




Qatar: Mobilizing Investments in Agriculture - Partnering for Food Security

Responsible National Investments in Agriculture

Responsible International Investments in Agriculture

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Director of Programme
Qatar National Food Security Programme

36th CFS Roundtable Session, 13th October 2010, FAO, Rome
Round Table: Land Tenure and International Investment in Agriculture

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Qatar National Food Security Programme

National Investments in Agriculture: Technology for Dry Land Development
Global Dry Land Alliance – Partnering for Food Security

International Investments in Agriculture: Development Partnerships
Securing Host and Investor National Food Security

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DOMESTIC ISSUES

- Water:

- Aquifers are under threat of depletion: 220m/m3 p/a
- Our water reserves are only 2 days
- Total farms down 30% – mostly due to water issues

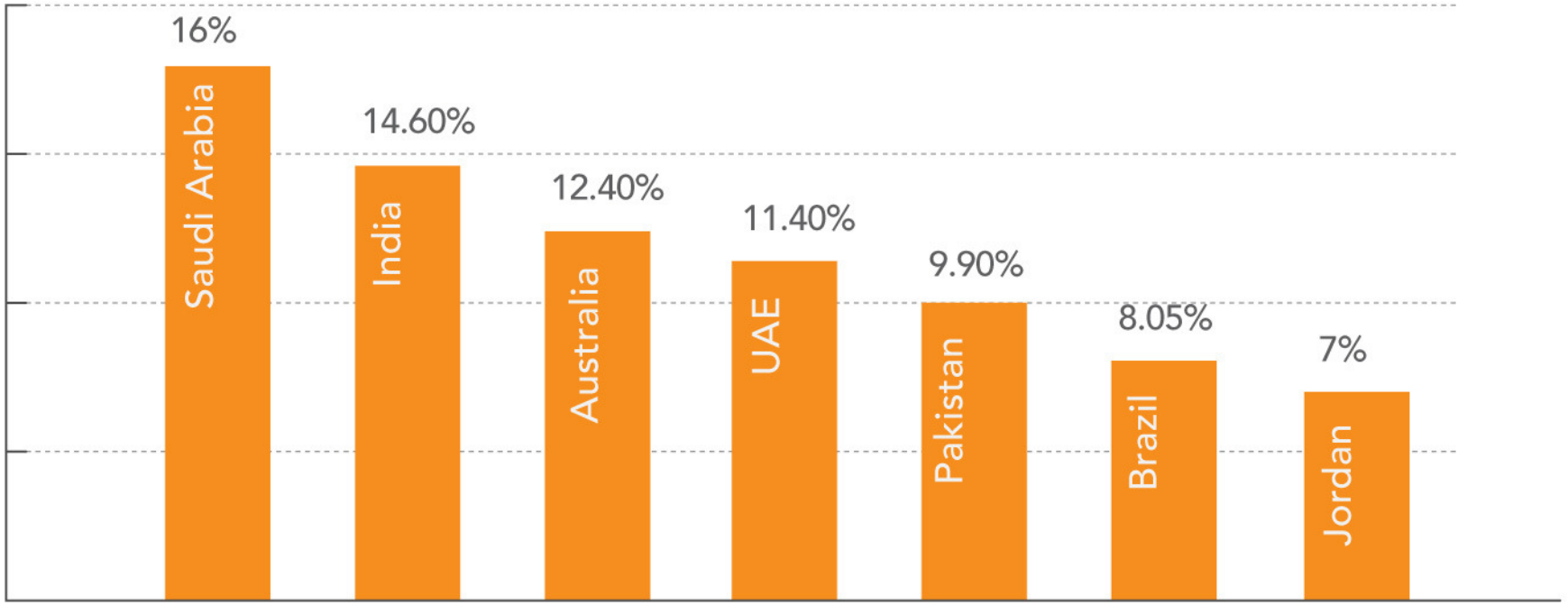
- Only one-tenth of the arable land in Qatar is cultivated

- 90% of our food is imported

DOMESTIC ISSUES

Risks: Non-secure imports

Over 75% of total imports are supplied by only seven countries.



Percentage of Total Food Imports by Country of Origin (2007)

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AGRICULTURE

National agricultural production

- Development of new farming technologies
- Capacity building in agricultural production and arid land methodologies e.g. Hydroponics, greenhouse farming ,etc...
- Cultivation and reclamation of arable lands to prevent land degradation and maximise yields
- Suitable practices encouraged, e.g. alternative fertilizers

Benefits:

- Diversification within agricultural sector → economic diversification
- Increased national production
- Begin to engage potential investors

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ENERGY

Solar Energy Application

- Industrial scale solar energy
- Capacity building in sustainable energy sources
- Investment in future energy and water production technologies

Benefits:

- Sustainable energy source
- Commitment to reduce our Carbon foot print
- Economic diversification

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WATER

Desalination and improved water management

Requirements:

- Dedicated desalination plant
- Capacity building in sustainable water production
- National Integrated water management; agricultural; industrial; domestic; landscaping
- Investment in water production technologies
- Environmental impact management

Benefits:

- Excess desalinated water used to recharge groundwater aquifers
- Excess can be used to supplement domestic consumption in times of crisis
- Resource conservation

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IMPORTS

Secured Imports & Storage

- Diversify investments in overseas agriculture
- Reciprocal food security agreements with international gas and oil purchasers, leveraging hydrocarbon resources
- Improved long-term food storage facilities

Benefits:

- Secure produce which cannot be grown locally
- Having sufficient stock supplies to make up for any shortages and emergencies

Responsible International Agriculture Investments

Developed Countries; Emerging Countries; Developing Countries

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Qatar Dry Land Agricultural Development Investments

Innovation and Economic Diversification
Agriculture, Food, Water, Renewable Energy

Global Dry Land Challenges

>2 bill population and >70% in rural areas
<US $ 3000 per capita GNP per year
>60 per 1000 infant mortality rates

>40% of world land surface
<8% world renewable water resources
High reliance on rainfed crop agriculture, frequent drought
Pastoralism important culturally and economically
10 - 20% of Land area degraded; at high-risk of desertification

Emerging Impacts of Climate Change

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Qatar Special High Level Side Event
UNGA 24th September 2010
Global Dry Land Alliance: Partnering for Food Security

- Challenges of Food Security and Millennium Development Goals in World Dry lands
- Agro-ecological and Socio-economic Challenges of Food Security in the Arab World – Establishment of Regional Centres of Excellence
- Country-led Food Security Programmes – Science, Technology and Policy Actions
- Responsible International Agricultural Development and Investments Partnerships

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Responsible International Investment in Agriculture
Transparency and Accountability
Social, Environmental and Economic Sustainability

Information and Knowledge
The Foundation of Responsible Land Investments
Land Tenure Guidelines and Principles of RAI

Agro-ecological zones and National/International Economy
IIASA – FAO Methodology, Modeling, Policy Analysis

An Integrated Agro-ecological and Socio-economic Spatial Global Assessment
Agricultural Development and Food Security

Land Availability, Land Potential, Yield Gaps, Agricultural Infrastructure Investments
World Bank Report 2010: Rising Global Interest in Farmland -
(How) Can it Generate Sustainable and equitable Benfits?

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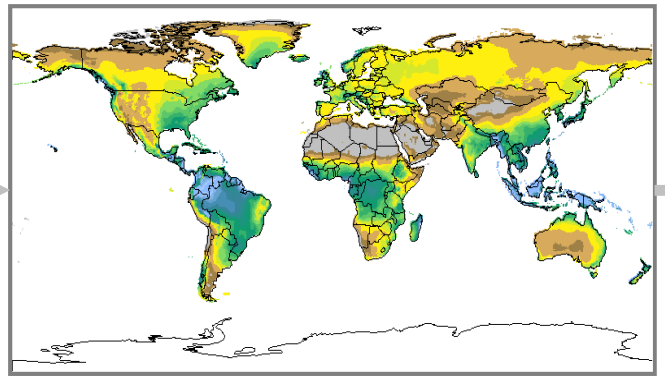
Agro-ecological suitability and land productivity



