

ECON 184

# Agriculture and land tenure

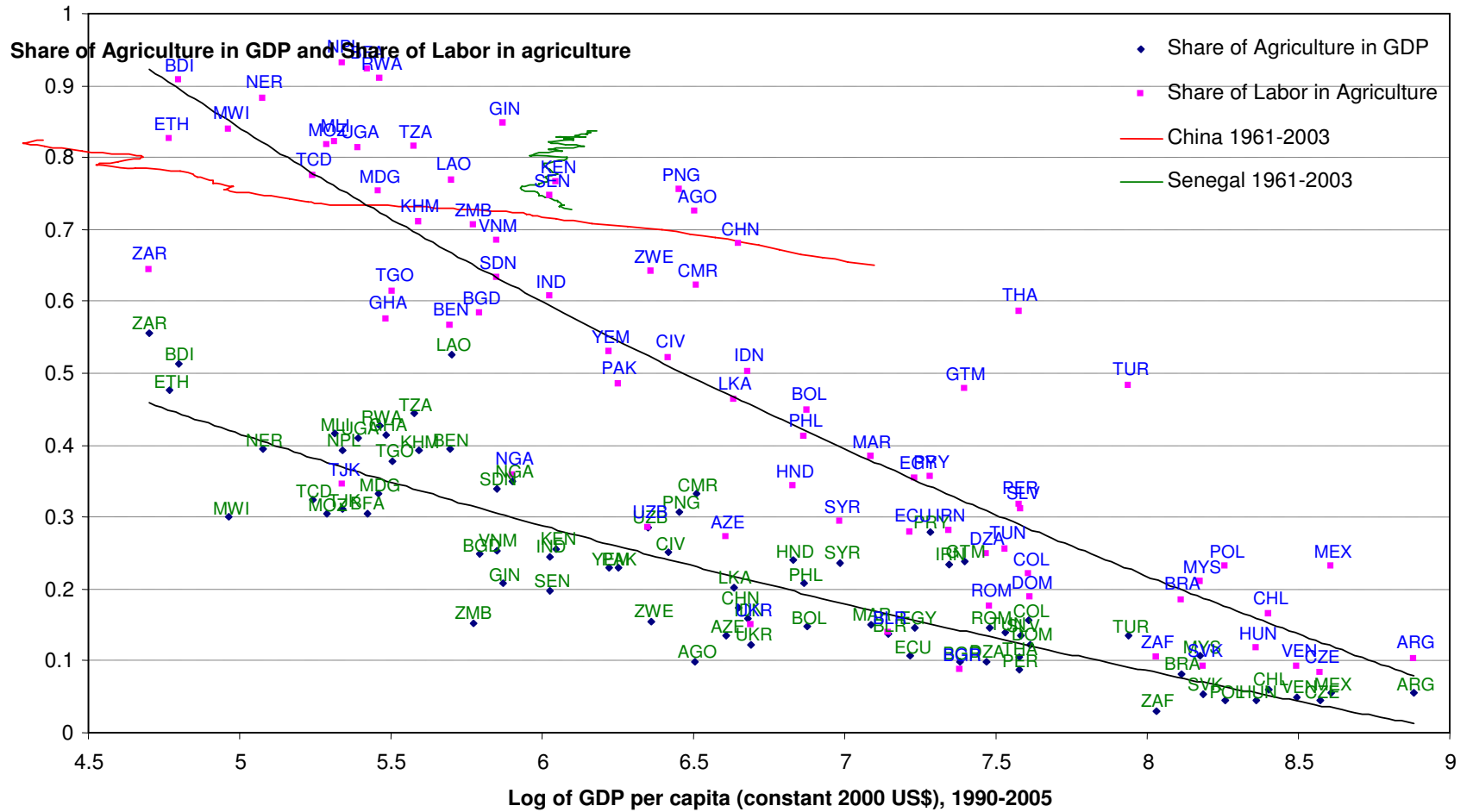
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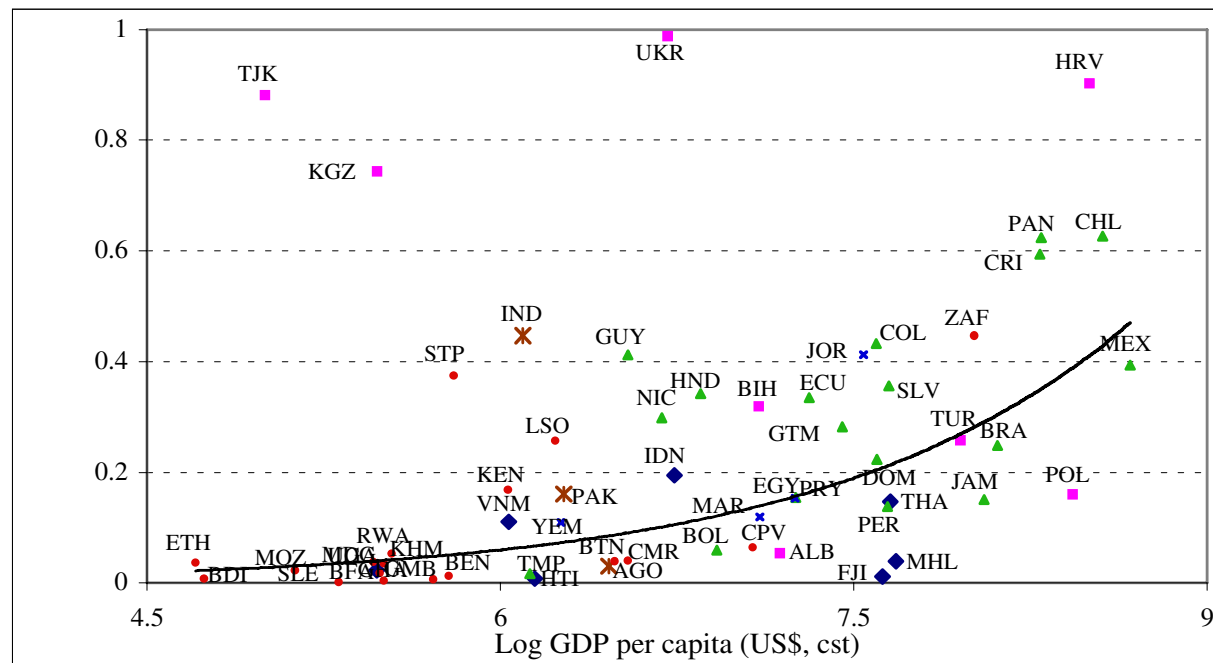
# 1 Agriculture

## 1.1 Agriculture and development

**Figure 1.2 Shares of labor and GDP in agriculture decline as countries develop**



**Figure 9.2 Higher share of wage workers in agricultural employment in countries with higher income per capita**

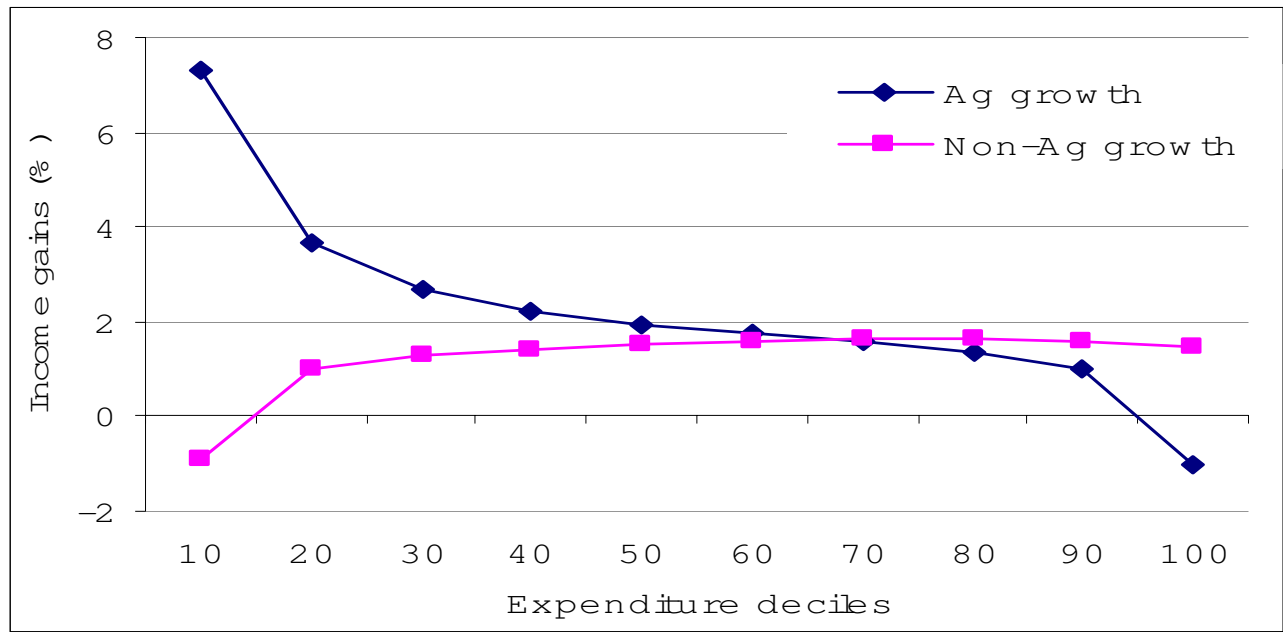


Source: same as table 9.2.

