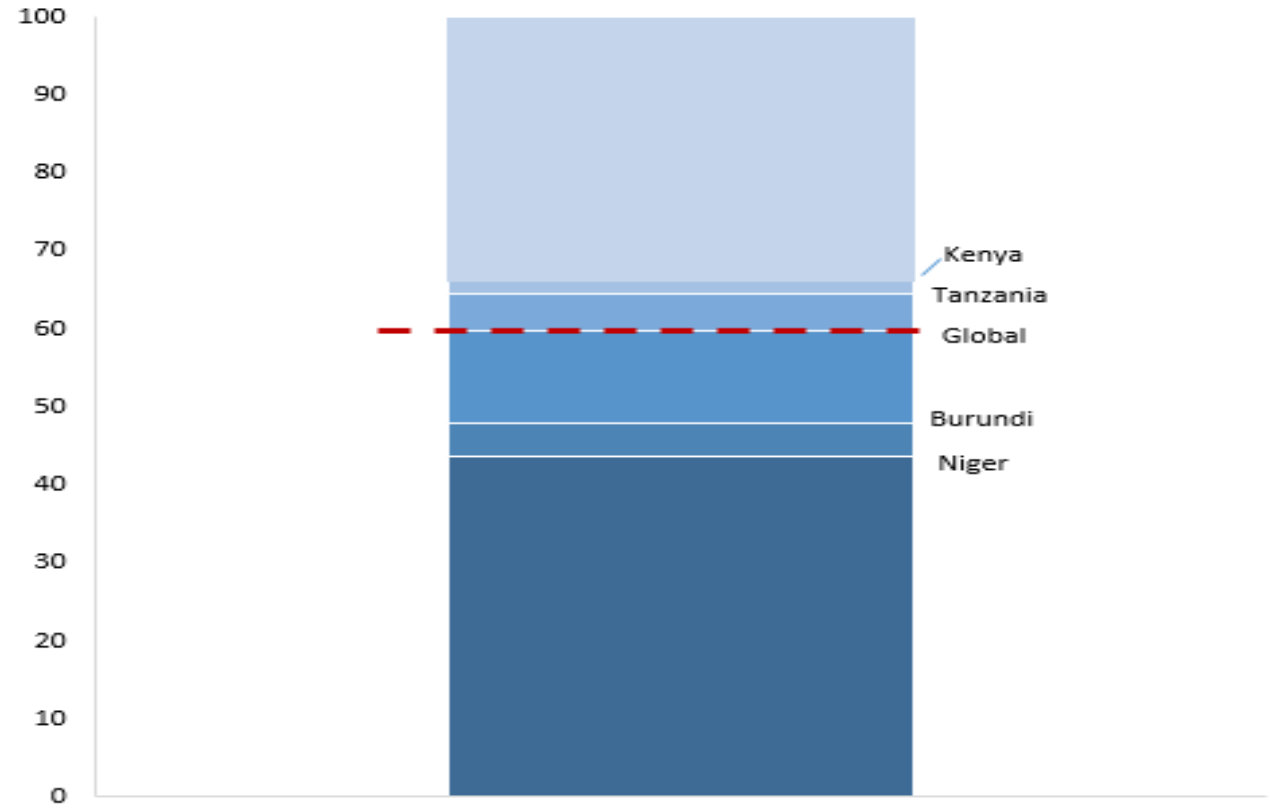
REGIONAL DIFFERENCES

Average score of EBA topics (0-100)



The score averages the scores of Fertilizer, Sees, Mechanization, Finance, Markets and Transport.