3

IIASA Modeling Framework

Climate impact response relations

4

2 Climate model

1 Development scenario

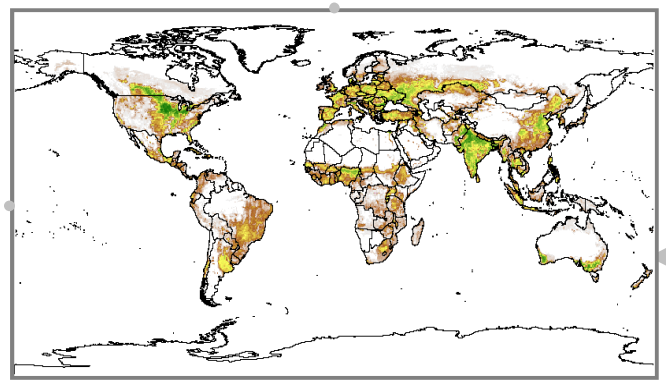
Production ↔ Demand

Trade

Global Food-Feed-Biofuel System

World Market

5



6

Spatial distribution of land use

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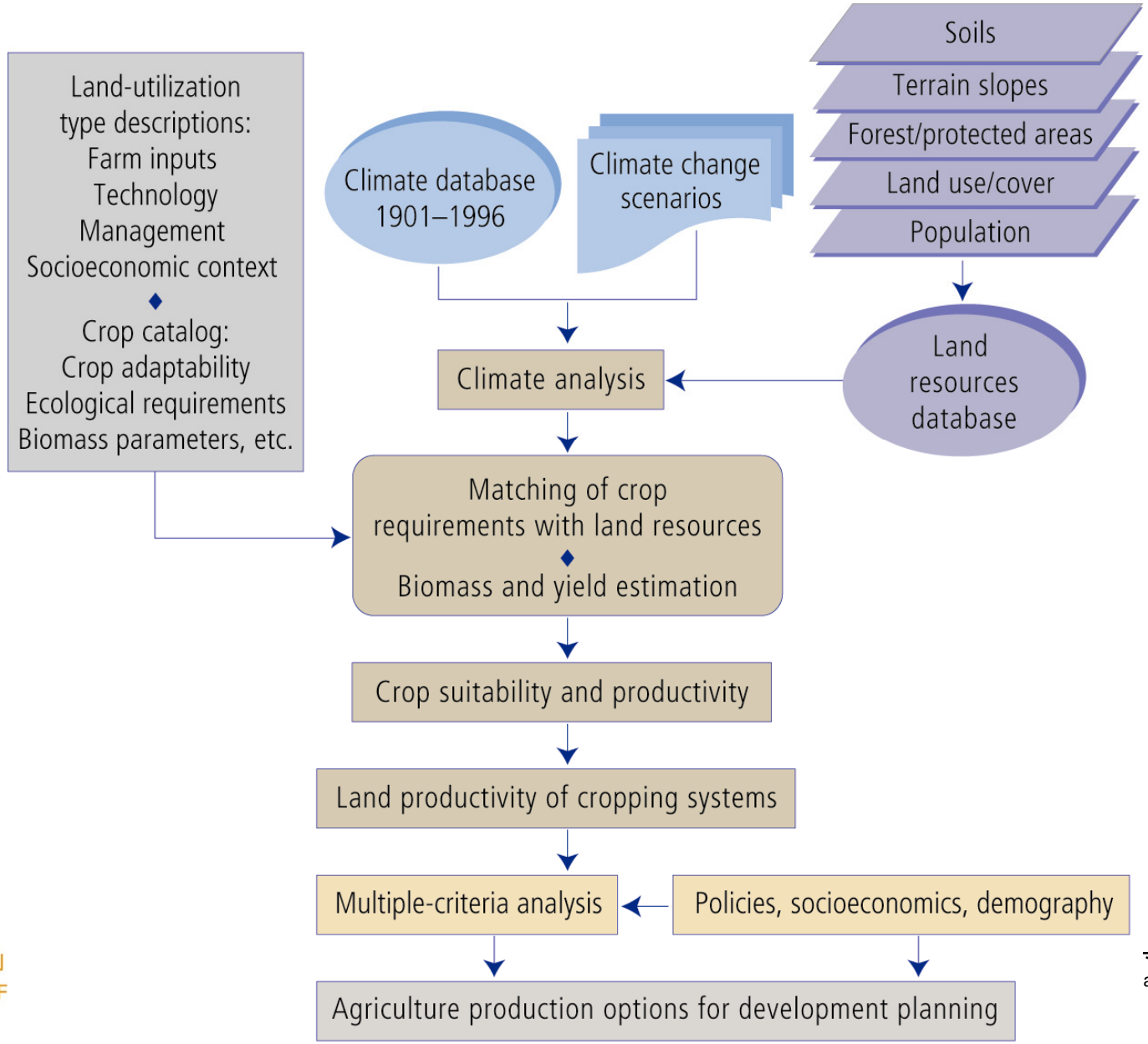
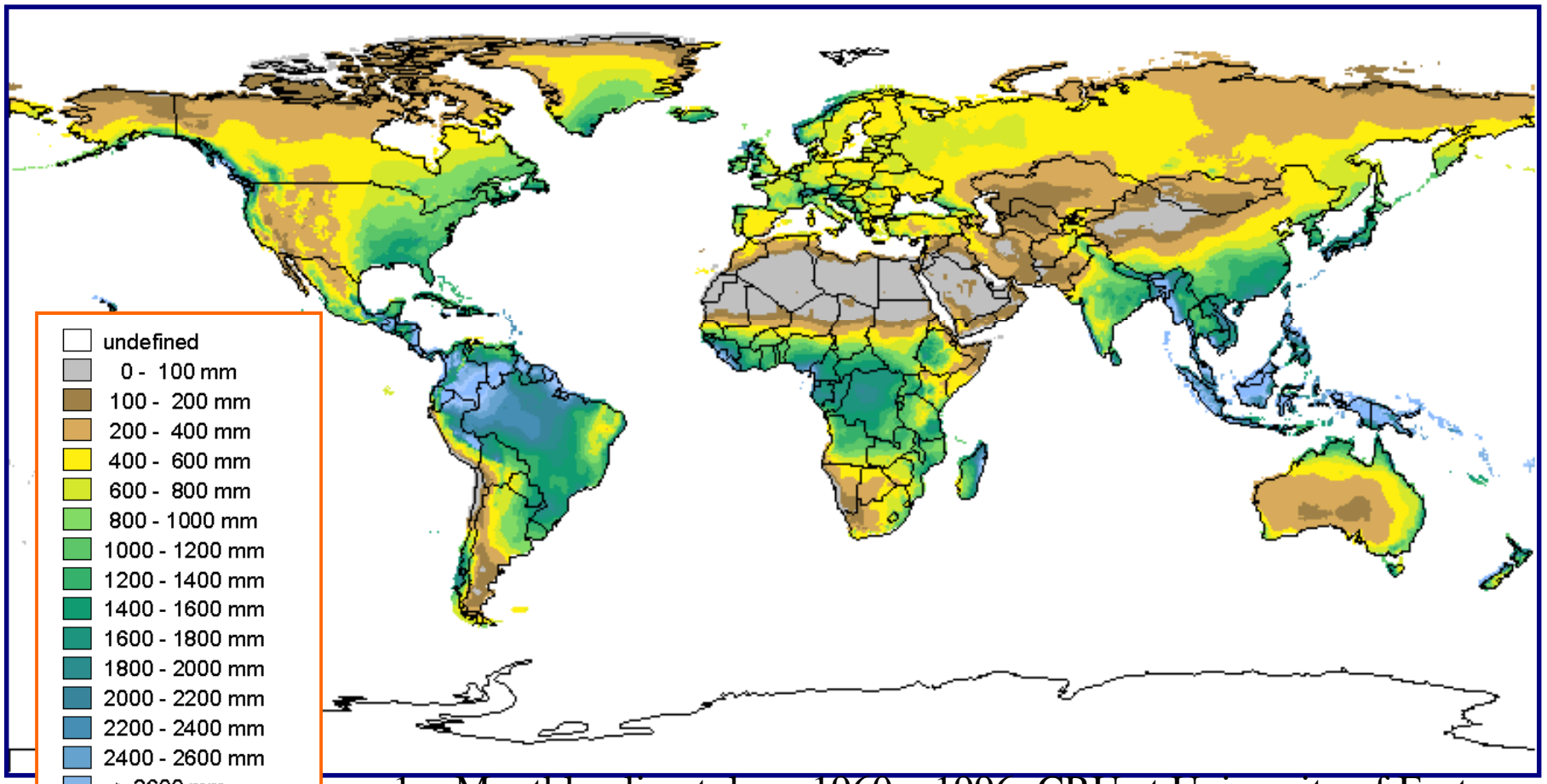
FAO-IIASA Agro-ecological Zones Methodology

