

# **Brazilian agriculture : The miracle of the cerrado**

**Brazil has revolutionised its own farms. Can it do the same for others?**

The Economist, Aug 26th 2010













# Development Trends in Cambodia

Laos PDR

Cambodia Location



Thailand

Vietnam

Gulf of Thailand

Area I

Area I

Area II

Area II

Area III

Area III

Area IV

Area IV

Block E

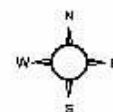
Block D

Block C

Block A

Block B

Block F



Scale = 1:3,524,041

0 25 50 100 Kilometers

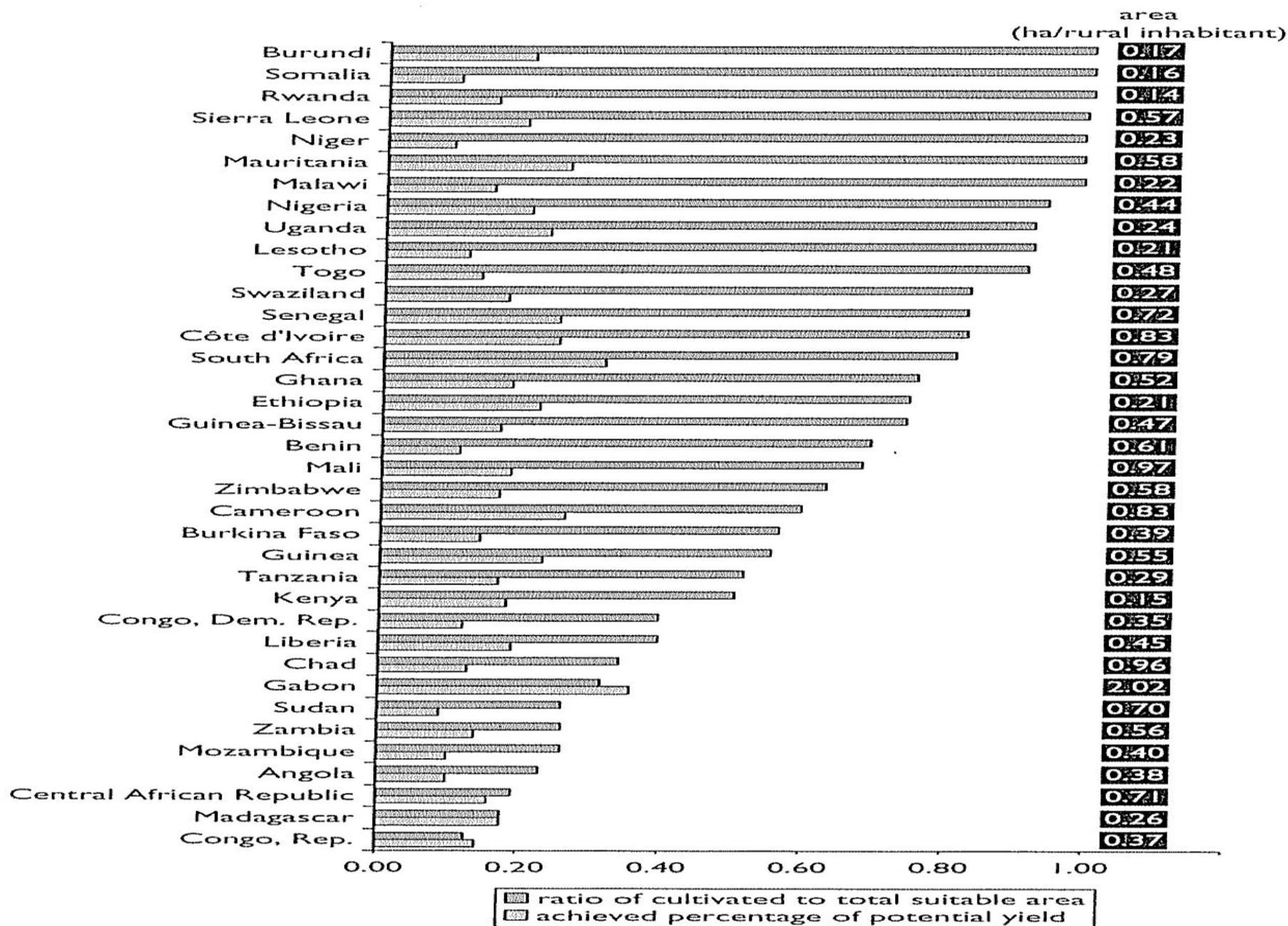
MAP PROJECTION SYSTEM:  
Coordinate System UTM, Spheroid Everest 1830,  
Datum: Indian Thailand 1960, Meters

## Forest Cover 2006

- Evergreen
- Deciduous
- Non-forest
- Other
- Semi-evergreen
- Woodshrub dry
- Woodshrub evergreen
- Bamboo forest

## Legend

- Special Economic Zones
- Union Development Group
- Economic land Concession
- Mining Concession
- Oil and Gas Blocks
- Proposed 150Kw Line
- Transmission line 220Kw
- Transmission Line 150Kw
- Proposed Hydro>50,000Kw
- Proposed Hydro>1000Kw
- Proposed Hydro 500-1000Kw
- Hydropower Reserviors
- Major rivers
- Protect areas
- Provincial\_boundaries



Source: Authors' calculations based on Fischer and Shah 2010.