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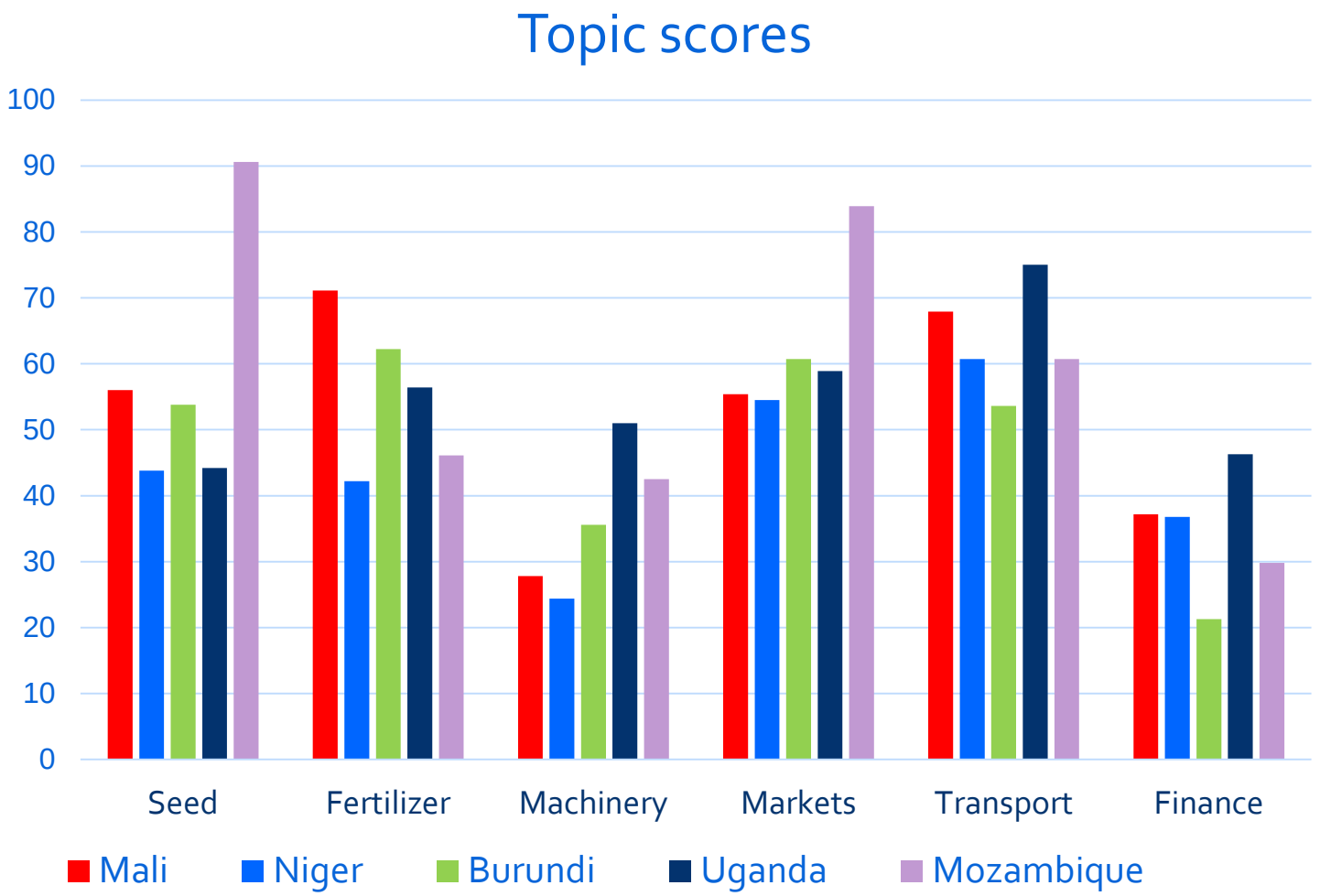
COUNTRY BENCHMARKING



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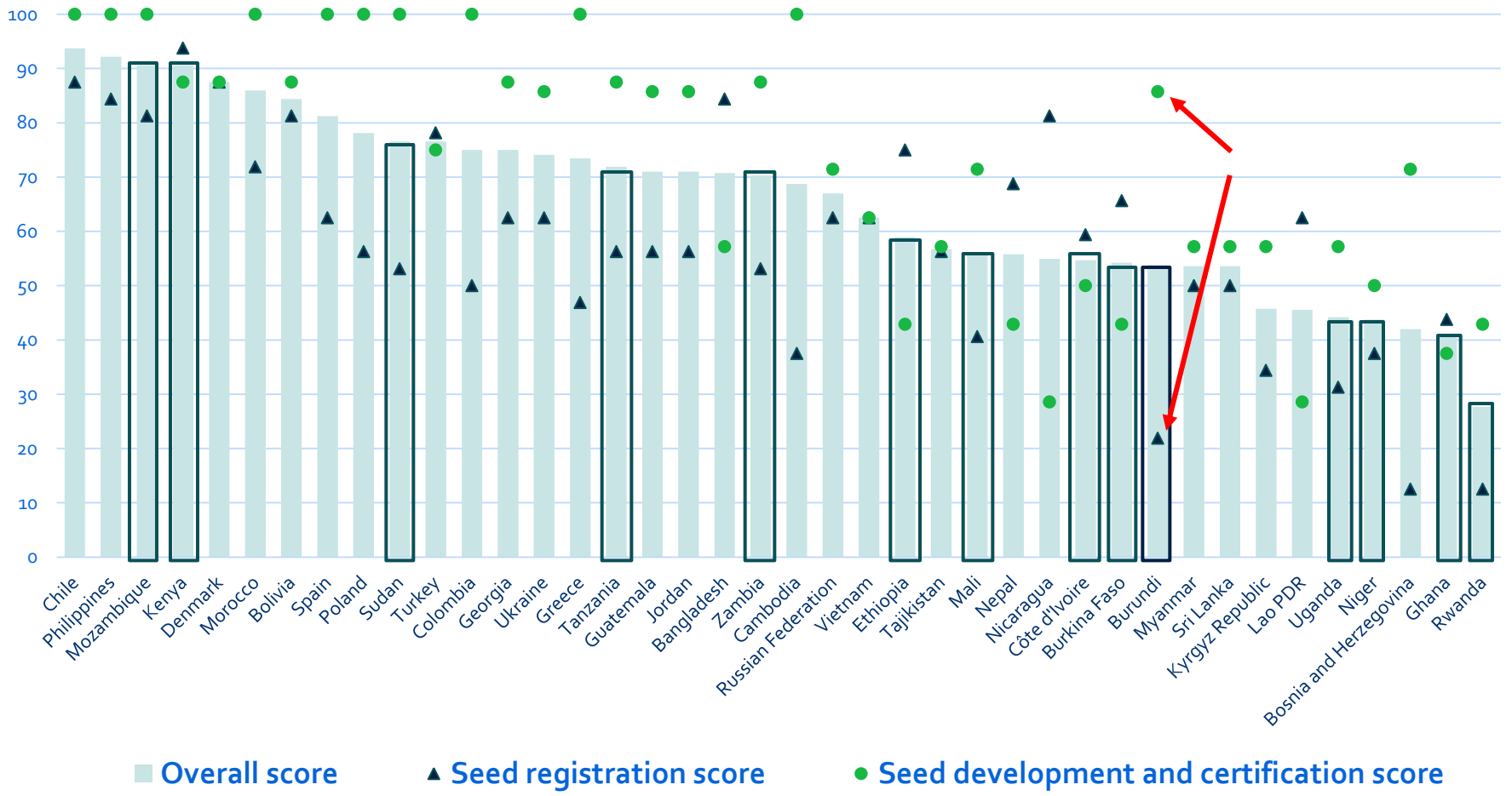
SEED OVERVIEW