## 1.2 Why is agriculture important?

- Agricultural growth is expected to be pro-poor.

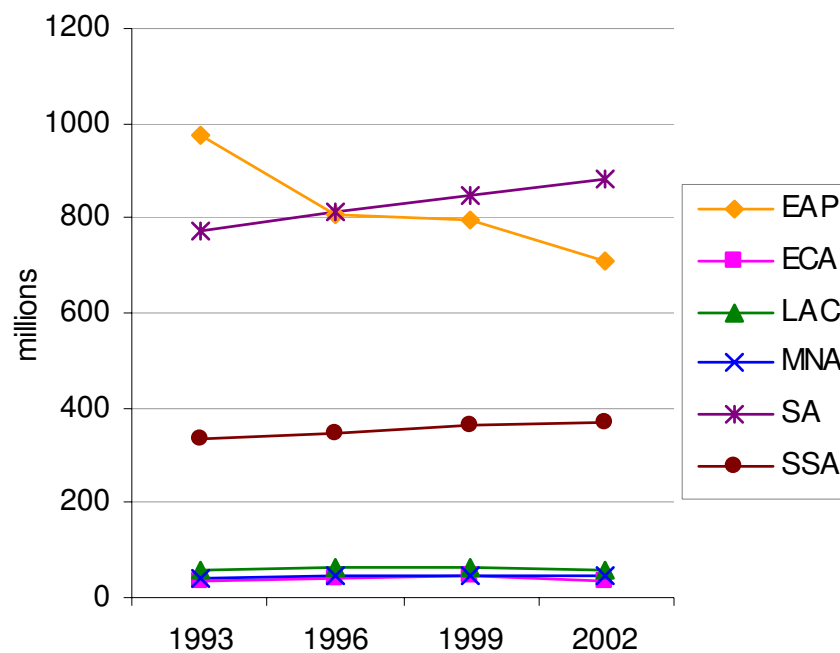
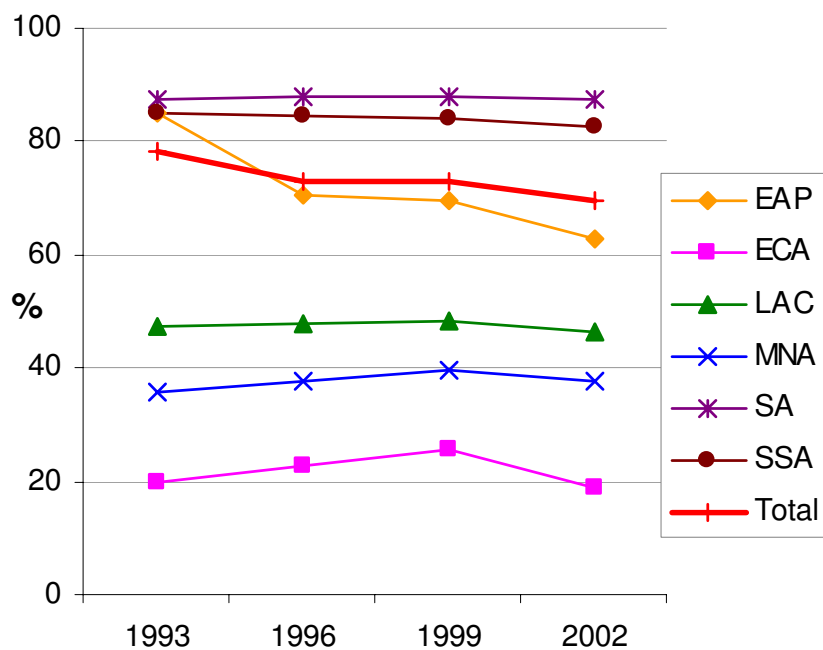
**Figure 1.3 Income gains from growth originating in agriculture are larger for the poorer expenditure deciles**



Source: Ligon and Others (2006).

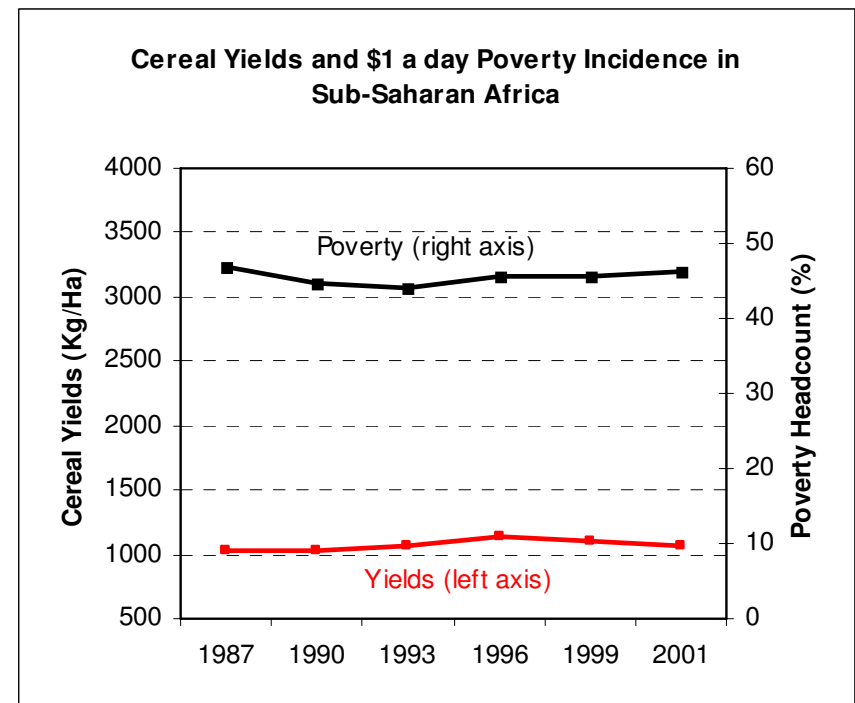
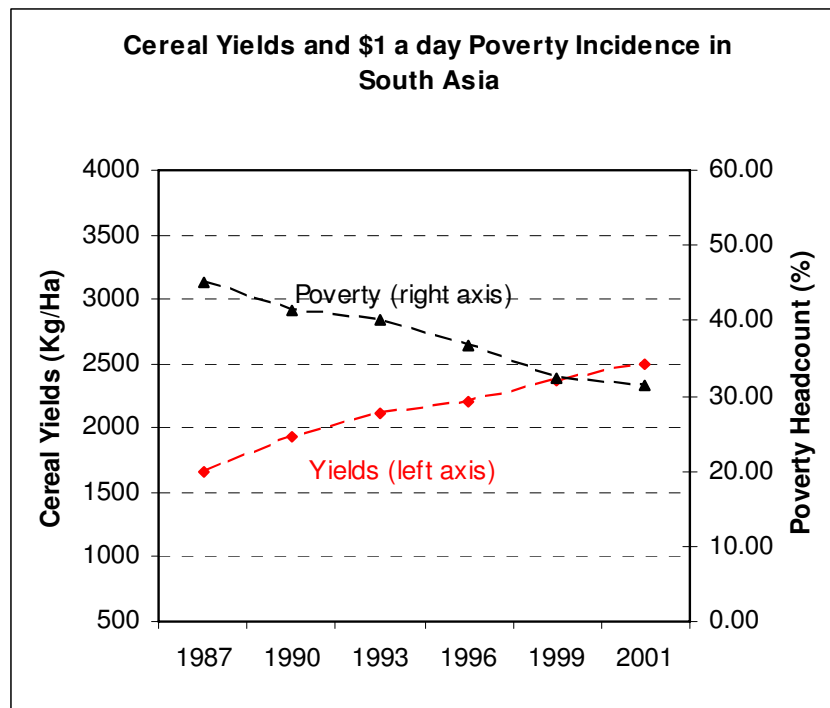
- Is where most of the poor live