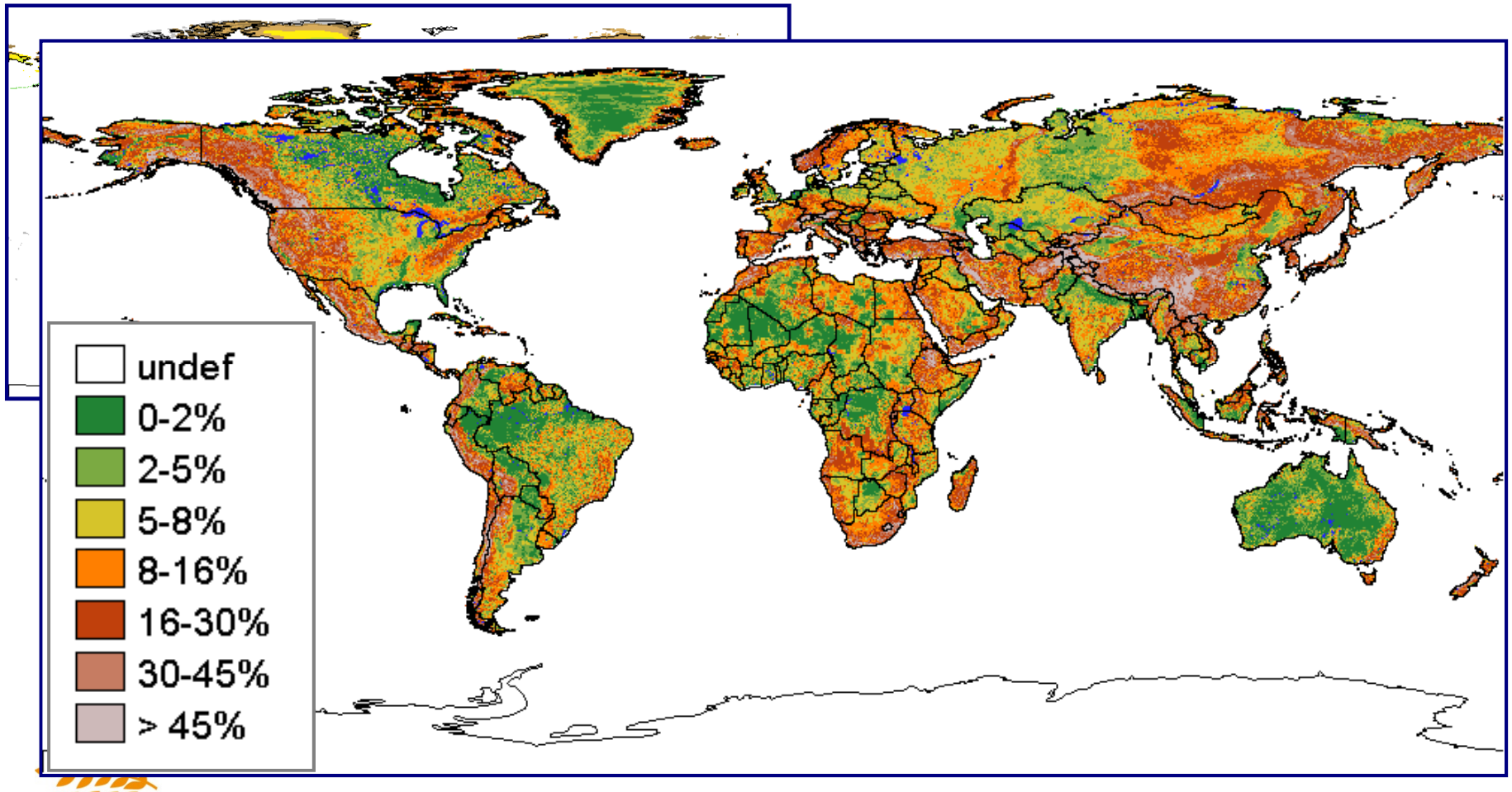


Agro-ecological Zones Methodology
Geographical Data Layers



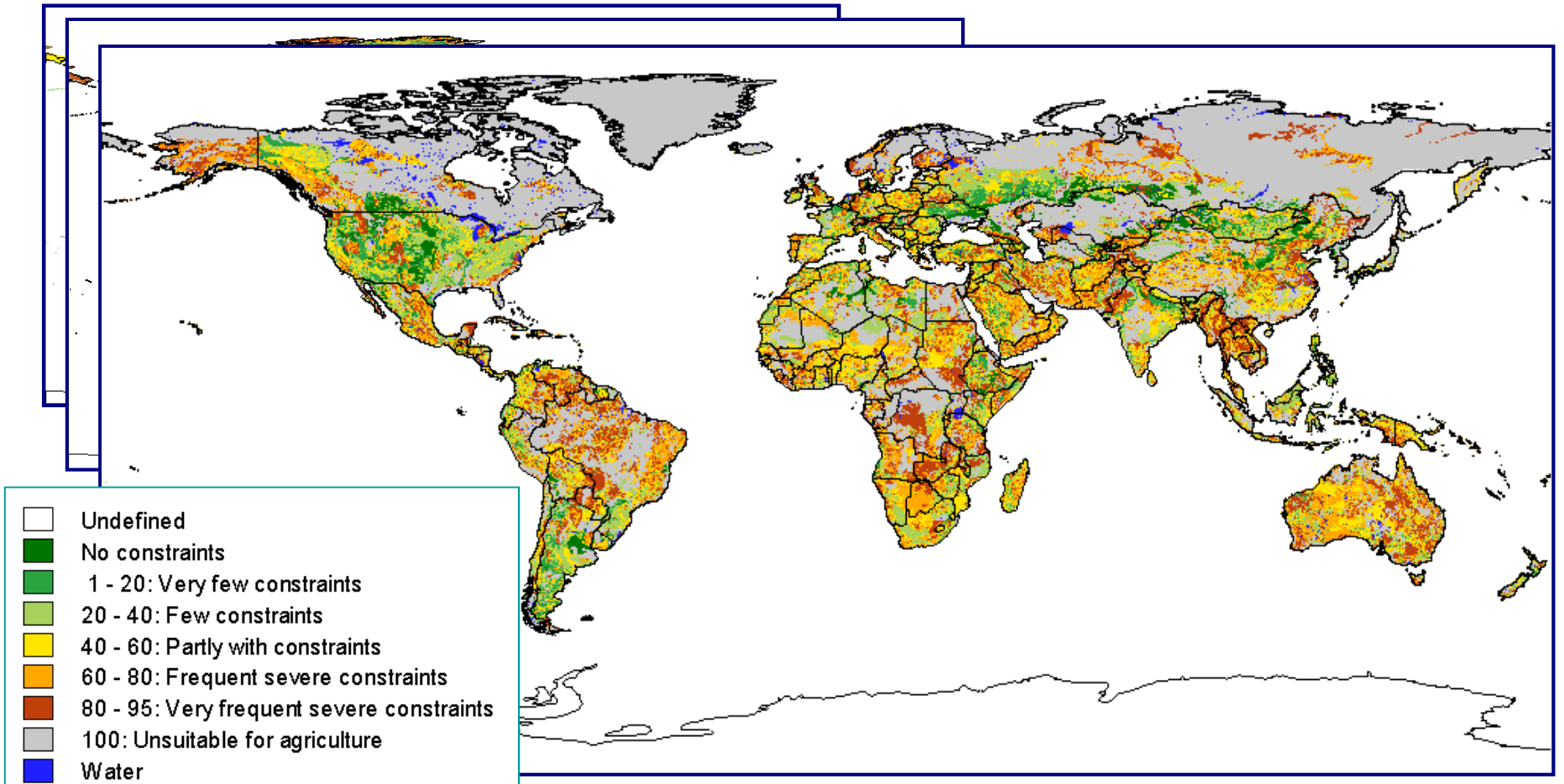
1. Monthly climatology 1960 – 1996; CRU at University of East Anglia; at 0.5 deg. latitude/longitude

Agro-ecological Zones Methodology
Geographical Data Layers



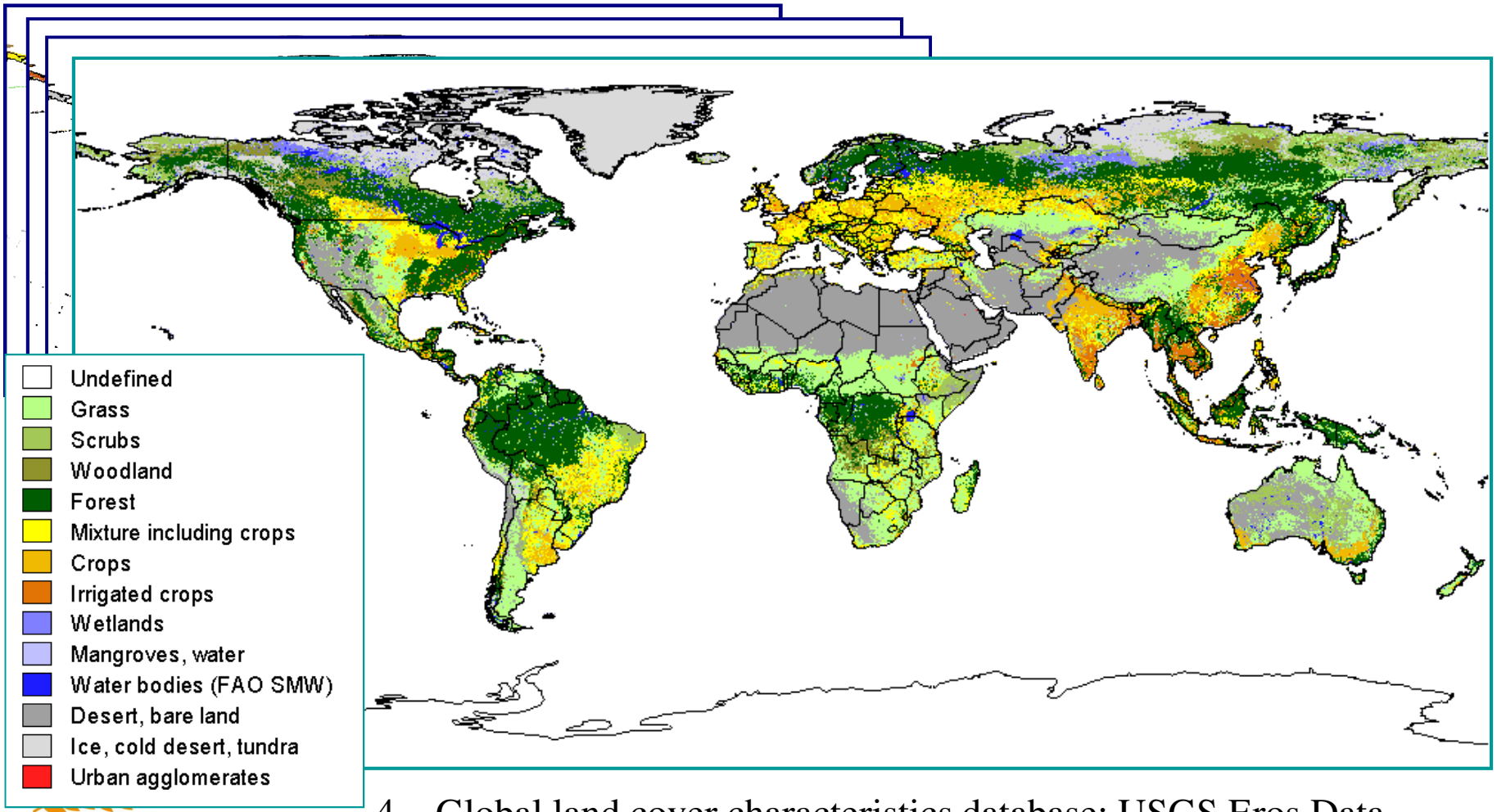
2. Terrain slope database; USGS Eros Data Center; digital elevation at 30 arc-seconds latitude/longitude