**Table 3.2 Potential Area of Nonforested, Nonprotected Land Close to Market Most Suitable for Different Crops under Rainfed Cultivation, (thousand ha)**

|                                    | <b>5 crop<br/>total</b> | <b>Maize</b> | <b>Soybean</b> | <b>Wheat</b> | <b>Sugarcane</b> | <b>Oil<br/>palm</b> |
|------------------------------------|-------------------------|--------------|----------------|--------------|------------------|---------------------|
| Sub-Saharan Africa                 | 94,919                  | 44,868       | 38,993         | 3,840        | 6,023            | 1,194               |
| Latin America and<br>the Caribbean | 93,957                  | 28,385       | 37,716         | 11,043       | 15,021           | 1,793               |
| Europe and Central<br>Asia         | 43,734                  | 3,851        | 419            | 39,464       | 0                | 0                   |
| East and South<br>Asia             | 3,320                   | 465          | 443            | 1,045        | 500              | 867                 |
| Middle East and<br>North Africa    | 2,647                   | 0            | 10             | 2,637        | 0                | 0                   |
| Rest of World                      | 24,554                  | 5,741        | 5,289          | 12,747       | 722              | 55                  |
| Total < 6 hours<br>to market       | 263,131                 | 83,310       | 82,870         | 70,776       | 22,266           | 3,909               |
| Total                              | 445,624                 | 156,828      | 137,711        | 88,149       | 41,176           | 21,760              |
| Total cultivated<br>2008           | 520,411                 | 161,017      | 96,870         | 223,564      | 24,375           | 14,585              |

*Source:* Fischer and Shah 2010.

*Note:* Assessments are based on fewer than 25 persons/km<sup>2</sup> and less than six hours to market. 2005 output prices are used to determine gross revenue.



**Table 1.7 Land Expectation Values for Perennial Crops**

| <b>Commodity and country</b> | <b>Land expectation value (US\$/ha)</b> |
|------------------------------|---|
| <b>Oil palm</b>              |   |
| Indonesia                    | 4,800                                   |
| <b>Plantation forestry</b>   |   |
| Argentina                    | 3,125                                   |
| Brazil                       | 5,250–8,300                             |
| Colombia                     | 5,400                                   |
| South Africa                 | 2,900                                   |
| Uruguay                      | 750–1,400                               |
| <b>Sugar</b>                 |   |
| Brazil                       | 3,750                                   |
| Kenya                        | 8,000                                   |
| Mozambique                   | 9,750                                   |
| Tanzania                     | 11,000                                  |
| Zambia                       | 18,500                                  |