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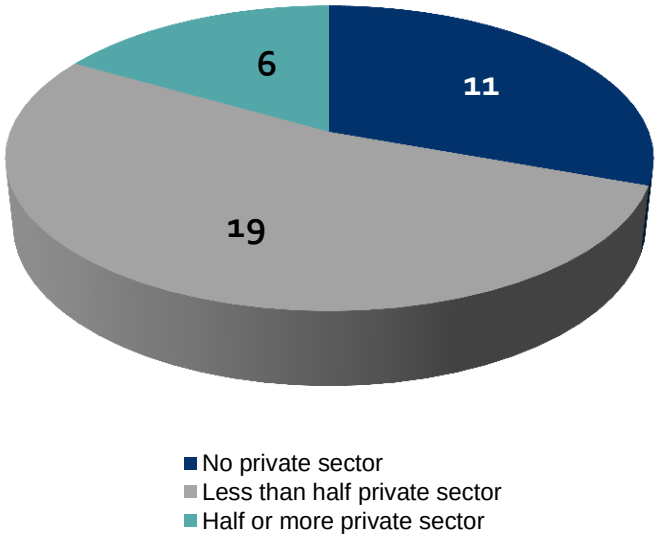
SEED OVERVIEW

Variety release process



VRCommittee		Countries
Meets on demand	7	Bangladesh, Bolivia, Colombia, Côte d'Ivoire, Kenya, Lao PDR, Nepal
Meets after each cropping season	22	Chile, Denmark, Ethiopia, Greece, Jordan, Kyrgyz Republic, Mozambique, Myanmar, Nicaragua, Philippines, Poland, the Russian Federation, Spain, Sri Lanka, Sudan, Tajikistan, Tanzania, Turkey, Uganda, Ukraine, Vietnam, Zambia
Doesn't meet after each crop season	1	Morocco
Established but does not meet	6	Burkina Faso, Burundi, Georgia, Ghana, Mali, Rwanda
Not established	4	Bosnia and Herzegovina, Cambodia, Guatemala, Niger