Agro-ecological Zones Methodology
Geographical Data Layers



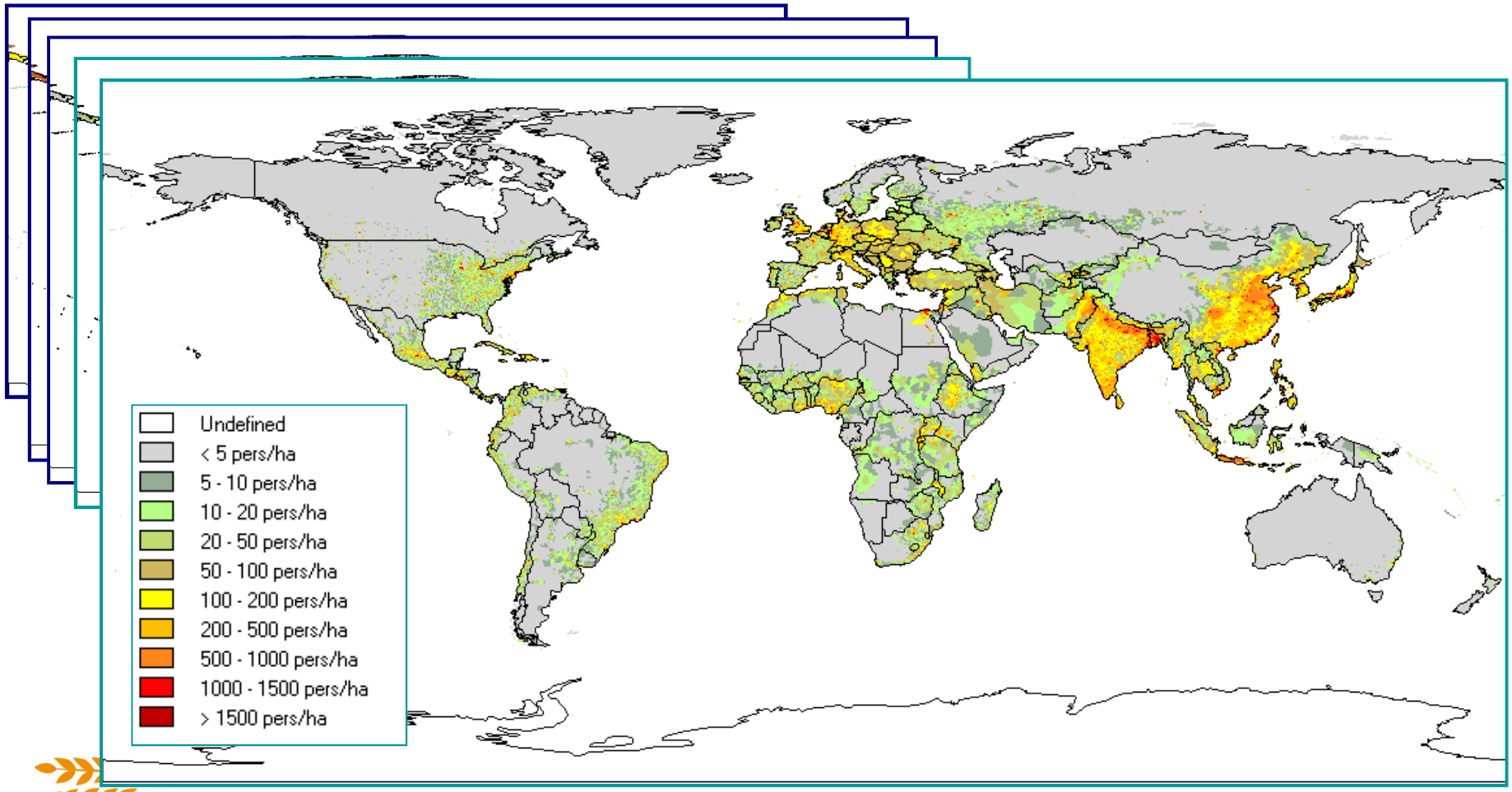
3. FAO/Unesco digital Soil Map of the World; UN Food and Agriculture Organization; at 5 arc-min. latitude/longitude

Agro-ecological Zones Methodology
Geographical Data Layers



4. Global land cover characteristics database; USGS Eros Data Center; at 1 km resolution.

Agro-ecological Zones Methodology
Geographical Data Layers



5. Global gridded population distribution data of 1995; CIESIN; at 2.5 arc-min. latitude/longitude resolution.

Global Agro-ecological Zones

Environmental resources database

including climate, soil, terrain, and land cover

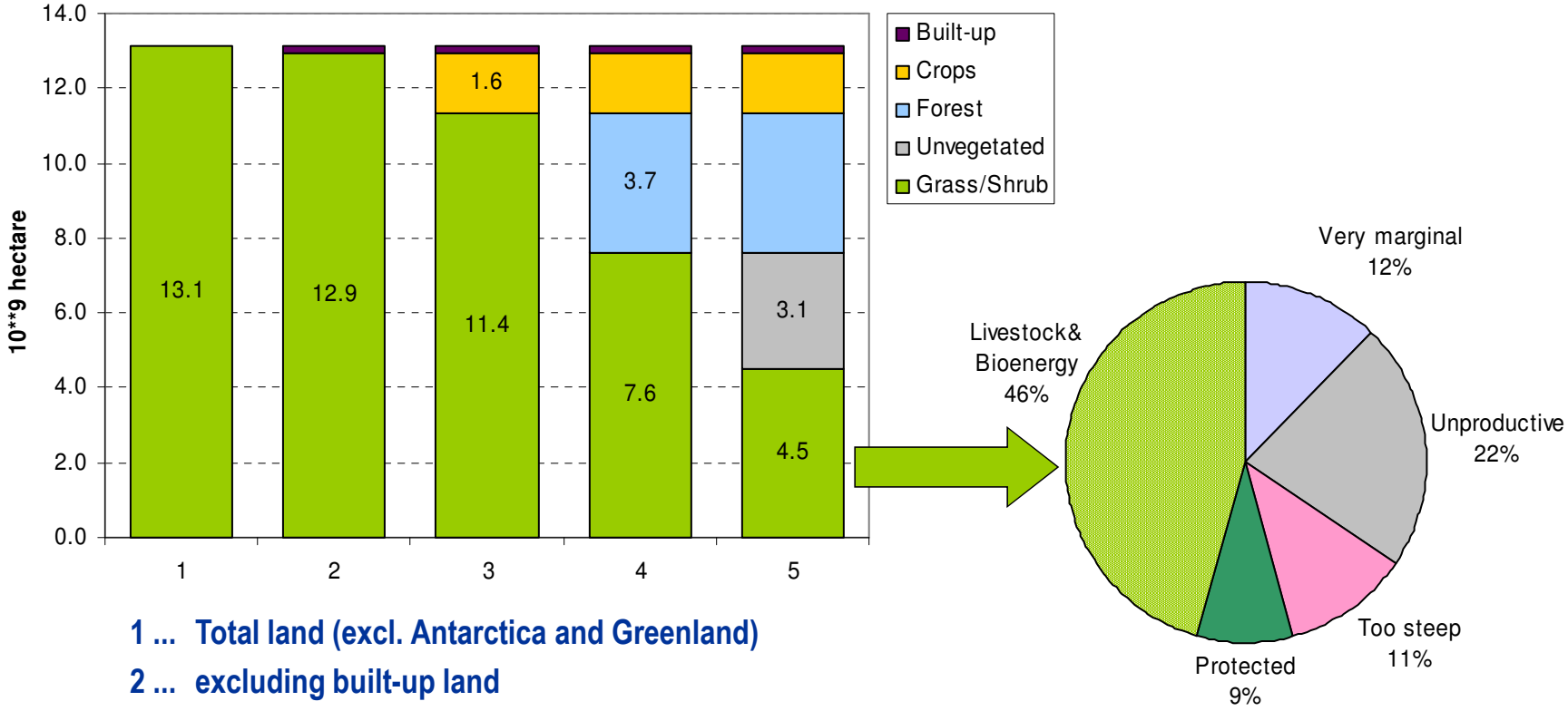
comprising 2.2 million grid cells,

assessing the agricultural potential

of all crops, pastures, trees, shrubs

at three levels of farming technology.

AEZ Assessment : How much land is available?



1 ... Total land (excl. Antarctica and Greenland)

2 ... excluding built-up land

3 ... excluding arable and perennial cropland

4 ... excluding forests

5 ... excluding barren land & water

Source: IIASA-LUC, 2007

Responsible Agriculture Investments
Partnering for Food Security

Current Cultivated Land : Development Partnership – Closing the Yield Gaps

Uncultivated Land : Development Partnership : Population Density – Social Risks, Infrastructure and Services Development, Employment and Livelihoods

Principles of Responsible Investment, Code of Conduct, Legal protection
Property Rights, Voluntary Transfers, Transparency, Accountability
Social Responsibility, Economc Viability, Environmental Sustainability

Access to Scientific, Comprehensive, Timely information on Land Value
A New Deal in Agricultural Development Partnerships between
Wealthy food importing countries and Land and water resource rich developing countries