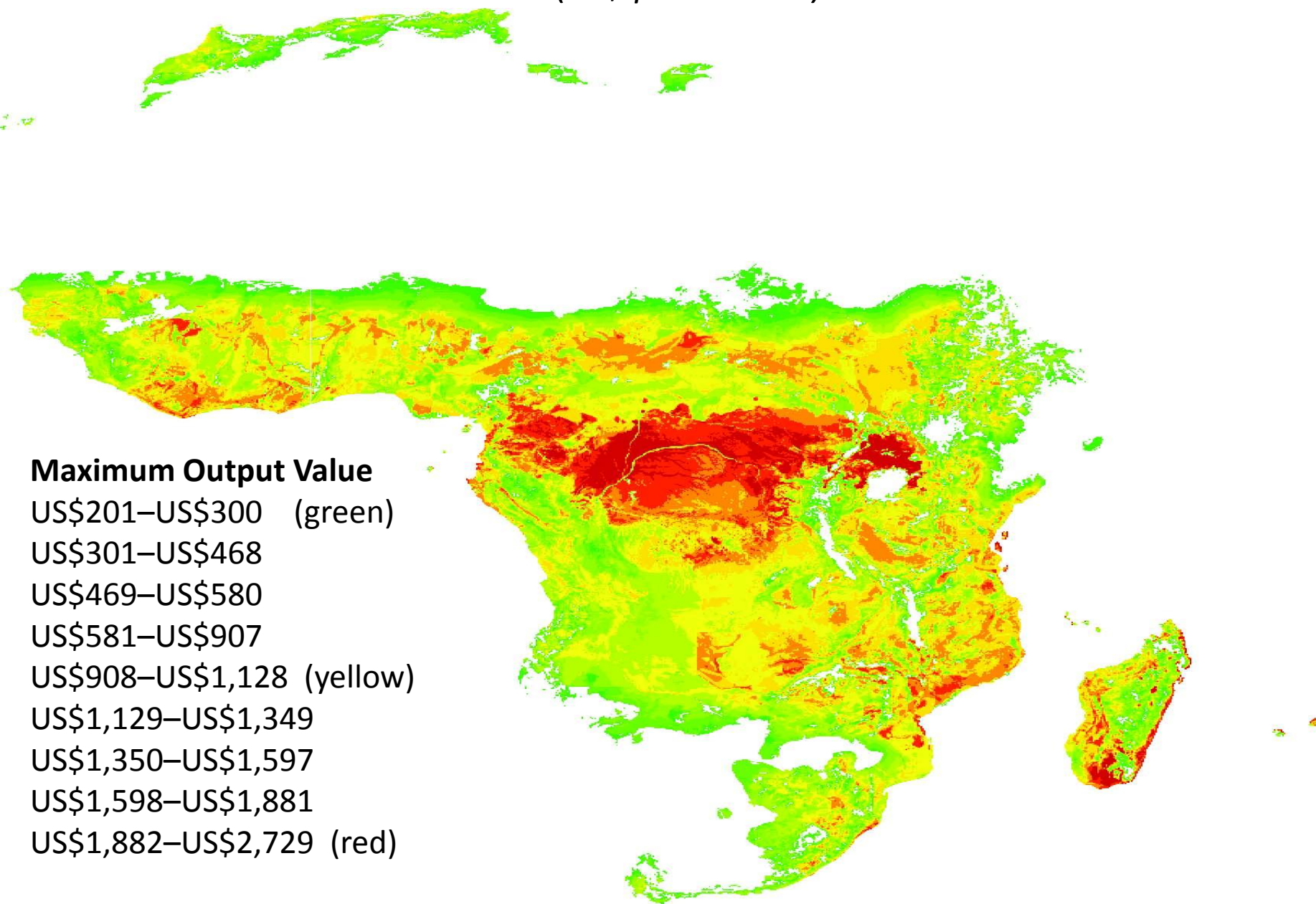
**Table A2.6 Potential Land Availability by Country (all areas are in thousands of ha)**

|                           | Total area       | Forest area    | Cultivated area | Forest<br>< 25/km <sup>2</sup> | Suitable noncropped, nonprotected    |                      |                     |
|---------------------------|------------------|----------------|-----------------|--------------------------------|--------------------------------------|----------------------|---------------------|
|                           |                  |                |                 |                                | Nonforest with population density of |                      |                     |
|                           |                  |                |                 |                                | < 25/km <sup>2</sup>                 | < 10/km <sup>2</sup> | < 5/km <sup>2</sup> |
| <b>Sub-Saharan Africa</b> | <b>2,408,224</b> | <b>509,386</b> | <b>210,149</b>  | <b>163,377</b>                 | <b>201,540</b>                       | <b>127,927</b>       | <b>68,118</b>       |
| Angola                    | 124,294          | 57,941         | 2,930           | 11,502                         | 9,684                                | 6,625                | 4,561               |
| Burkina Faso              | 27,342           | 2,072          | 4,817           | 452                            | 3,713                                | 1,040                | 256                 |
| Cameroon                  | 46,468           | 23,581         | 6,832           | 8,973                          | 4,655                                | 3,205                | 1,166               |
| Central African Republic  | 62,021           | 23,496         | 1,879           | 4,358                          | 7,940                                | 6,890                | 5,573               |
| Chad                      | 127,057          | 2,280          | 7,707           | 680                            | 14,816                               | 10,531               | 7,061               |
| Congo, Dem. Rep.          | 232,810          | 147,864        | 14,739          | 75,760                         | 22,498                               | 14,757               | 8,412               |
| Congo, Rep.               | 34,068           | 23,132         | 512             | 12,351                         | 3,476                                | 3,185                | 2,661               |
| Ethiopia                  | 112,829          | 8,039          | 13,906          | 534                            | 4,726                                | 1,385                | 376                 |
| Gabon                     | 26,269           | 21,563         | 438             | 6,469                          | 954                                  | 927                  | 839                 |
| Kenya                     | 58,511           | 3,284          | 4,658           | 655                            | 4,615                                | 2,041                | 935                 |
| Madagascar                | 58,749           | 12,657         | 3,511           | 2,380                          | 16,244                               | 11,265               | 6,572               |
| Mali                      | 125,254          | 3,312          | 8,338           | 582                            | 3,908                                | 776                  | 28                  |
| Mozambique                | 78,373           | 24,447         | 5,714           | 8,247                          | 16,256                               | 9,160                | 4,428               |
| South Africa              | 121,204          | 8,840          | 15,178          | 918                            | 3,555                                | 1,754                | 649                 |