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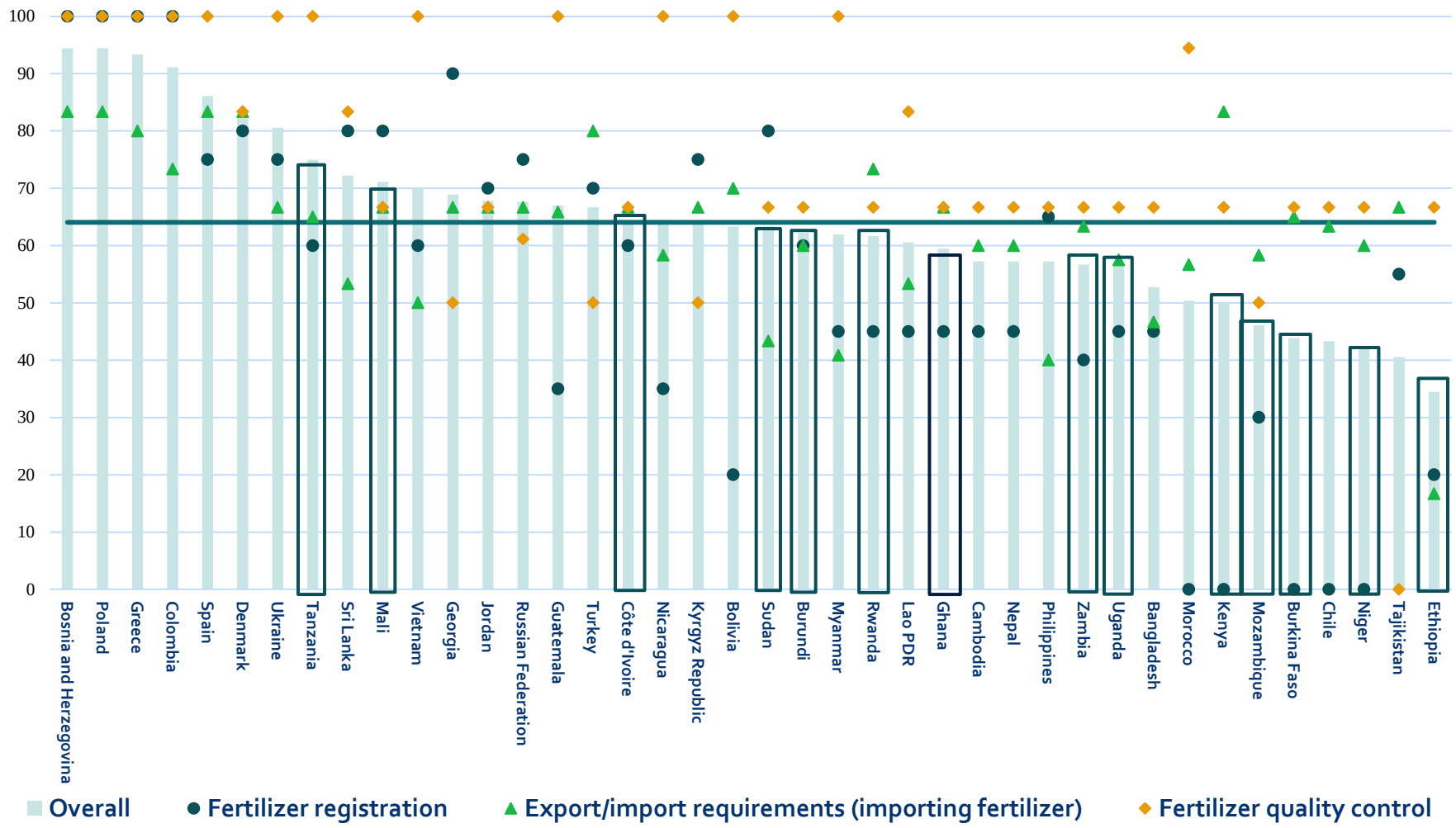
FERTILIZER OVERVIEW



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MOZAMBIQUE/FERT REG

Question	Answer	Score
Is the private sector required to register fertilizer products?	No	1
Once registered, is registration time specific? If so, for how many years?	Yes (5 years)	0.5
Is renewal automatic?	No	0
Is there an official catalogue listing all registered fertilizer products?	No	0
Is the catalogue accessible online?	No	0