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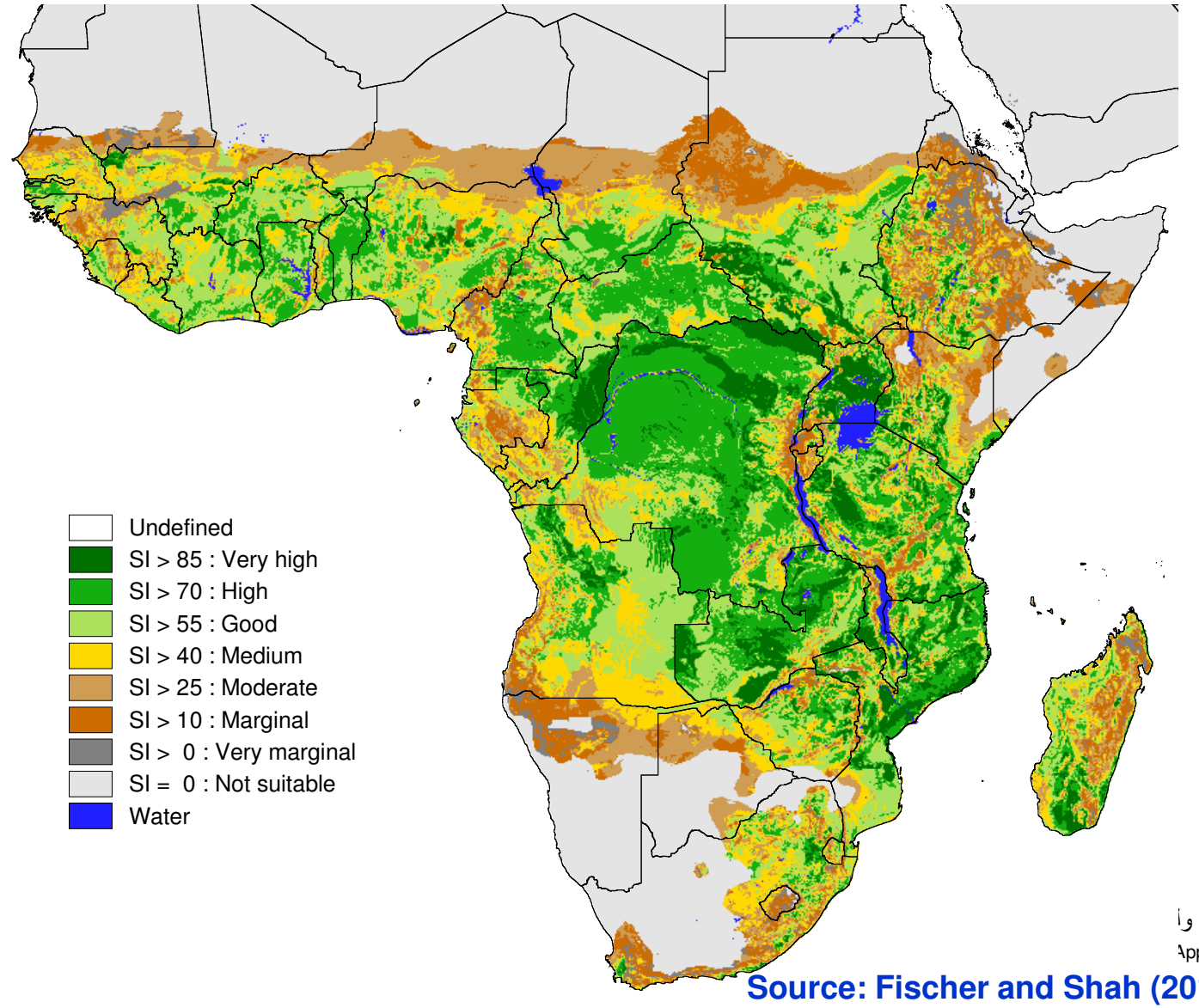
Country level land 'availability'

- Concentrated
  - 32 countries with > 90%
  - 16 in Africa
- Often large rel. to what is cultivated
  - 11 ctrs > double
  - 6 > triple
  - Other constraints

Countries with at least 3Mha suitable, non-cultivated, non-forested, non-protected land (1000 ha) and relative availability

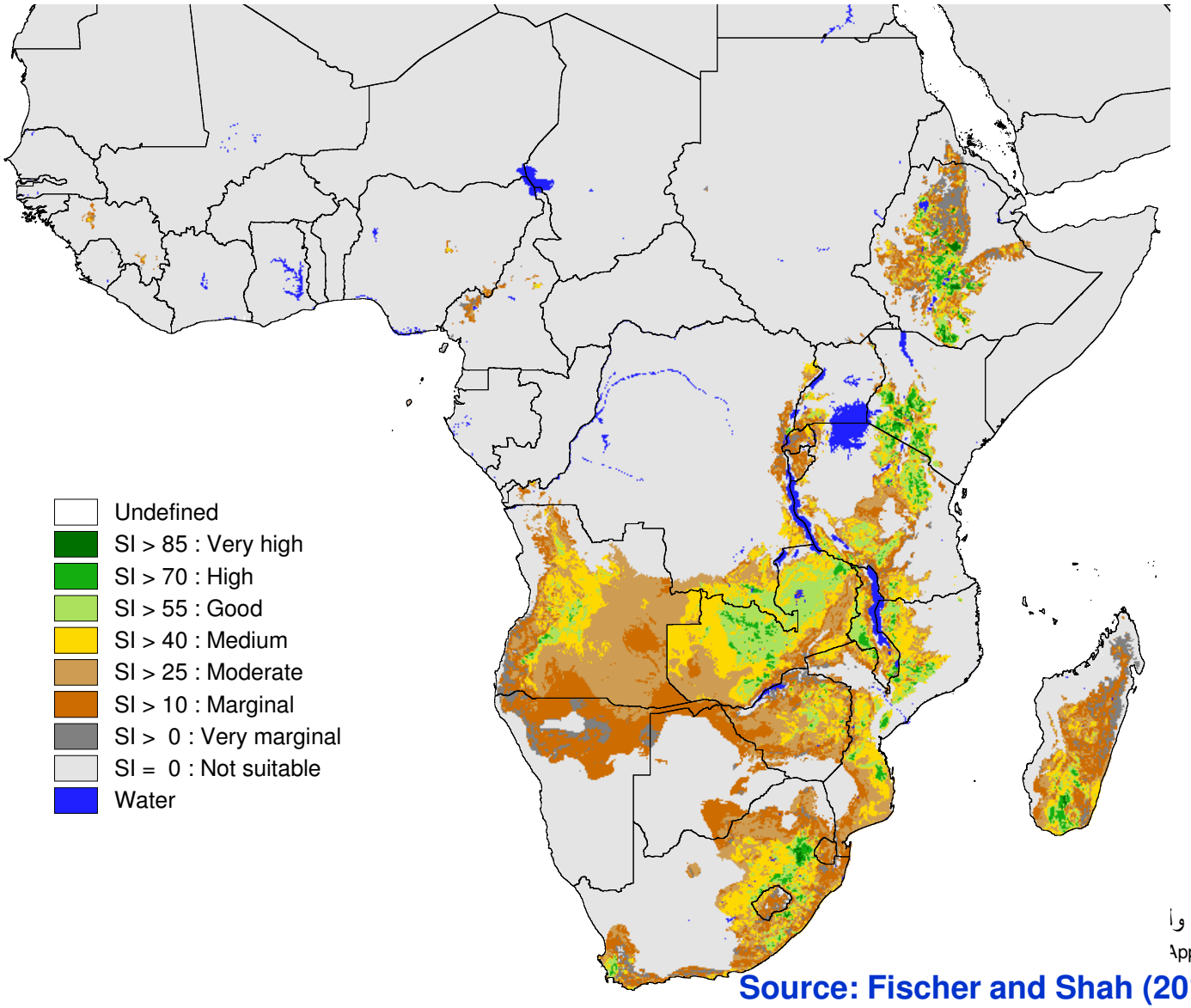
Sudan	46,025	2.82	Tanzania	8,659	0.94
Brazil	45,472	0.73	Bolivia	8,317	2.92
Russian Fed.	38,434	0.32	Cent. Afr. Rep.	7,940	4.23
Argentina	29,500	1.05	Paraguay	7,269	1.34
Australia	26,167	0.57	Colombia	4,971	0.68
D.R. Congo	22,498	1.53	Ethiopia	4,726	0.34
Mozambique	16,256	2.85	Cameroon	4,655	0.68
Madagascar	16,244	4.63	Kenya	4,615	0.99
Chad	14,816	1.92	Mexico	4,360	0.17
Zambia	13,020	2.83	Mali	3,908	0.47
Indonesia	10,486	0.32	Papua N.G.	3,771	5.93
Angola	9,684	3.31	Burkina Faso	3,713	0.77
Uruguay	9,269	4.56	Belarus	3,691	0.61
Venezuela	8,966	2.29	South Africa	3,555	0.23
United States	8,756	0.05	Congo	3,476	6.79
Canada	8,684	0.17	Ukraine	3,442	0.10
World Total	**445,858**				