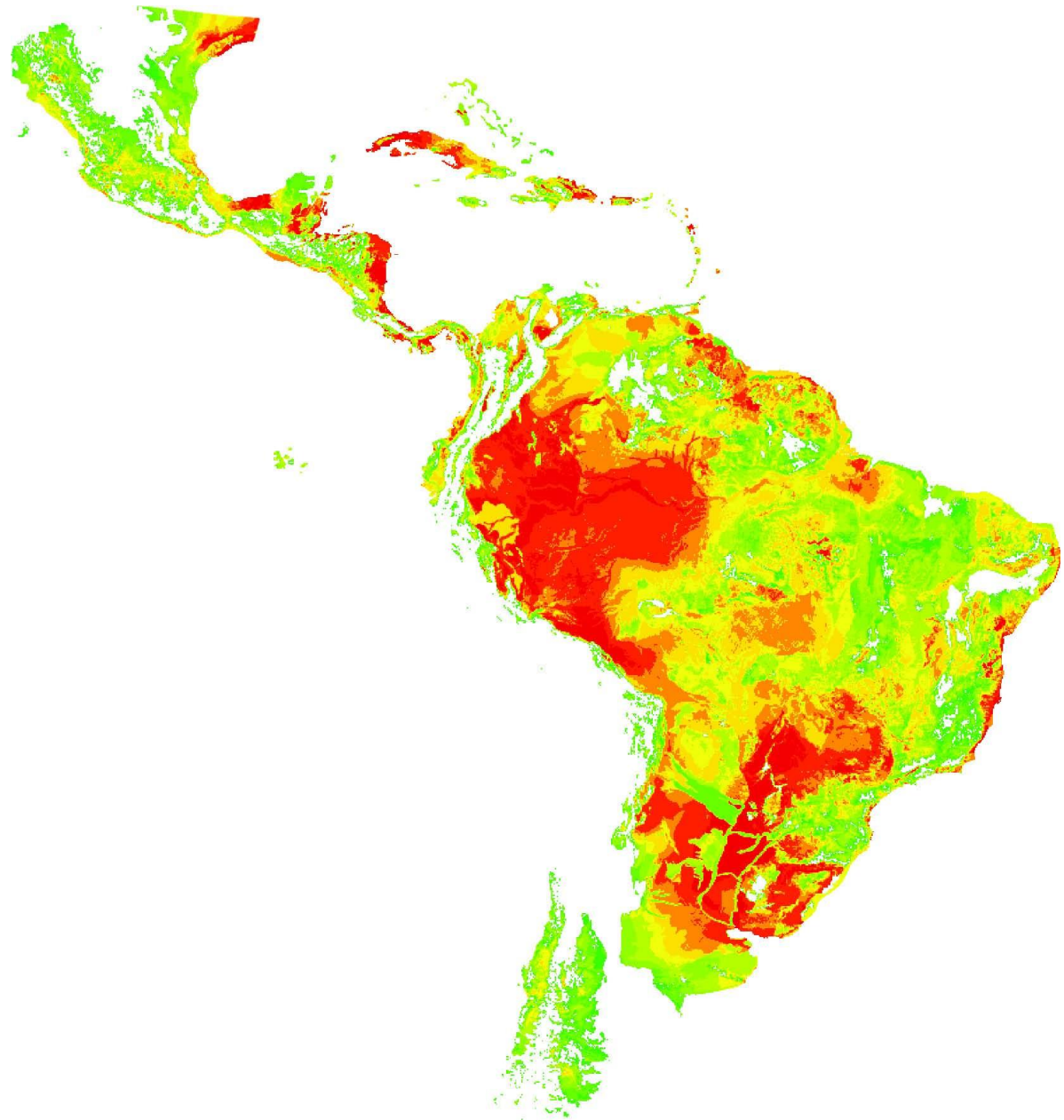
(continued)



Map A4.3.1 Maximum Potential Value of Output for Africa  
(US\$ per hectare)