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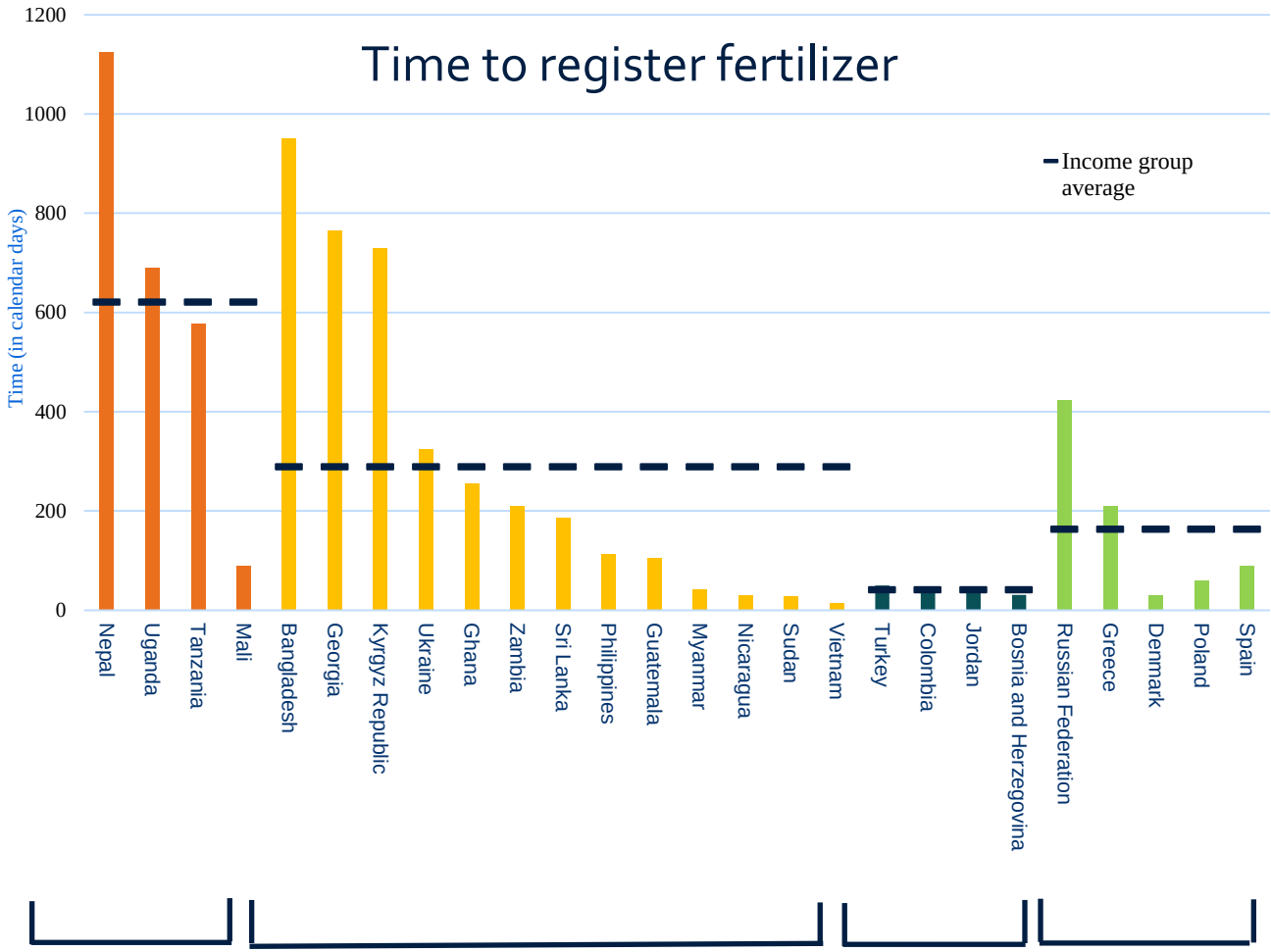
TANZANIA/FERT REG

COST TO REGISTER A NEW FERTILIZER (% OF GNI PER CAPITA)			
The cheapest...		... and the most expensive	
Spain	0.0%	Tanzania	1064.5%
Jordan	0.3%	Ukraine	717.3%
Guatemala	0.4%	Uganda	258.9%
Denmark	0.4%	Zambia	241.5%
Bosnia and Herzegovina	0.5%	Ghana	89.2%