**Figure A.1 Rural poverty rates and number of rural poor (\$2.15 a day poverty line)**



- Poverty is related to yields

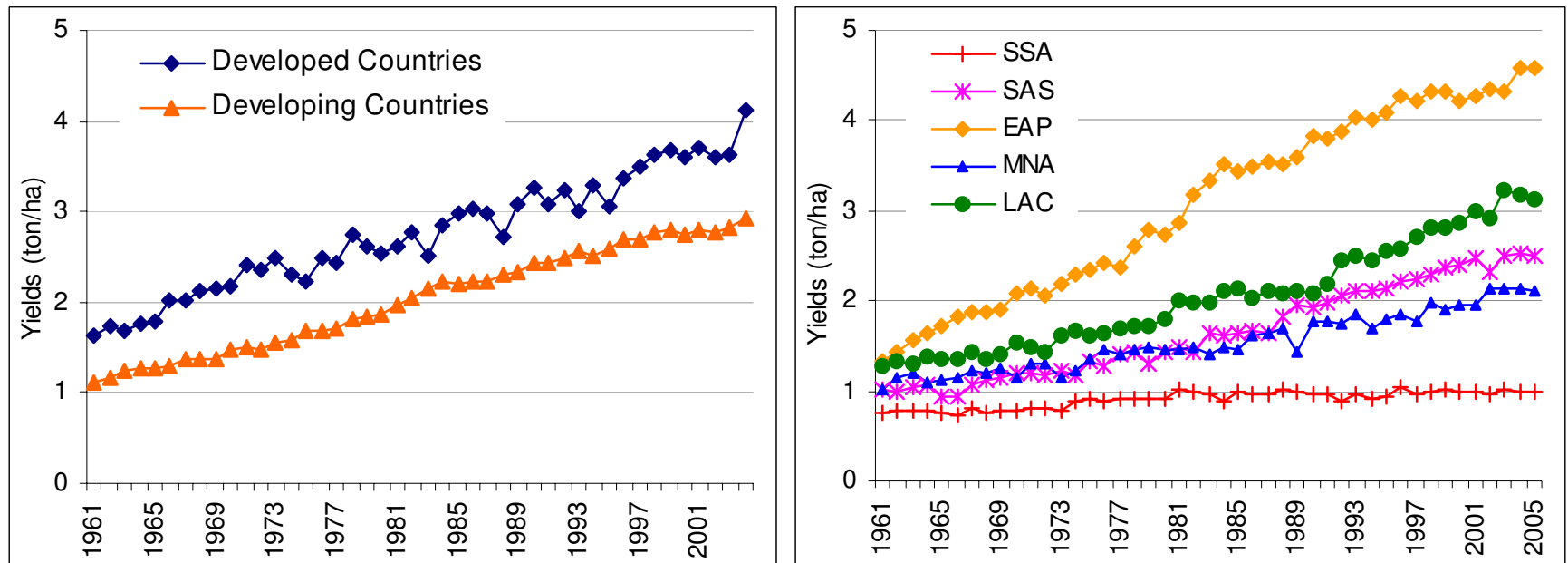
**Figure 1.1 Cereal yields up, poverty down in South Asia—cereal yields flat, poverty flat in Sub-Saharan Africa 1987-2001**



## 1.3 Agriculture in Africa

- Yields didn't increase in SSA

**Figure 2.1 Rising cereal yields but not in Sub-Saharan Africa (1961-2005)**

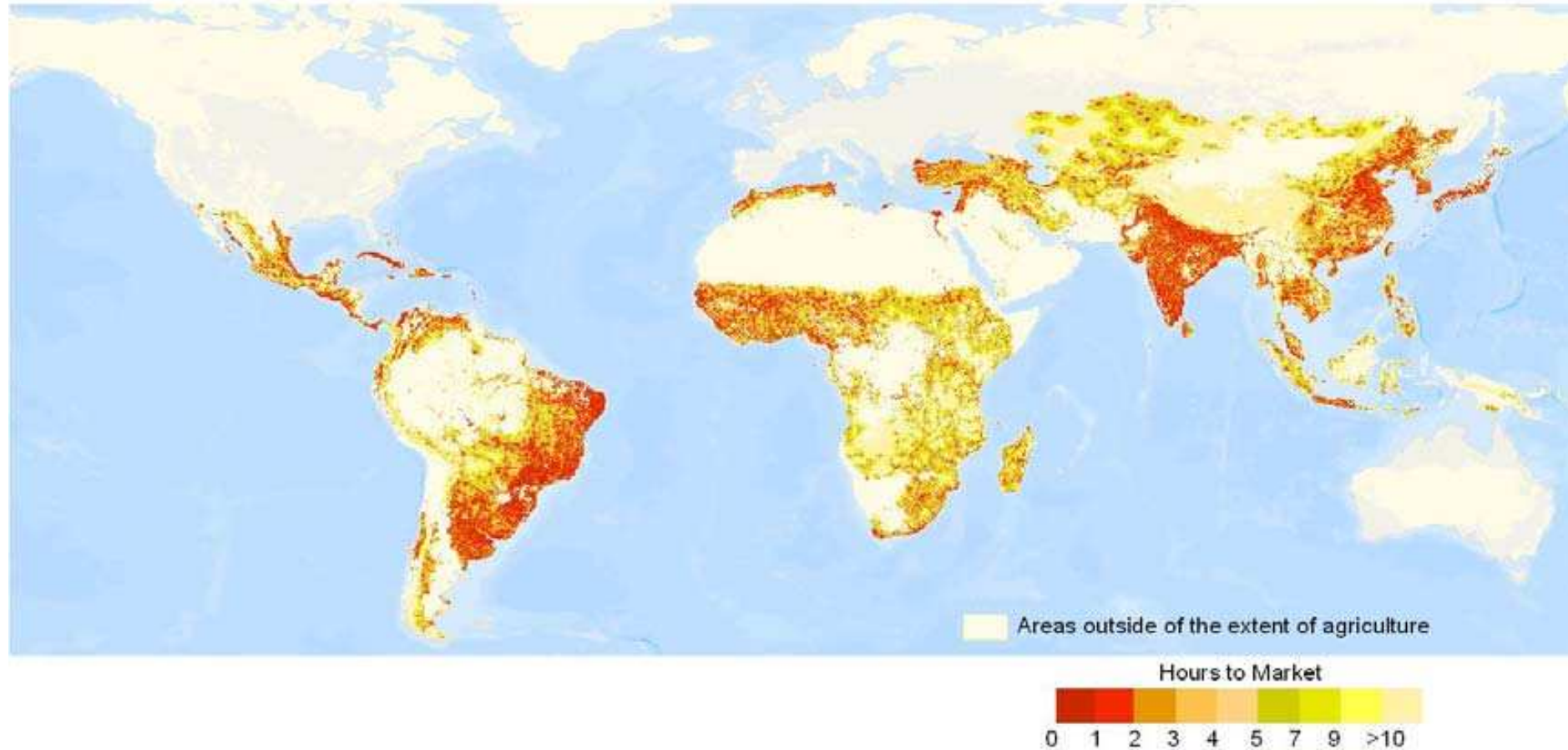


Notes: SSA: Sub Saharan Africa, SAS: South Asia, EAP: East Asia Pacific, MNA: Middle East and North Africa, LAC: Latin America and Caribbean.

Source: FAO (2006a).