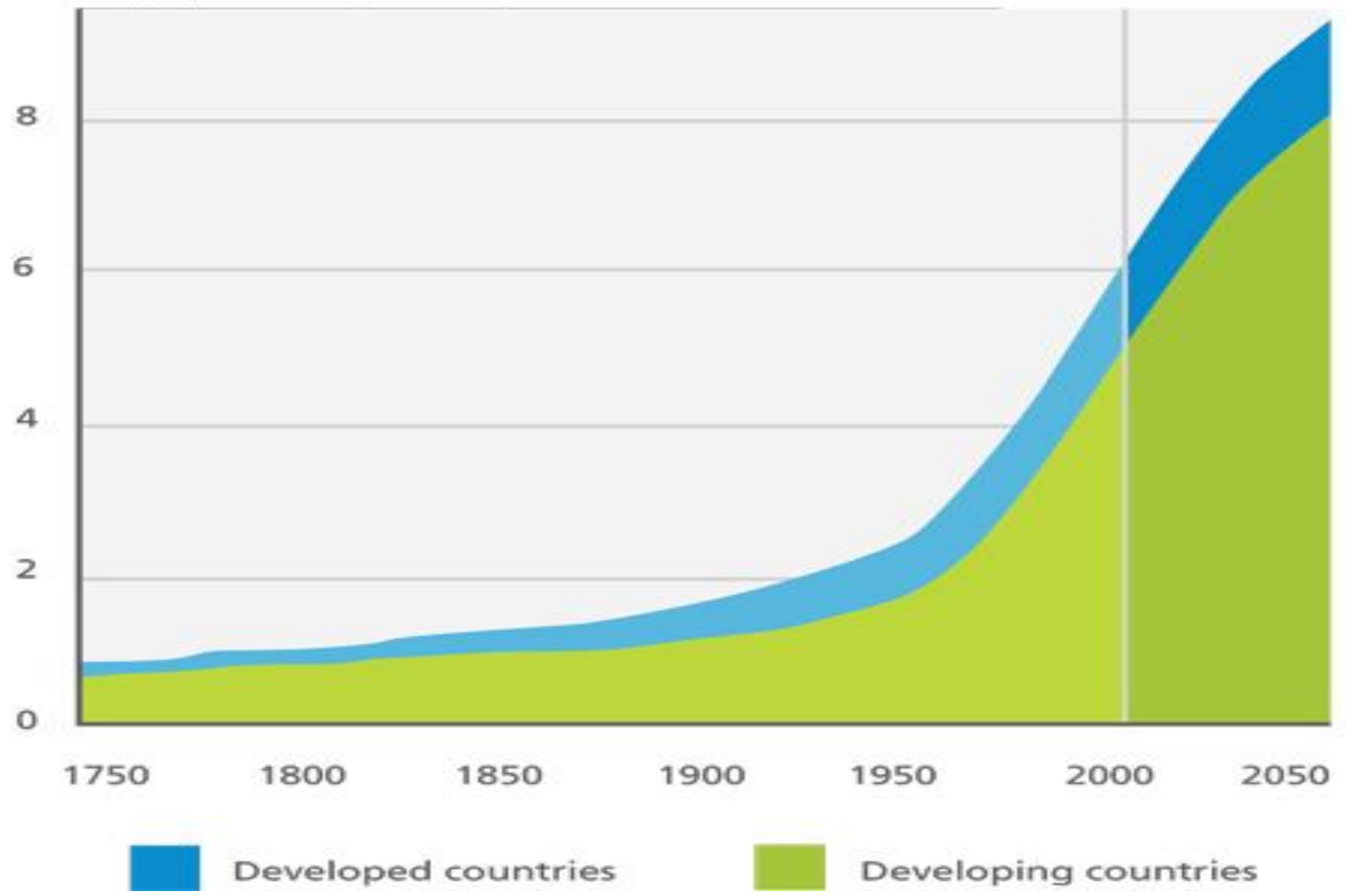


Map A4.3.2 Maximum Potential Value of Output for Latin America and the Caribbean (US\$ per hectare)