Suitability for Rain-fed Maize



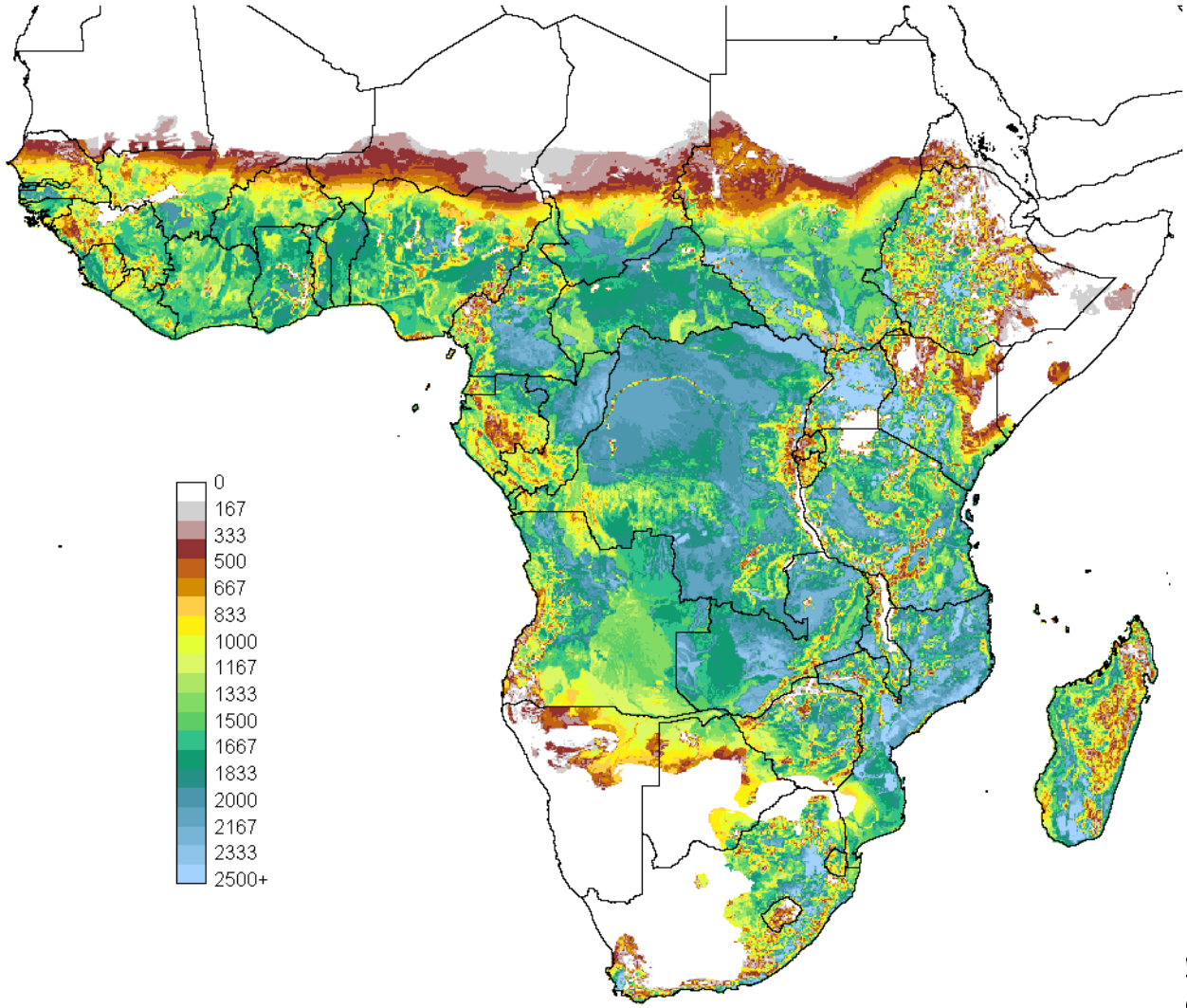
Source: Fischer and Shah (2010)

Suitability for Rain-fed Wheat



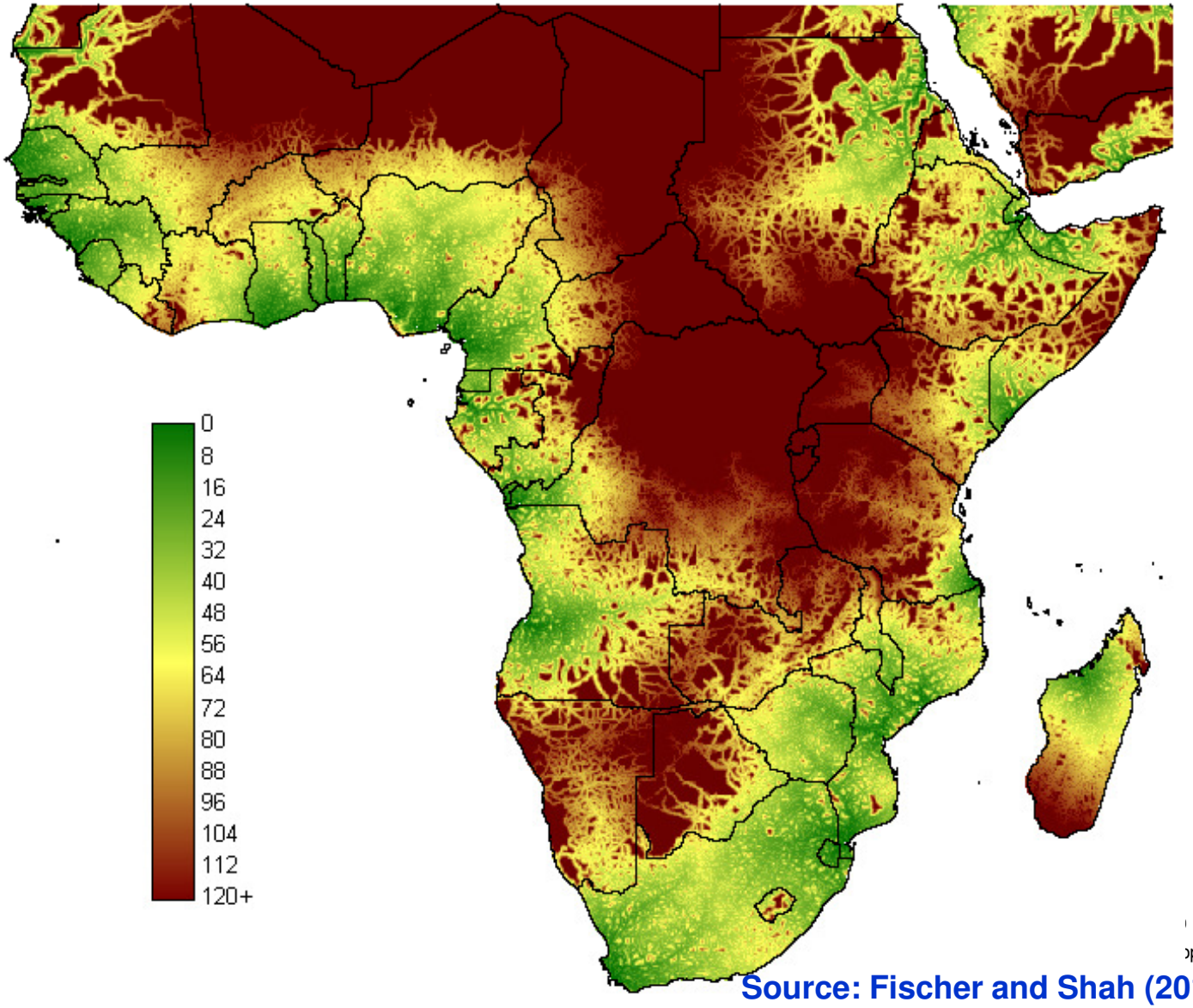
Source: Fischer and Shah (2010)

Potential Output Density of Food Crops (GK$/ha)



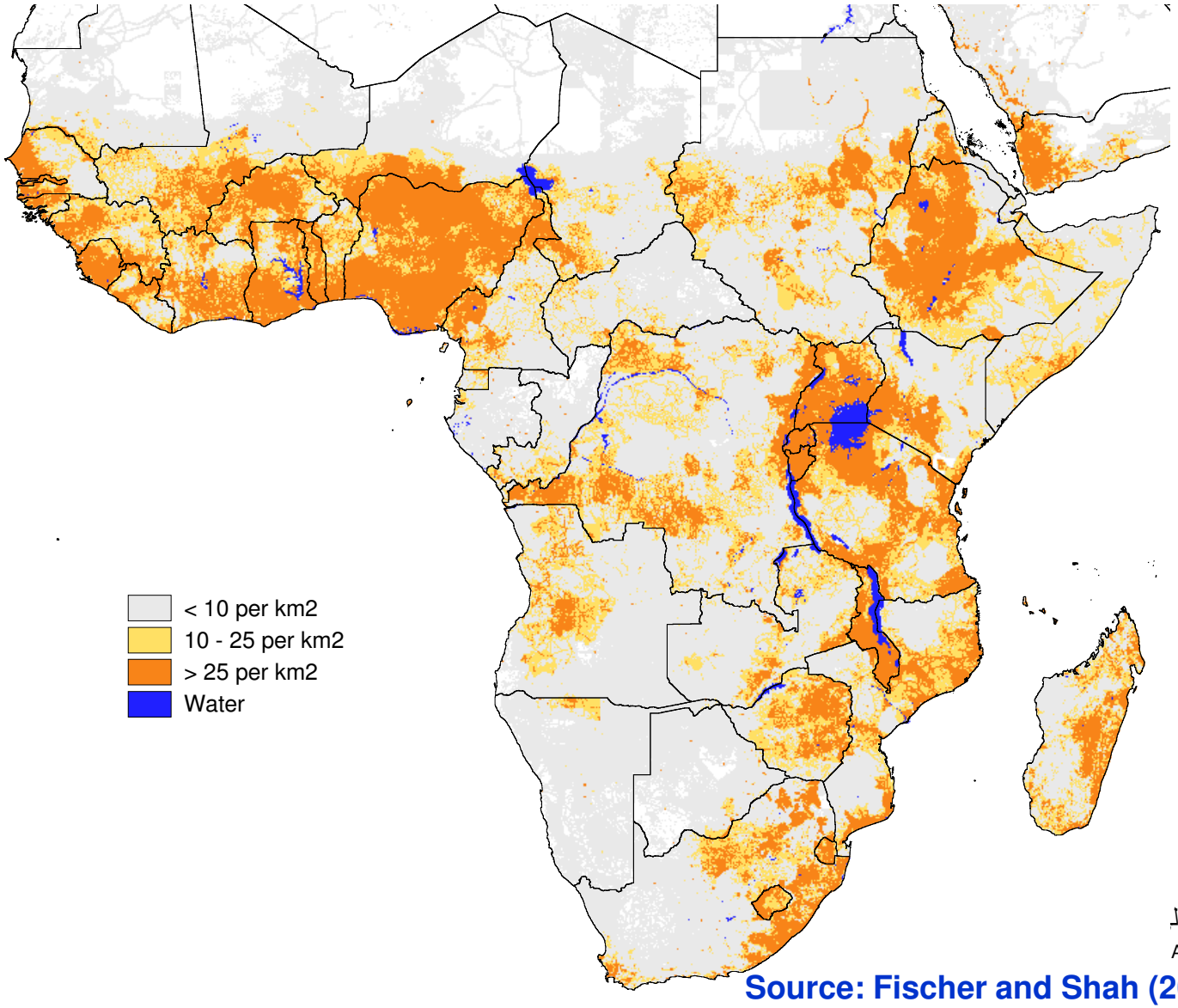
Source: Fischer and Shah (2010)