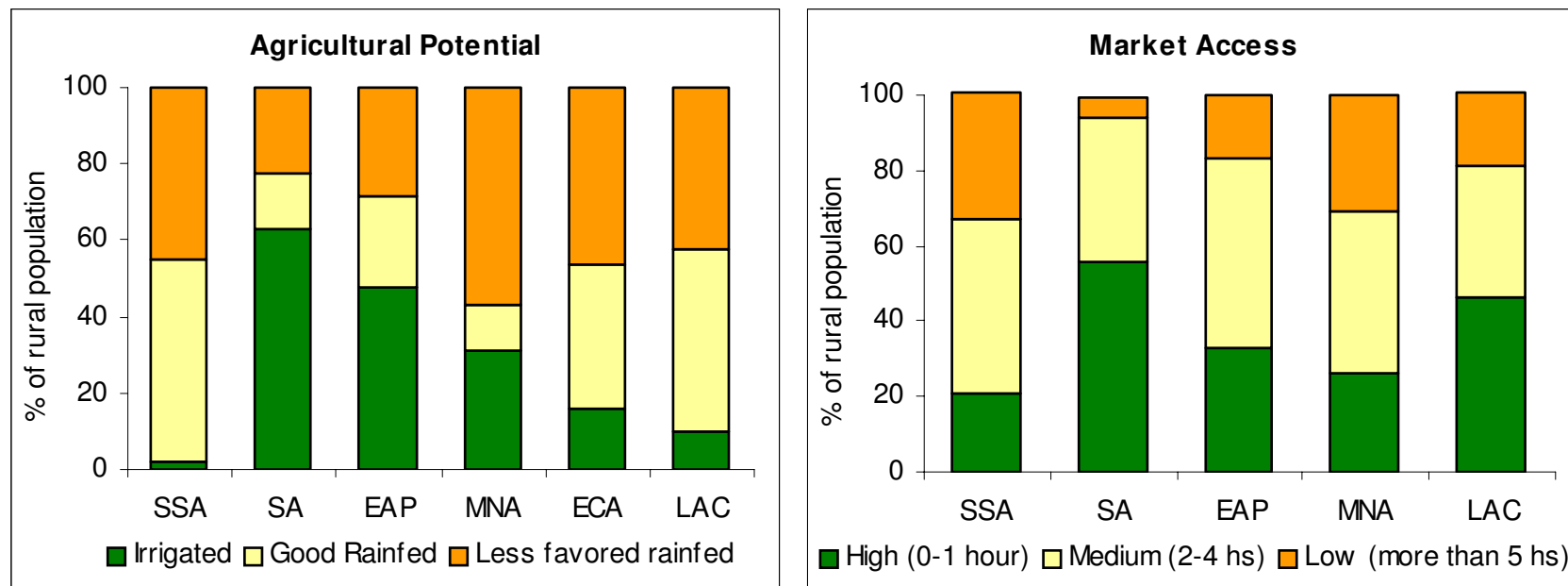
- African farmers are far from markets

**Map 2.2 Market access within the extent of agriculture for Africa, Asia and Latin America**



- SSA: poor irrigation and far from markets

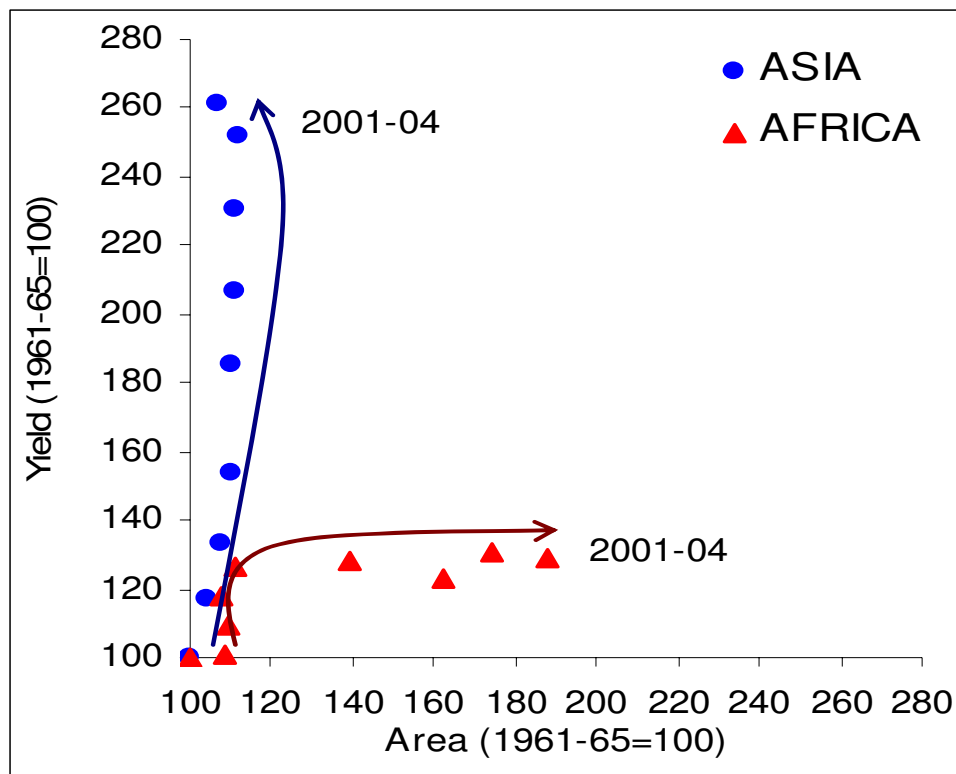
**Figure 2.5 Diverse agricultural potential and varying distances to markets (2000)**



*Notes:* SSA: Sub Saharan Africa, SAS: South Asia, EAP: East Asia Pacific, MNA: Middle East and North Africa, LAC: Latin America and Caribbean. No data for market access are available for Europe and Central Asia

- No green revolution in SSA

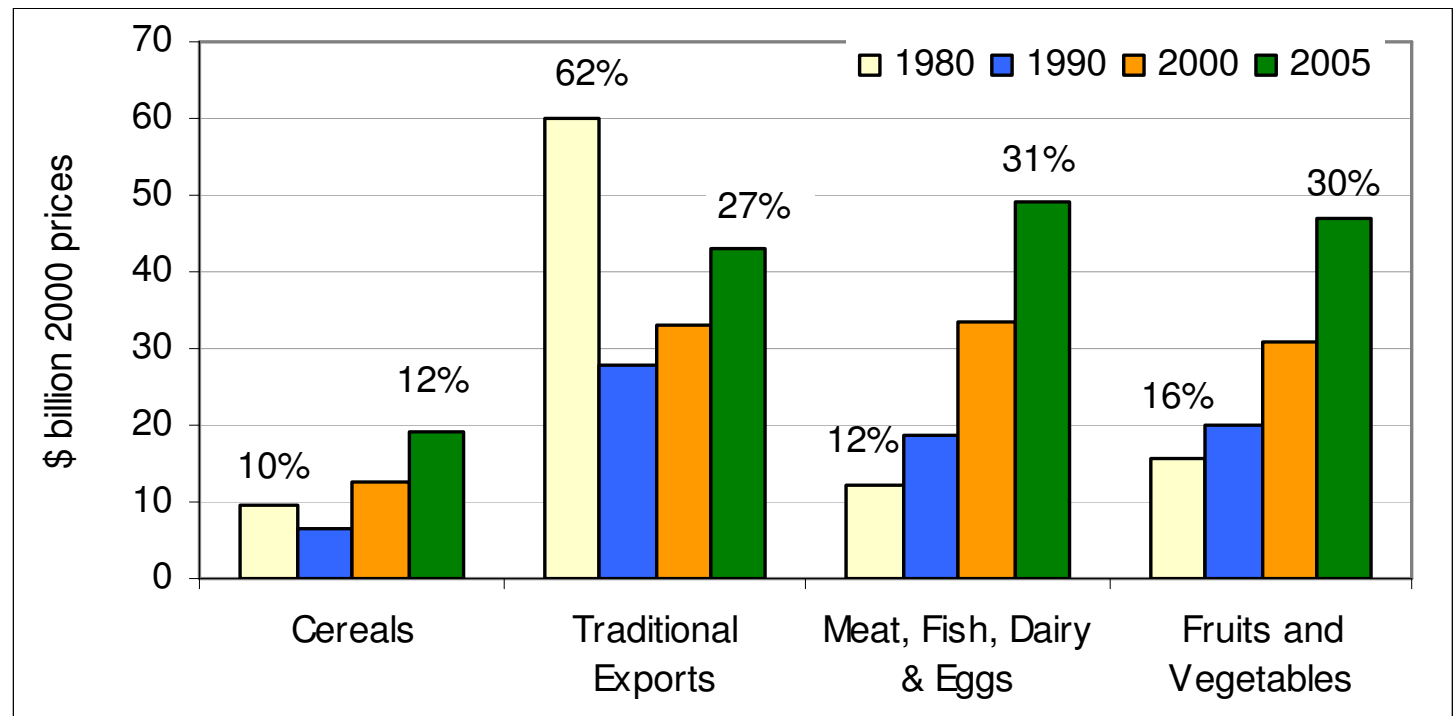
**Box figure A Expansion of cereal production has followed very different paths in Sub-Saharan Africa and Asia (1961-65 =100)**



*Note:* Each point represents five-year averages, starting with 1961-65 =100.