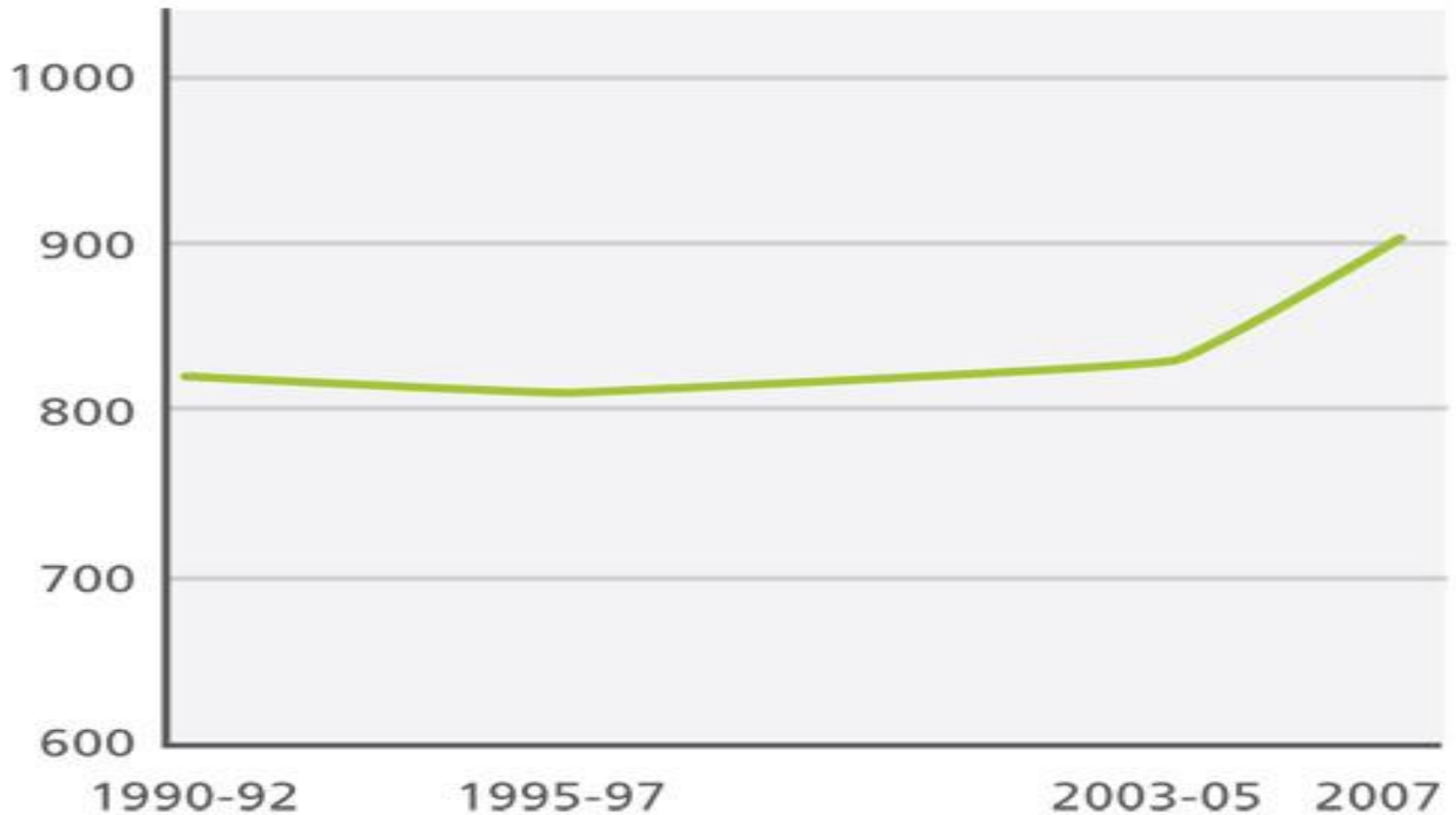
World population (billions)