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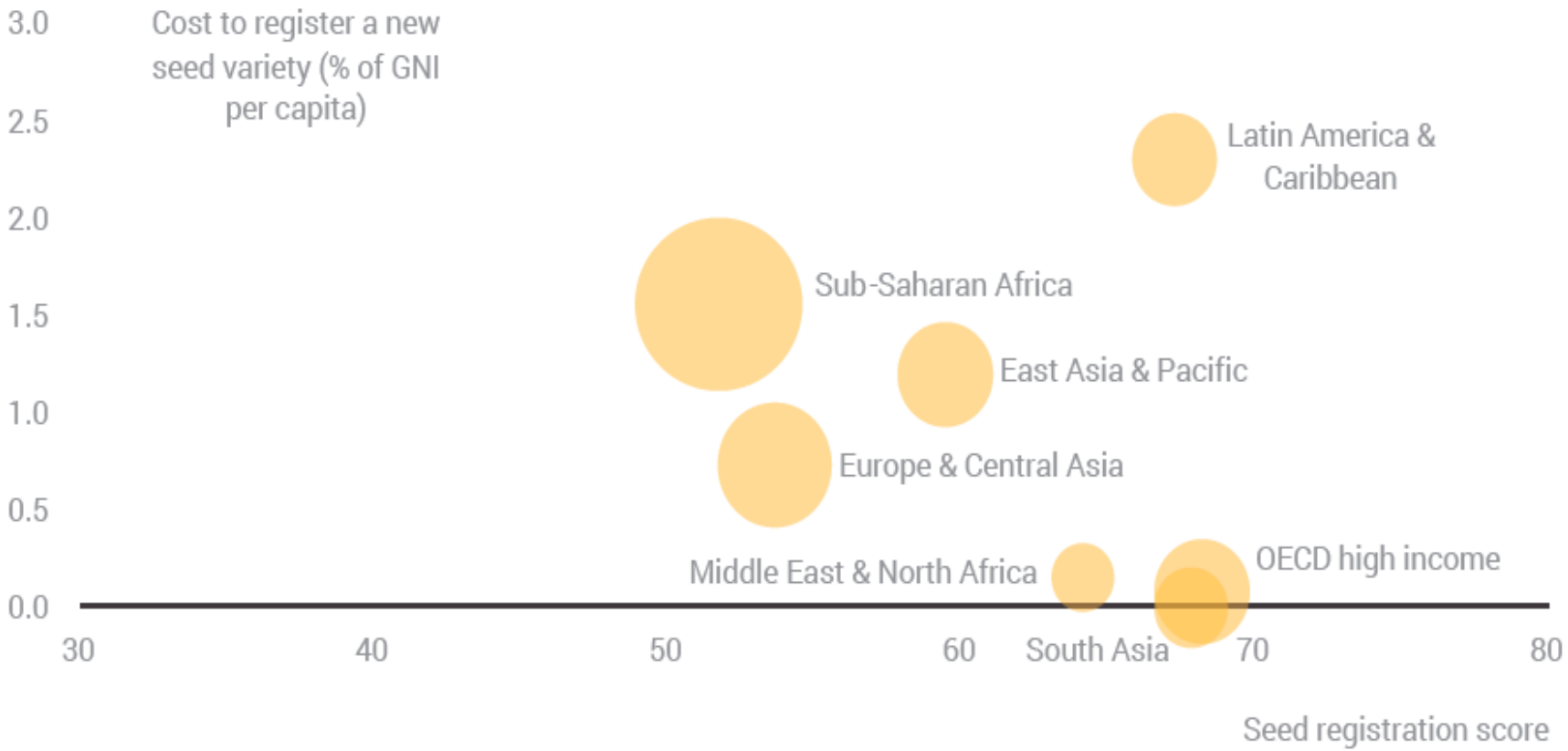

Regions with similar rules show different costs for registering a new seed variety

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EBA 2016 report COST OF VARIETY REGISTRATION

LOWER COST

Russia

(free - *up to 5 registration a year*)

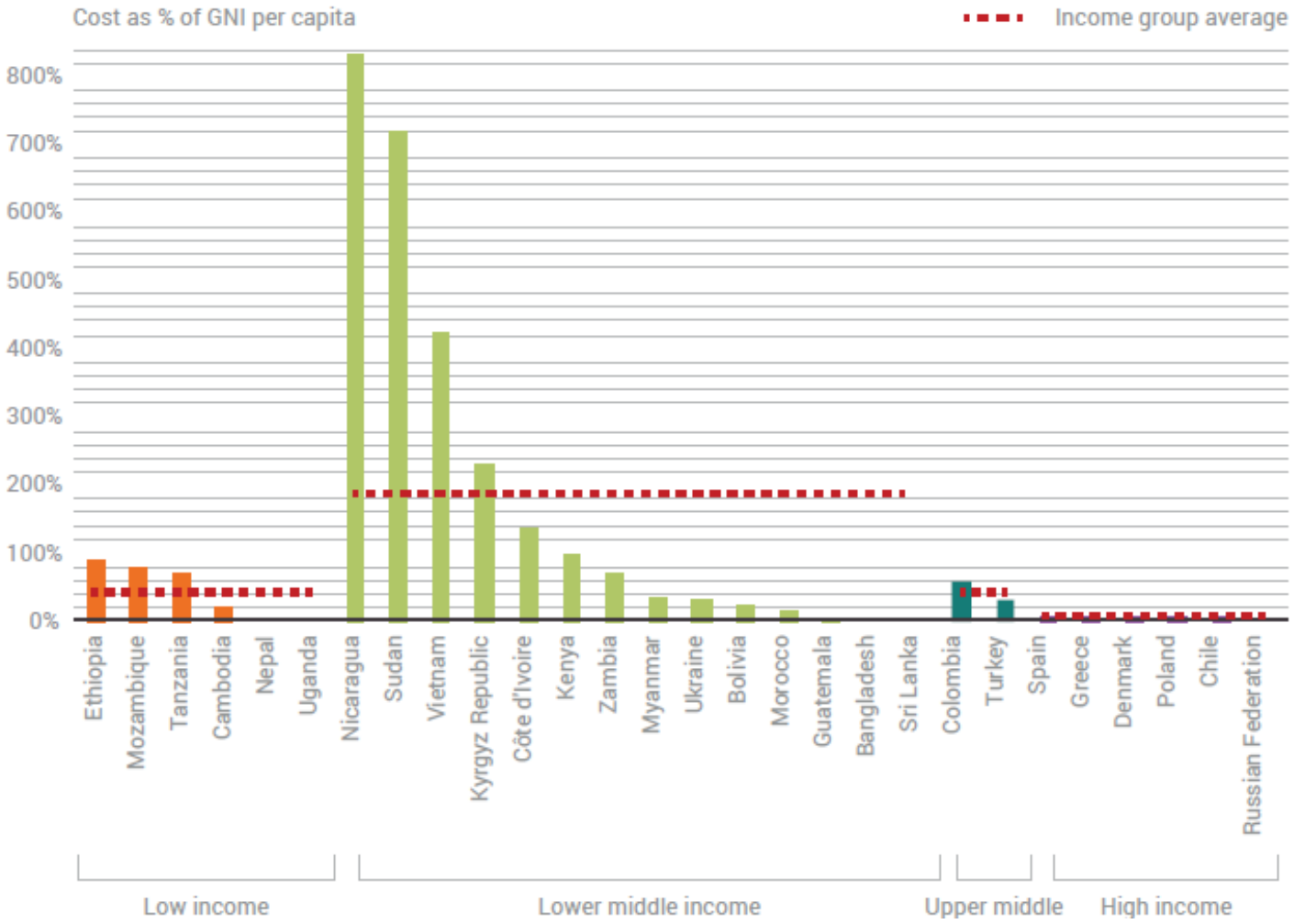
Chile (6%)
Poland (7%)
Denmark (8%)
Greece (9%)
Spain (10%)