- Alternative: High value products

**Figure 2.11 High value exports up—traditional exports down in developing countries**

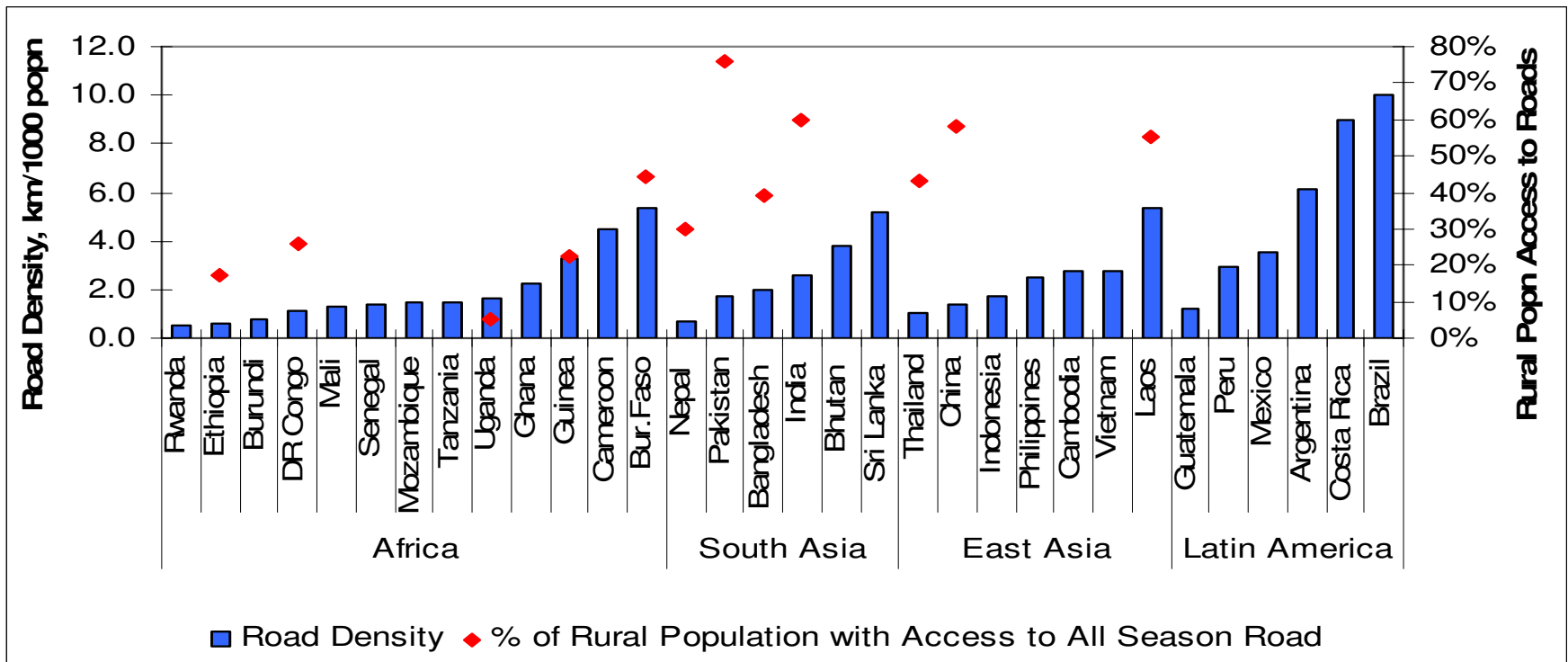


*Notes:* Traditional exports include cocoa, tea, coffee, rubber, tobacco, sugar, cotton and spices. Percent numbers represent the share in total exports

## 1.4 Access to markets

- SSA has limited access to roads

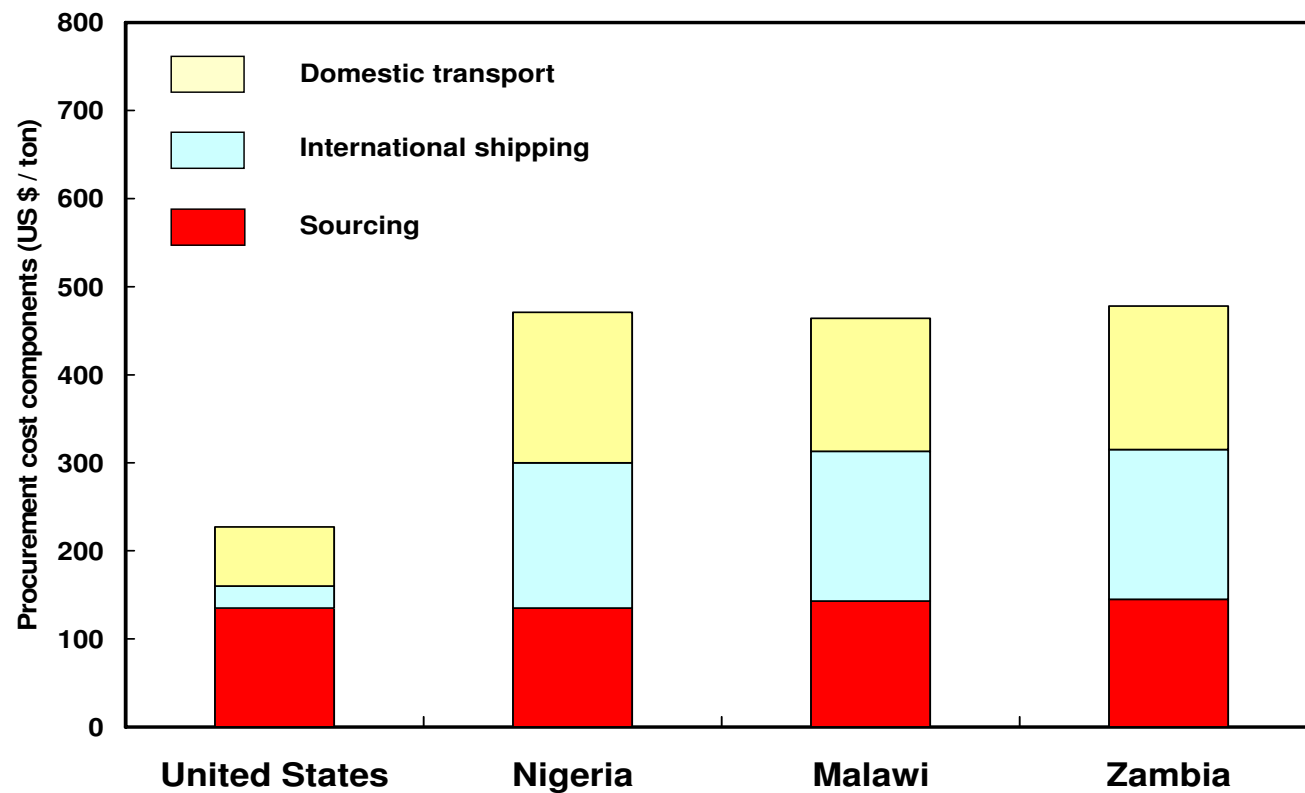
**Figure 5.1 Access to roads is limited in many low-income countries**



Source: World Bank Transport Database.