Transport Cost to Port ($/ton)



Source: Fischer and Shah (2010)

Population Density



Source: Fischer and Shah (2010)

Current Cultivated Land: Food Production Potential, High Technology

Suitable Area(VS + S + MS, 1000 Ha

Transport Cost

Average Yield

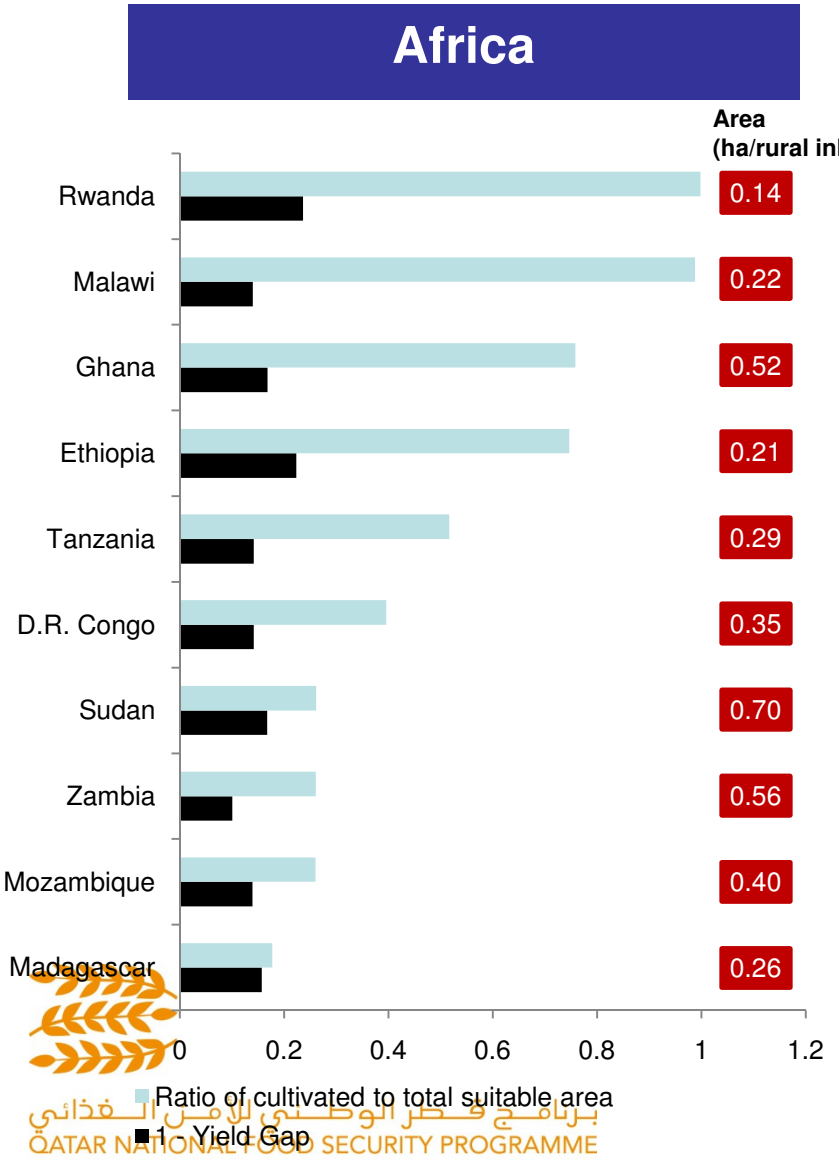
Region	TC< $30	TC $30 to $60	TC > $60	TOTAL	GK$2000/Ha
SSA	30012	61285	106048	197345	1825
E. Africa	3691	15321	51848	70860	2022
M. Africa	2116	4781	28565	35462	1830
S. Africa	6308	7210	1335	14853	2041
W. Africa	17897	33972	24301	76169	1596

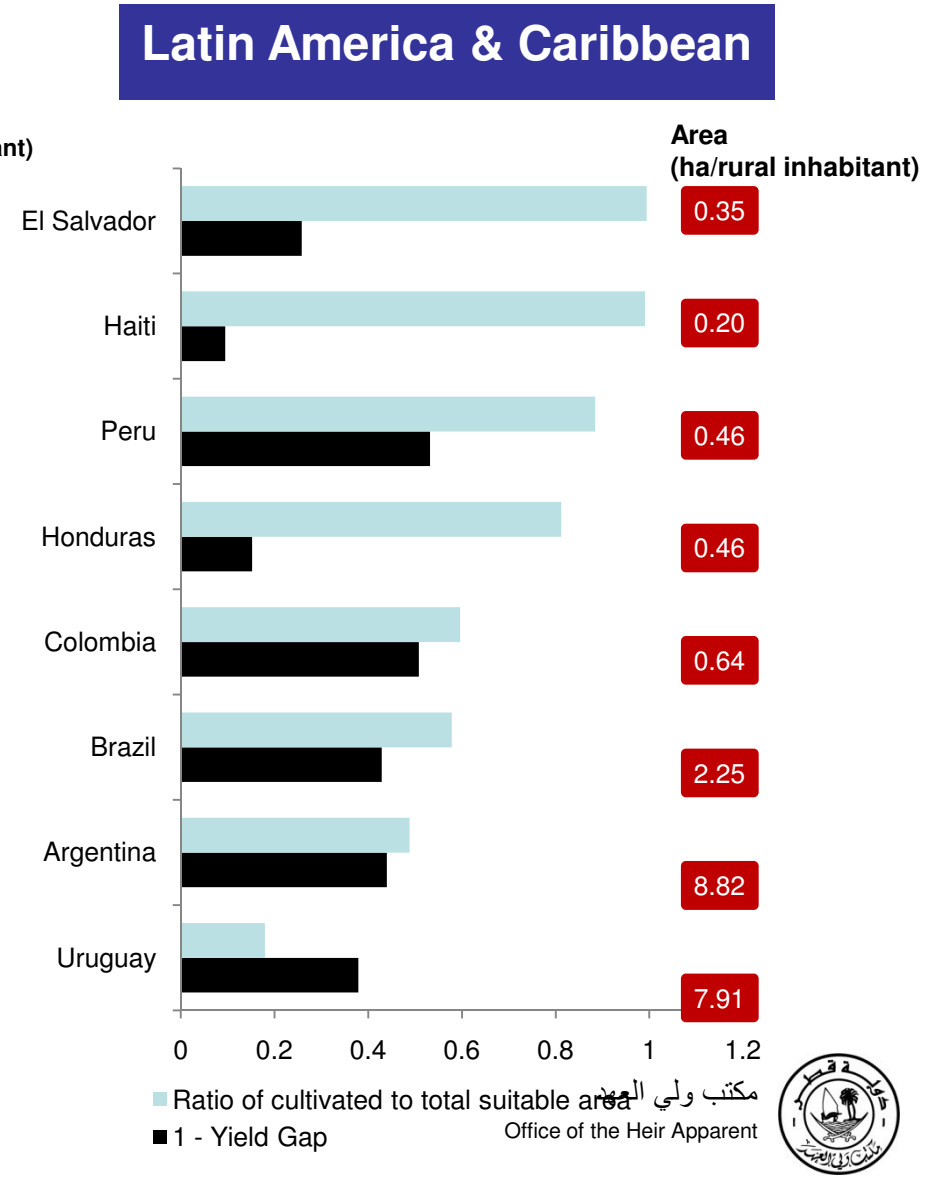
Grassland and Woodland: Food Production Potential, High Technology

Region	TC< $30	TC $30 to $60	TC > $60	TOTAL	GK$2000/Ha
SSA	46912	109054	321396	477391	1760
E. Africa	14694	39795	157250	211740	1871
M. Africa	10195	21969	118323	150487	1772
S. Africa	5530	11026	6998	23554	1742
W. Africa	16492	36263	38826	91589	1491

Source: Fischer and Shah (2010)

Yield gap, share of land used, area/rural person





Current Cultivated Land: Food Production Potential, High Technology

Suitable Area(VS + S + MS, 1000 Ha)