HIGHER COST

Nicaragua (834%)

Sudan (722%)

Vietnam (426%)



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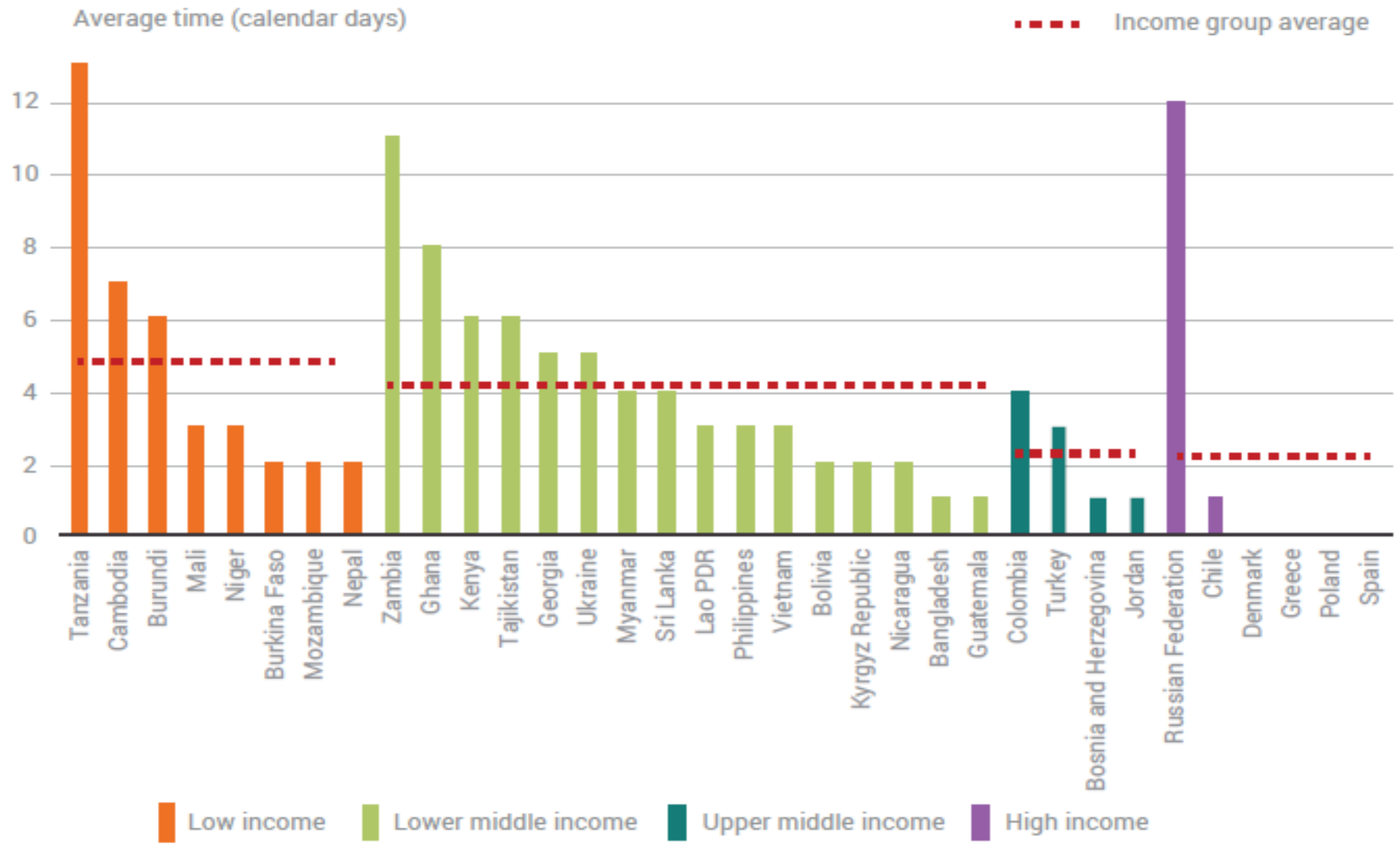
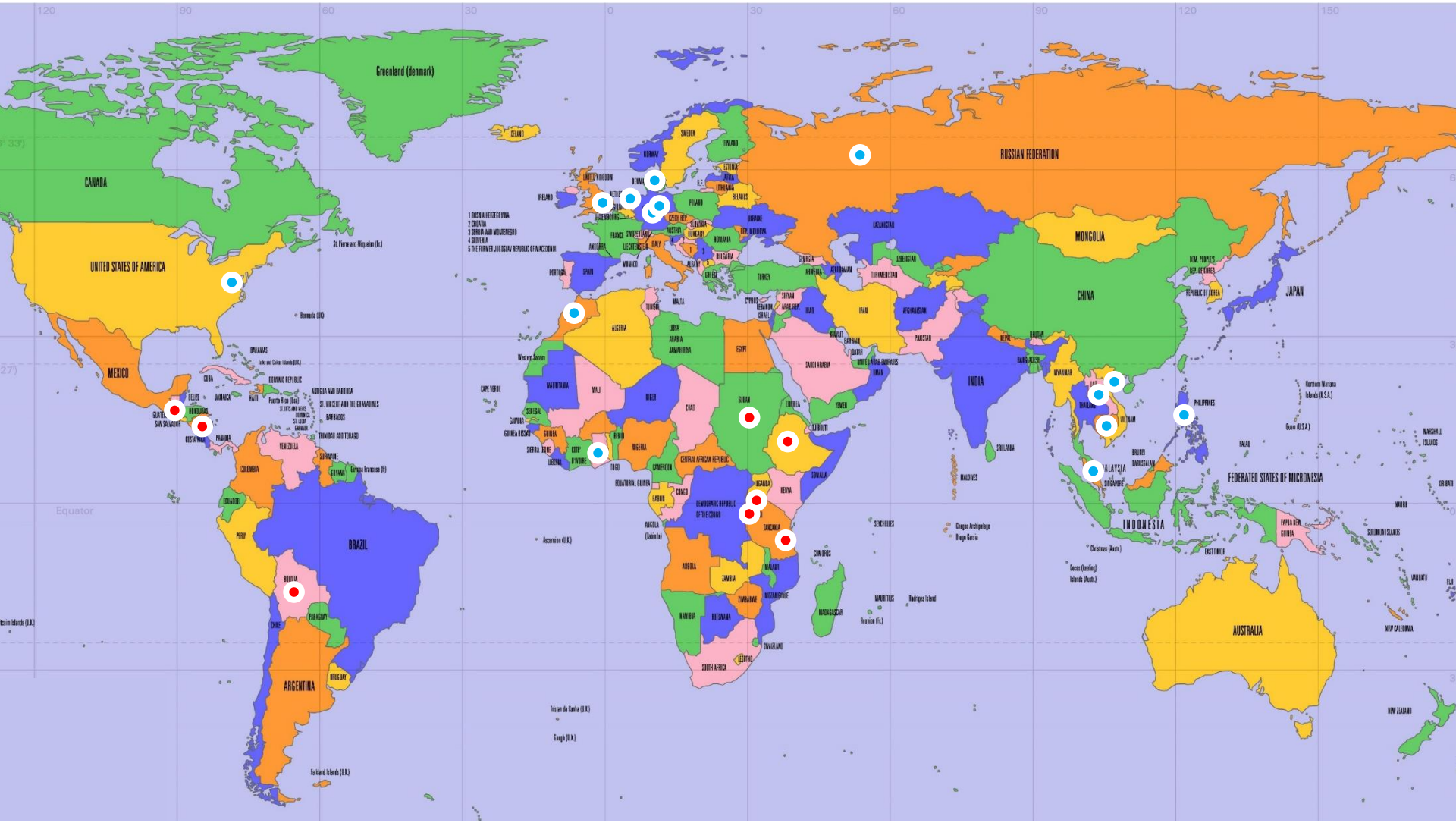
EXPORT DOCUMENTS




Greenland (denmark)
CANADA
UNITED STATES OF AMERICA
MEXICO
BRAZIL
ARGENTINA
RUSSIAN FEDERATION
MONGOLIA
CHINA
JAPAN
INDIA
INDONESIA
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Equator

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Thank you