- ...creating high transport costs

**Figure 6.2 Transport costs can make up two-thirds or more of the farmgate price of fertilizer in Africa countries, 2005**



- Policy options for market integration

**Table 5.1 Public and private options for strengthening farmer linkages to the market**

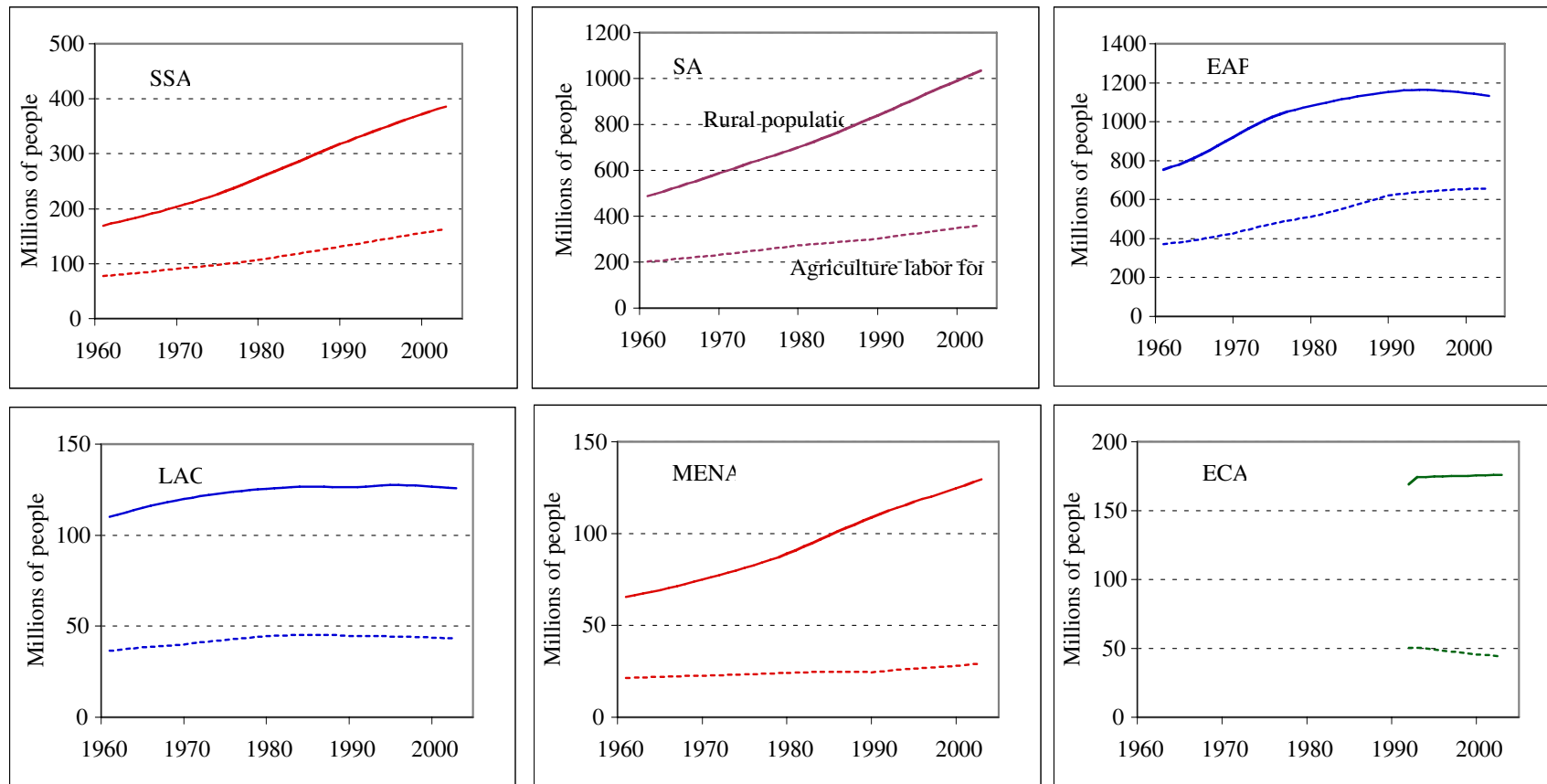
Issue	Public sector		Private sector
	Public investments	Policy environment	
Lack of access to markets	<ul style="list-style-type: none"> <li>● Investment in education, rural infrastructure (roads, markets, electricity, irrigation); support formation of farmer organizations</li> </ul>	<ul style="list-style-type: none"> <li>● Liberalize domestic trade; foster development of input and credit markets</li> </ul>	Assist farmers in forming farmer organizations
Weak technical capacity	<ul style="list-style-type: none"> <li>● Support market oriented extension</li> </ul>	<ul style="list-style-type: none"> <li>● Foster environment for private extension participation</li> </ul>	<ul style="list-style-type: none"> <li>● Provide extension and key inputs to farmers</li> </ul>
Meeting quality standards	<ul style="list-style-type: none"> <li>● Support farmer training on good agricultural practices for quality enhancement</li> </ul>	<ul style="list-style-type: none"> <li>● Establish grades and standards</li> </ul>	<ul style="list-style-type: none"> <li>● Supply inputs and train farmers on quality management</li> </ul>
Meeting contract conditions	<ul style="list-style-type: none"> <li>● Train firms in contract design and management; train farmers on their rights and obligations</li> </ul>	<ul style="list-style-type: none"> <li>● Foster institutions for dispute resolution; strengthen producer organizations</li> </ul>	<ul style="list-style-type: none"> <li>● Foster trust; develop contracts that are self-enforcing</li> </ul>
Farmer exposure risk	<ul style="list-style-type: none"> <li>● Foster development of commodity and futures exchanges; train firms on use of market instruments to hedge risk.</li> </ul>	<ul style="list-style-type: none"> <li>● Create enabling environment for insurance market</li> </ul>	<ul style="list-style-type: none"> <li>● Use contracts which share risk equally among parties, assist farmers to access insurance</li> </ul>

*Source:* Adapted from World Bank (2007).

## 1.5 Agricultural labor and income

- Agriculture alone cannot absorb rural workers

**Figure 9.1 Agriculture is not absorbing new rural workers**



Source: FAOSTAT.