Population Density

Average Yield

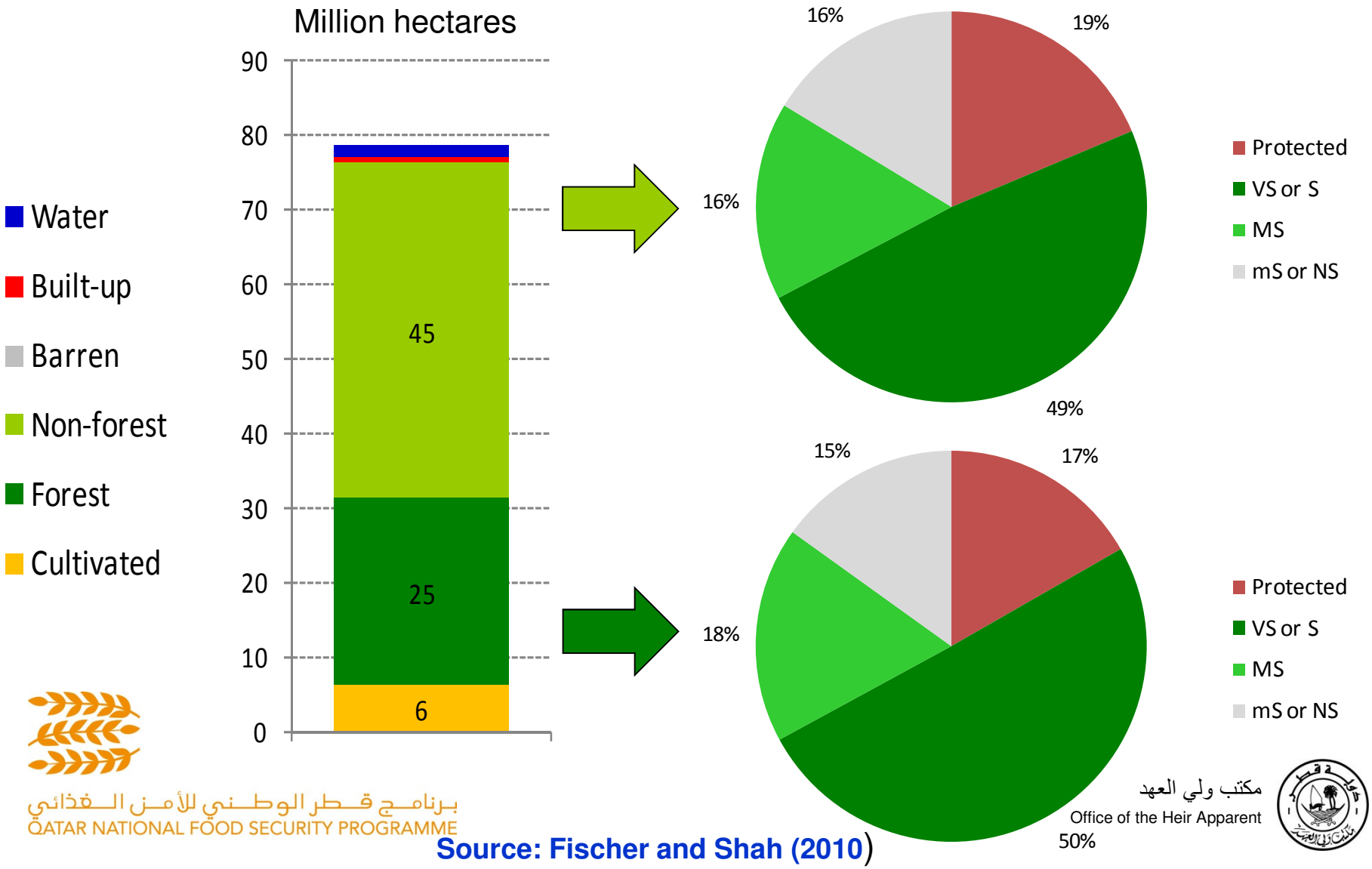
Region	PD< 10	PD 10 to 25	PD> 35	TOTAL	GK$2000/Ha
SSA	48509	48657	100197	197345	1825
E. Africa	19544	16702	34614	70860	2022
M. Africa	17689	9544	8229	35462	1830
S. Africa	4685	4998	5170	14853	2041
W. Africa	6592	17412	52165	76169	1596

Grassland and Woodland: Food Production Potential, High Technology

Region	PD< 10	PD 10 to 25	PD> 25	TOTAL	GK$2000/Ha
SSA	224961	122368	130033	477391	1761
E. Africa	98785	54246	58709	211740	1871
M. Africa	100487	33403	16596	150487	1772
S. Africa	12611	4642	6301	23554	1742
W. Africa	13078	30077	48427	91582	1491

Source: Fischer and Shah (2010)

Suitability for Food Crops in Mozambique



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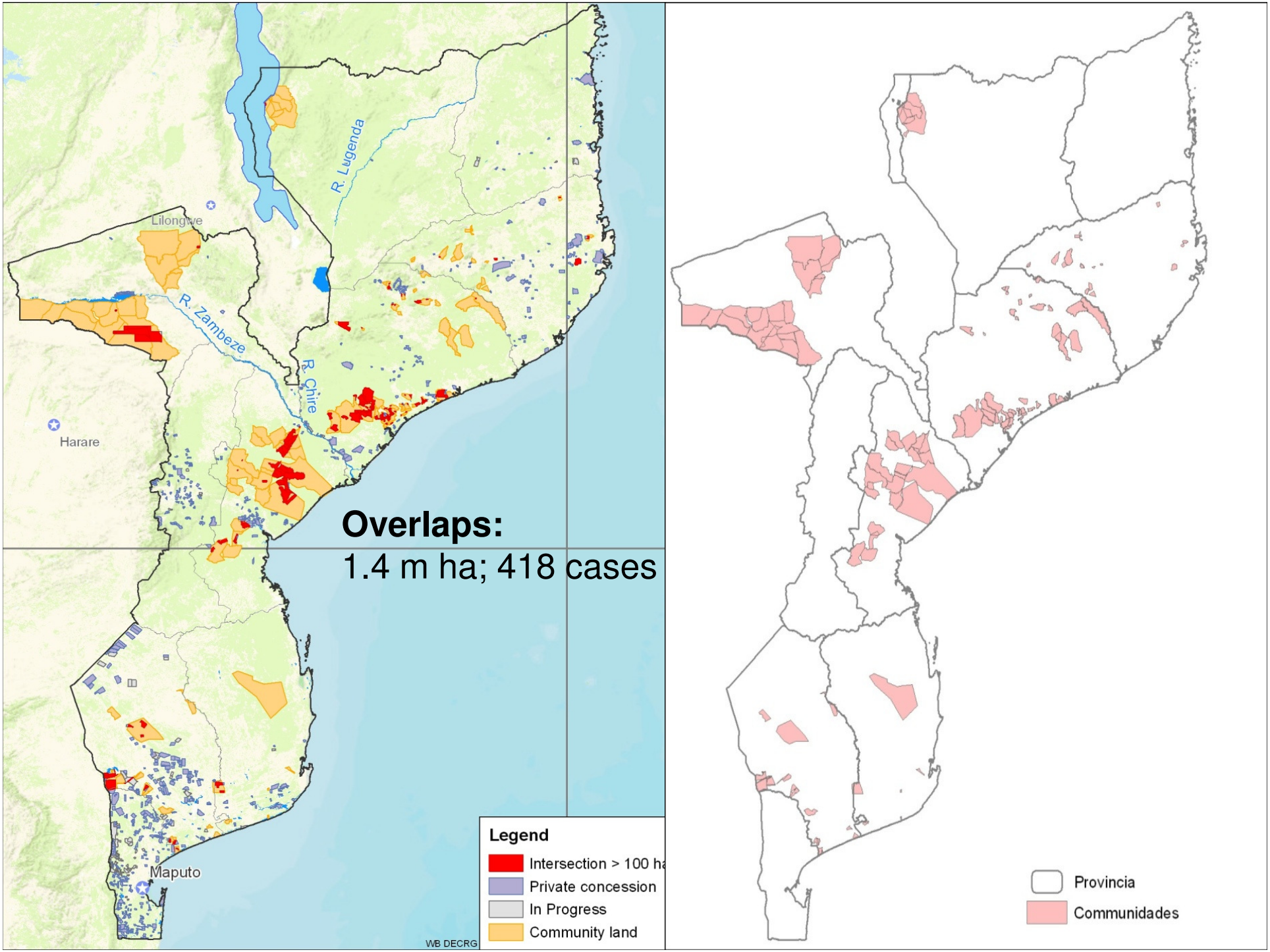
Source: Fischer and Shah (2010)


R. Lugenda
Lilongwe
R. Zambeze
R. Chire
Harare
Maputo
Overlaps:
1.4 m ha; 418 cases
Legend
Intersection > 100 ha
Private concession
In Progress
Community land
WB DECRG
Provincia
Communidades

Roles by different stakeholders

1. **Government: Integrate investment into agric. strategy**
   - Identify areas with potential & provide complementary public goods
   - Recognize, register, and help enforce property rights (incl. valuation)
   - Improve & streamline institutional framework
2. **Private sector: Promote industry standards that integrate land rights**
   - Leading industry practice can provide basis for regulation
   - Extend coverage/disclosure of existing approaches (e.g. Equator Principles)
   - Explore multi-stakeholder initiatives (e.g. EITI) building on existing work
3. **Civil society & academics: Contribute to greater transparency**
   - Advise, monitor, implement to build civil society & community capacity
   - Give communities voice; empower them to negotiate & push enforcement
   - Publicize promising examples; link back to policy
4. **Global community: Capacity building support to interested governments**
   - Technical support & complementary infrastructure, institutional capacity
   - Create fora to monitor impact & share examples of good practice
   - In the context of a multi-stakeholder approach

Concluding Remarks

Current Cultivated Land
Closing the Yield Gap; Investors and Host Development Partnerships

“ New” Land Grasslands and Woodlands
Create Opportunities for Nationals, reducing pressures on current cultivated land
Joint Venture partnerships with Investors, small and large farms
Land Lease Rental Valuation, Investors - Large Farms, Land Rights, Biodiversity

Access to scientific, comprehensive and timely information: Hosts and Investors
Principles for responsible Domestic and International Agricultural Investments
Capacity building Recipients, assessment, policy analysis, negotiation skills

Due diligence and expert advise, multilateral institutions (FAO/IFAD/WFP/WB/UNCTAD)

Responsible International Agricultural Investments
Risk of Exporting Food Insecurity from Investing Countries to Recipient Countries

Universal Right to Food: Responsible International Investments