## Number of undernourished people in the developing world, 1990-92 to 2007

Source: Food and Agriculture Organisation of the United Nations

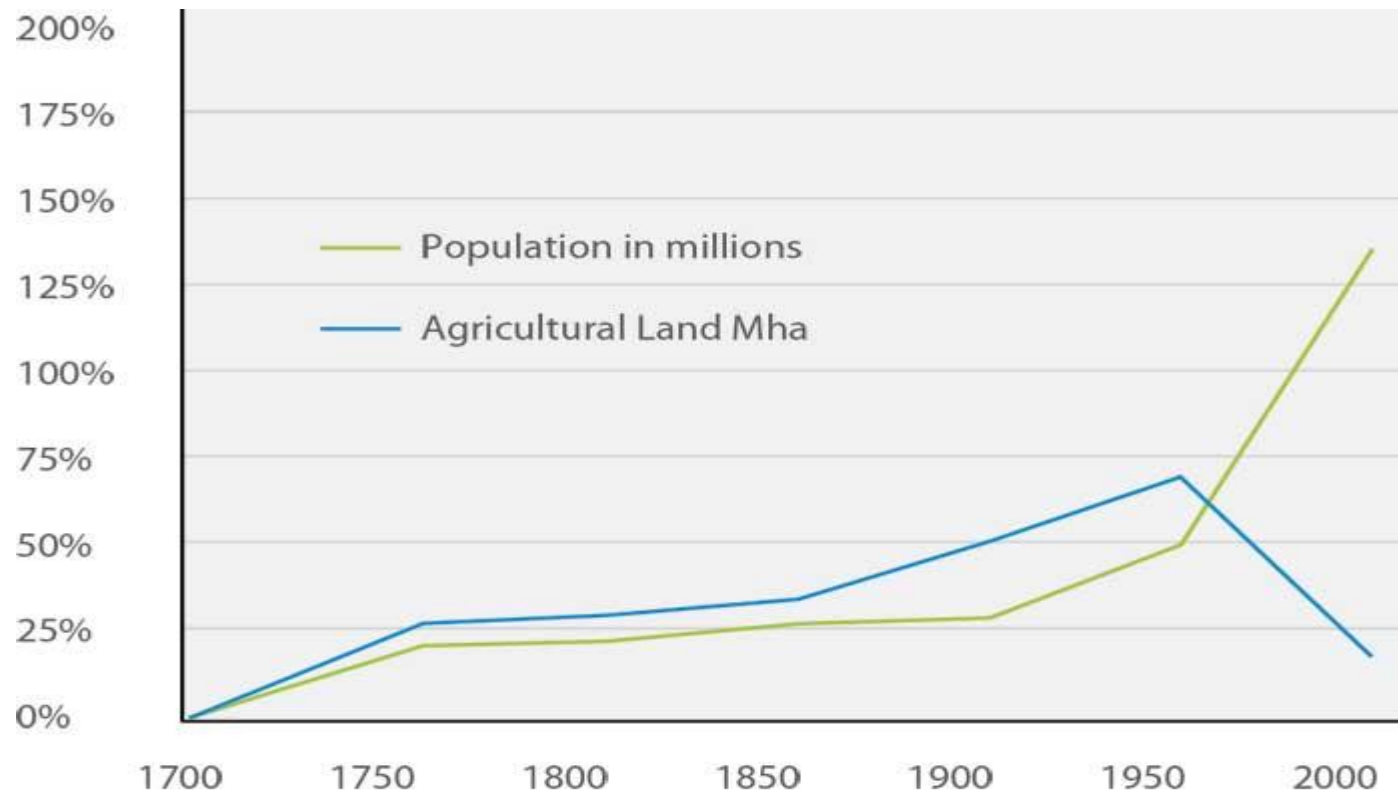
Millions












































## Percentage change (50 year average) in agricultural land and population between 1700 and 2000)

Source: Integrated Model to Assess the Global Environment (IMAGE), Netherlands Environmental Assessment Agency, 2006; United Nations Population Division, 2007