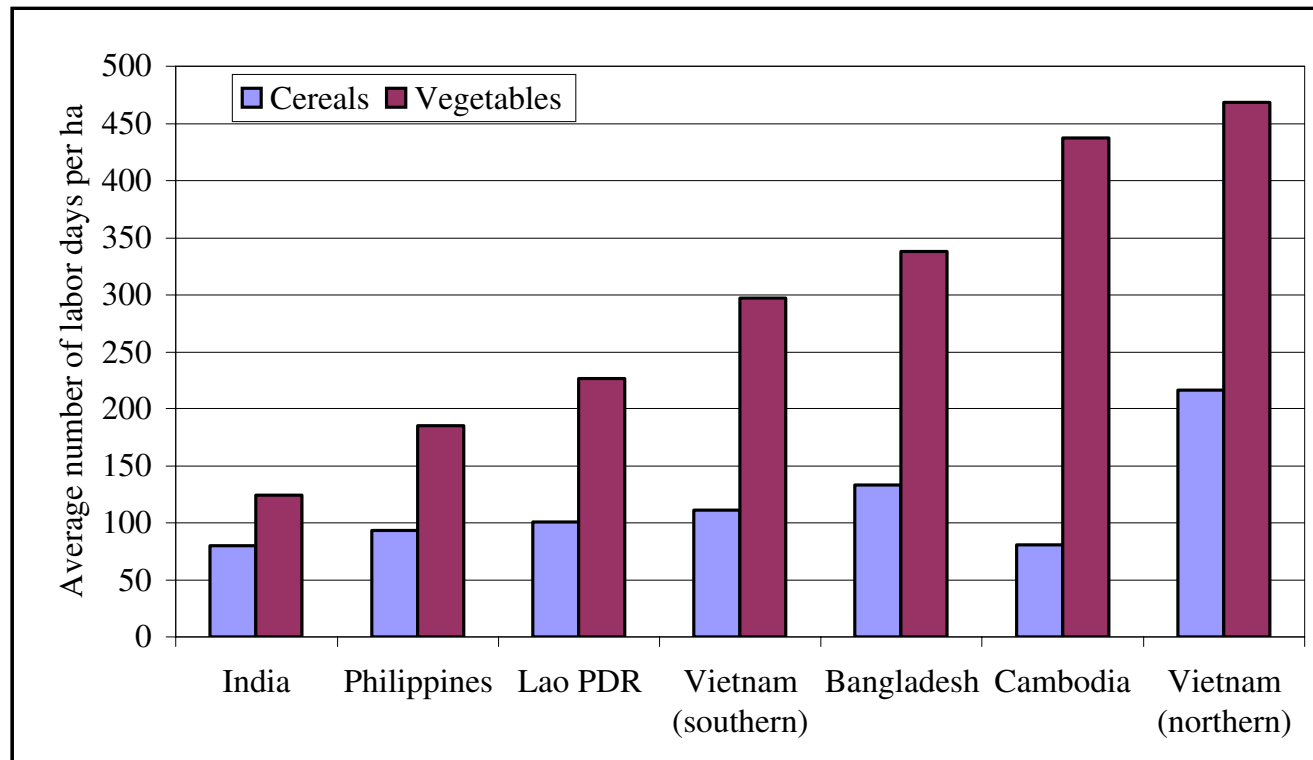
- Diversified sources of income

**Table 9.1 The rural economy exhibits diversified sources of income**

	Income shares			
	Agricultural income		Non-agricultural	Transfers and others
	On farm	Wage		
Ethiopia 1999	0.74		0.08 <sup>b</sup>	0.18
Ghana 1998 <sup>a</sup>	0.59	0.02	0.36	0.03
Malawi 2004 <sup>a</sup>	0.67	0.08	0.22	0.04
Nigeria 2004 <sup>a</sup>	0.55	0.13	0.30	0.01
Zambia 2003	0.65		0.16 <sup>b</sup>	0.17
Ecuador 1998 <sup>a</sup>	0.20	0.30	0.46	0.04
El Salvador 2001	0.17	0.09	0.55	0.18
Guatemala 2000 <sup>a</sup>	0.18	0.18	0.51	0.13
Nicaragua 2001 <sup>a</sup>	0.27	0.20	0.46	0.07
Panama 2003 <sup>a</sup>	0.16	0.13	0.60	0.10
Peru 1997	0.49	0.07	0.44	n.a.

- High value products and labor demand

**Figure 9.5 Labor requirements are considerably higher for vegetables than for cereals**



*Source: Weinberger and Lumpkin (2005).*

## 2 Land tenure

## 2.1 Land distribution

**Table 3.2 Changes in farm size and land distribution**

Country	Period	Land distribution Gini		Average farm size (ha)		Change total no of farms	Change total area	Land type*
		Start	End	Start	End	% Δ	% Δ	
<b>Decreased farm size, increased inequality</b>								
Bangladesh	1977-96	43.1	48.3	1.4	0.6	103	-13	Total
Pakistan	1990-00	53.5	54.0	3.8	3.1	31	6	Total
Thailand	1978-93	43.5	46.7	3.8	3.4	42	27	Total
Ecuador	1974-00	69.3	71.2	15.4	14.7	63	56	Total
<b>Decreased farm size, decreased inequality</b>								
India	1990-95	46.6	44.8	1.6	1.4	8	-5	Total
Egypt	1990-00	46.5	37.8	1.0	0.8	31	5	Total
Malawi	1981-93	34.4	33.2†	1.2	0.8	37	-8	Cultivated
Tanzania	1971-96	40.5	37.6	1.3	1.0	64	26	Cultivated
Chile	1975-97	60.7	58.2	10.7	7.0	6	-31	Agricultural
Panama	1990-01	77.1	74.5	13.8	11.7	11	-6	Total
<b>Increased farm size, increased inequality</b>								
Botswana	1982-93	39.3	40.5	3.3	4.8	-1	43	Cultivated
Brazil	1985-96	76.5	76.6	64.6	72.8	-16	-6	Total
<b>Increased farm size, decreased inequality</b>								
Togo	1983-96	47.8	42.1	1.6	2.0	64	105	Cultivated
Algeria	1973-01	64.9	60.2	5.8	8.3	14	63	Agricultural

† Inequality obtained from the Malawi 2004-2005 household survey.

\* Total land area, Agricultural (crop and livestock) land area, or cultivated (planted) crop area.

Source: Anriquez and Bonomi (2007). Calculations based on agricultural censuses

## 2.2 Land rights

- Socially agreed rules about relationships among people.
- Multiple rights.
- Overlapping rights.
- Contradictory rights.
- Use rights versus transfer rights.
- Rights contingent on social status.
- Understood meanings within the group.

## Why are land rights important?

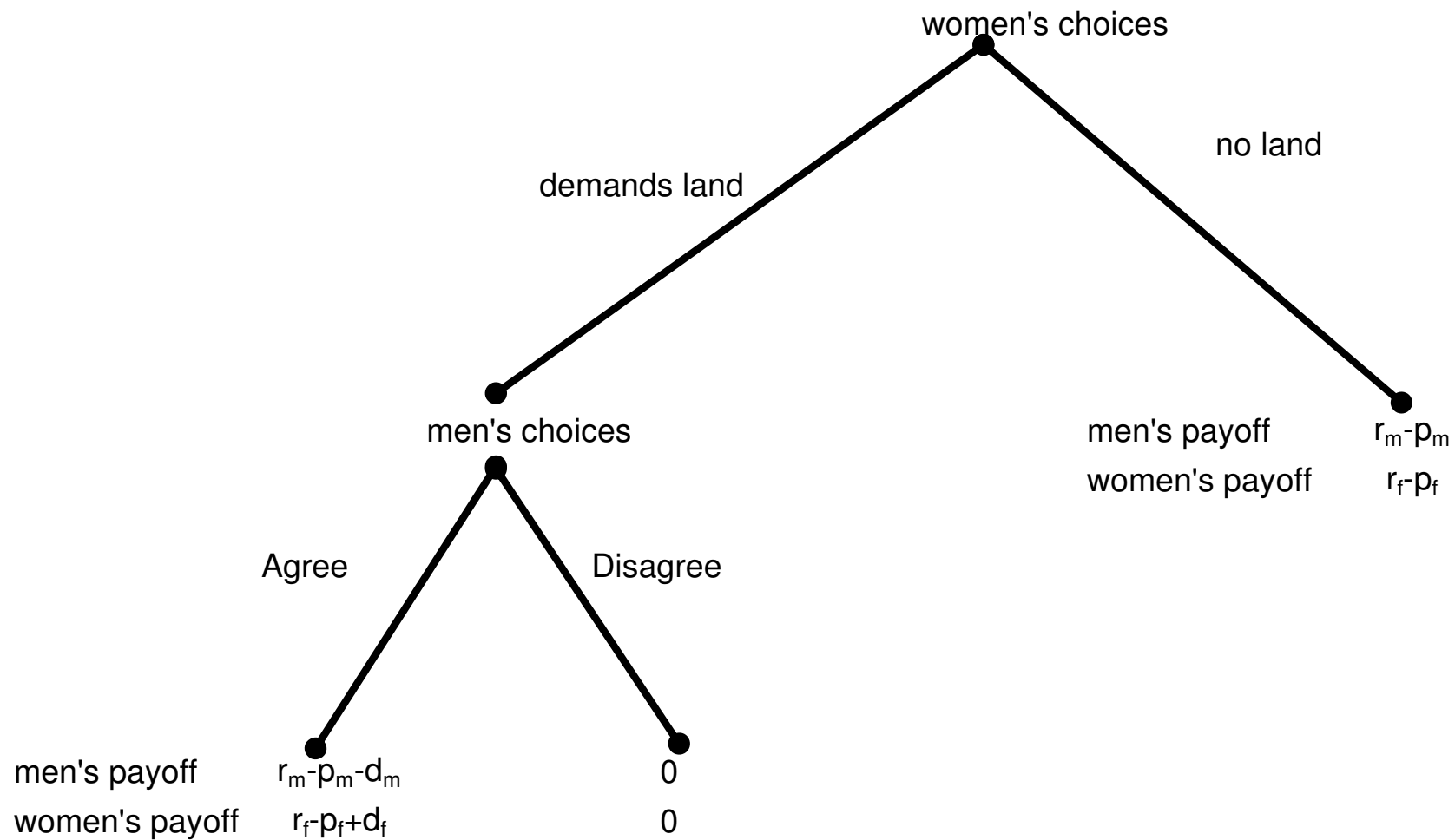
- Household are not monolithic institutions.
- Disagreement occur, just like in any collective decisions.
- There is evidence suggesting than men and women have different preferences over the education and health investments of their children.
- Fathers tend to invest more in boys, mothers in girls.
- How resources are allocated depends on the bargaining power of each spouse.
- And bargaining power could be related to income and options outside marriage. Why?

## 2.3 Marriage and land

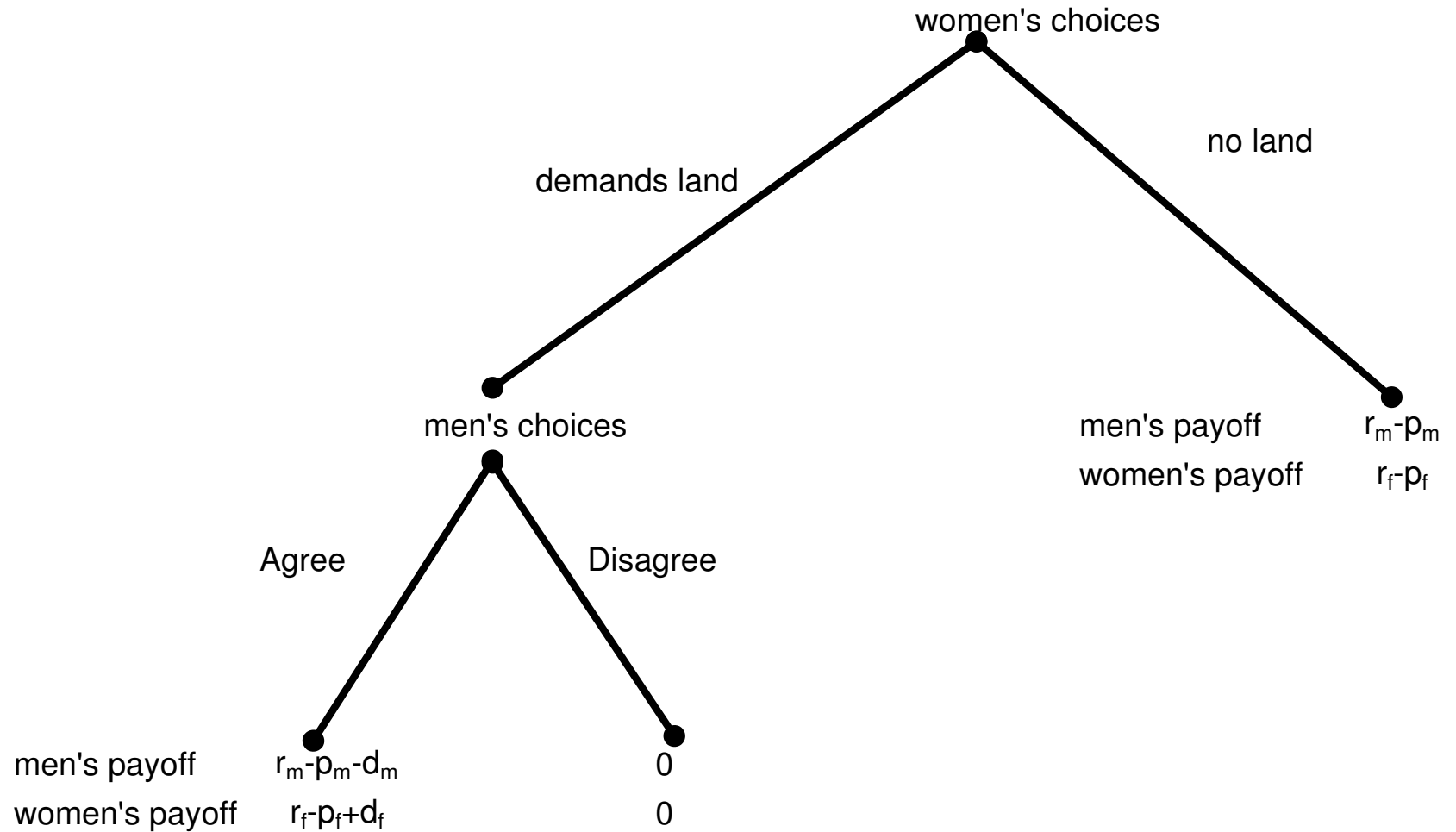
- Consider a marriage model.
- Assume that all men and women are identical within groups.
- Men and women are looking for “lifetime” partners.
- At marriage women earn  $r_f$  but have to give up  $p_f$ . (forgone entrepreneurship)
- Similarly, married men gain  $r_m - p_m$  where  $p_m$  is the cost of marriage.

- Now consider the case where women can demand land from men as part of the marriage negotiation.
- If men agree to give women land, men lose  $d_m$  (lack of optimality in resources) and women earn  $d_f$  (earnings from agriculture.)
- What is then the optimal strategy for women and men?

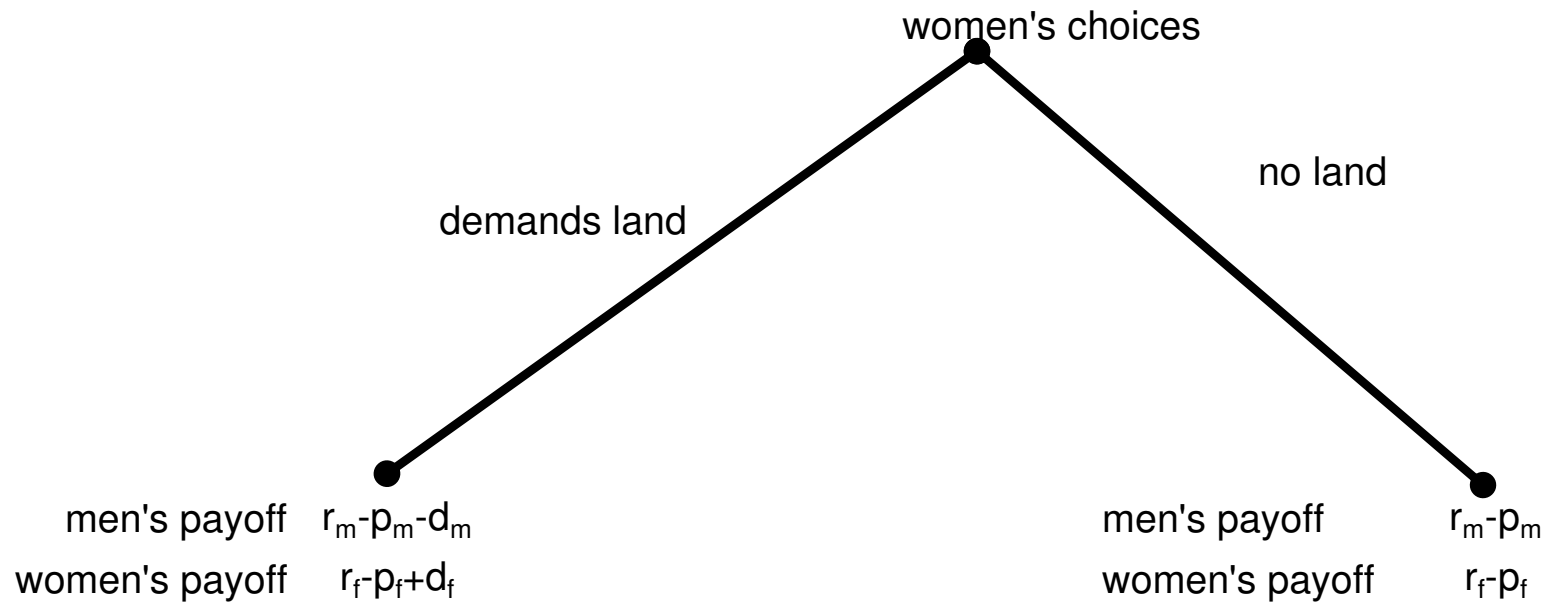
- Decision tree



- What is best for men?...if asked, give land.



- What is best for women?...Ask for land.



## Sources

- Unless otherwise notice, all figures and tables come from the World Development Report 2008.
- The final version if available here  
<http://www.worldbank.org/wdr2008>