# KNIGHT FRANK INTERNATIONAL FARMLAND INDEX

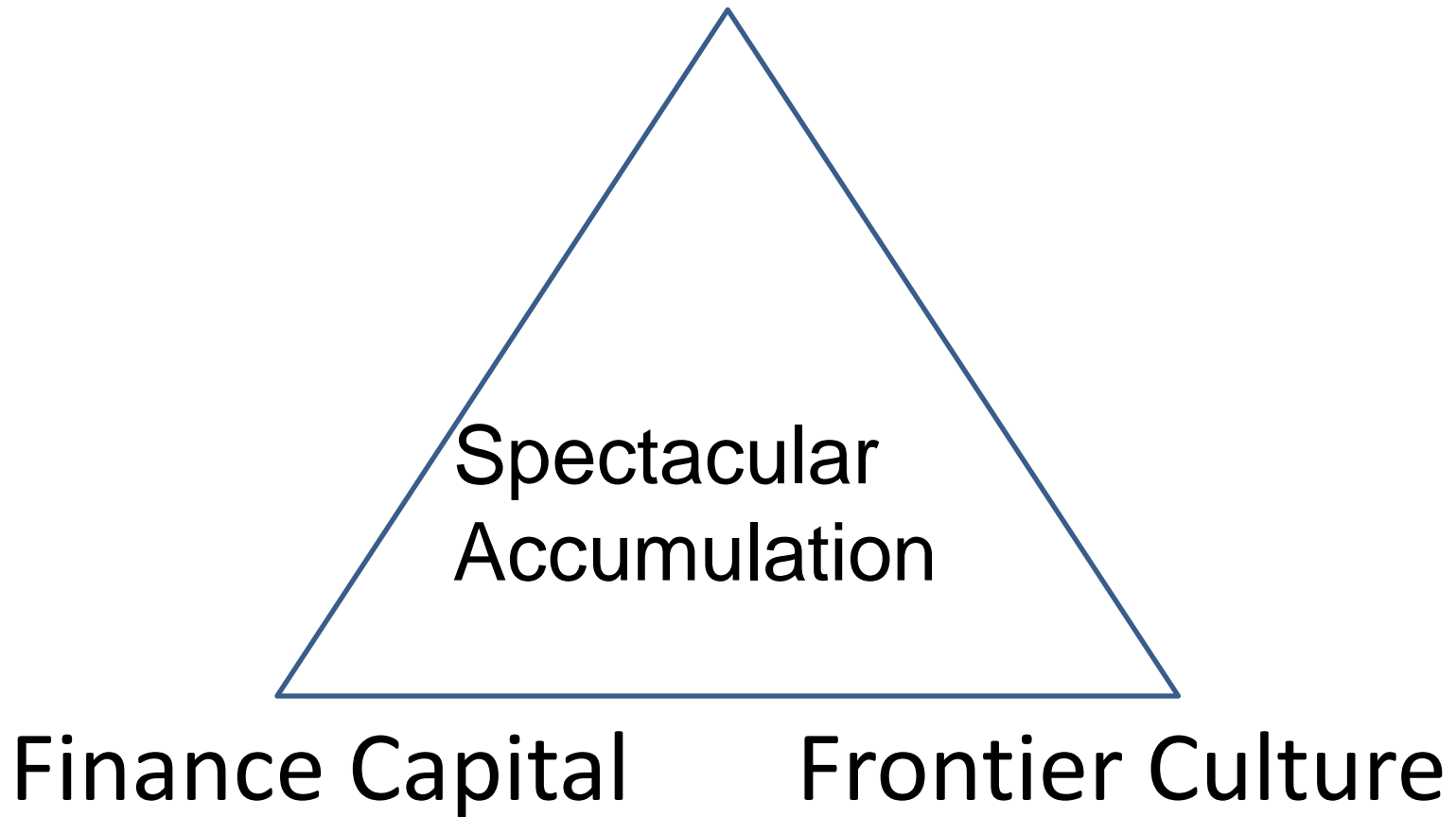
| LOCATION      |   | PRICE NOTES   | AVERAGE PRICE/HA              | PRICE CHANGE 2010 | LAND VALUE RISKS**  |
|---------------|---|---|-------------------------------|-------------------|---|
| ENGLAND       |    | Average all land types  | <b>\$22,000</b>               | +13%              |   |
| ROMANIA       |    | Price dependent on size of holding                                      | <b>\$1,560-<br/>\$3,250</b>   | 0%                |   |
| POLAND        |    | Price dependent on size of holding                                      | <b>\$4,550-<br/>\$8,125</b>   | 0%                |   |
| UKRAINE       |    | Five- to 10-year lease rights   | <b>\$150-<br/>\$350</b>       | 0%                |    |
| RUSSIA        |    | Price dependent on size of holding and progress of freehold application | <b>\$300-<br/>\$1,000</b>     | -10%              |     |
| ZAMBIA        |    | Long leasehold  | <b>\$1,000-<br/>\$1,500**</b> | —                 |     |
| BRAZIL        |    | Dryland double-cropping in Mato Grosso                                  | <b>\$7,000</b>                | +20%*             |     |
| BRAZIL        |    | Top sugar cane land in Sao Paulo  | <b>\$12,000</b>               | +24%*             |     |
| BRAZIL        |    | Dryland double-cropping in west Bahia                                   | <b>\$6,000</b>                | +6%*              |     |
| BRAZIL        |    | Native bush with high cattle potential in Para                          | <b>\$300</b>                  | +11%*             |     |
| ARGENTINA     |    | Northern provinces  | <b>\$1,200-<br/>\$2,500</b>   | +10%              |     |
| ARGENTINA     |   | Central provinces   | <b>\$5,000-<br/>\$10,000</b>  | +10%              |     |
| CANADA        |  | Saskatchewan province   | <b>\$1,300</b>                | +7%*              |   |
| AUSTRALIA     |  | Dryland arable with reliable rainfall                                   | <b>\$1,600-<br/>\$1,700</b>   | +2%               |     |
| NEW ZEALAND   |  | Dairy farms   | <b>\$23,000</b>               | -3%               |    |
| UNITED STATES |  | Quality dryland in cornbelt states                                      | <b>\$16,000</b>               | +8%               |    |

Prices are indicative and will vary widely depending on soil type, local climate and infrastructure. Price changes in local currency could vary widely from stated. \*Price change mid 2009-mid 2010. \*\*Risks exclude normal climate and commodity price fluctuations. Sources: Knight Frank Research, Knight Frank Zambia, Quotable Value, Brown & Co, AgriFrontiers, Philip Jarvis Associates, USDA, Statistics Canada, Farm Credit Canada, Hancock

POLITICAL   
ECONOMIC   
CLIMATE 



# Franchise Cronyism



Source: Anna Tsing, Inside the Economy of Appearances