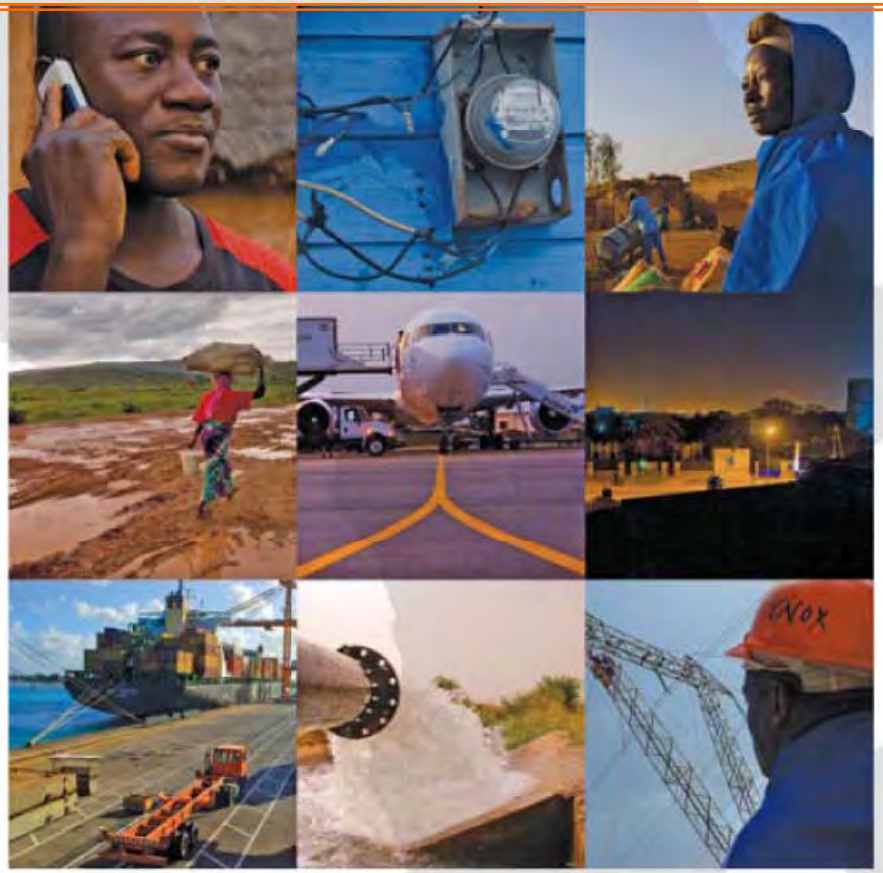
Africa's Infrastructure:
A Time for Transformation



Vivien Foster & Cecilia Briceño-Garmendia,
World Bank

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Africa Infrastructure Country Diagnostic: a multi-stakeholder effort

Banque Africaine de Developpement

African Union

Agence Française de Développement

Development Bank of Southern Africa

Department for International Development

European Union

The Infrastructure Consortium for Africa

Kreditanstalt für Wiederaufbau

The New Partnership for Africa's Development

Public-Private Infrastructure Advisory Facility

Sub-Saharan Africa Transport Project

The World Bank

Water and Sanitation Program

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Key Message #1

Challenge of developing rural infrastructure particularly large

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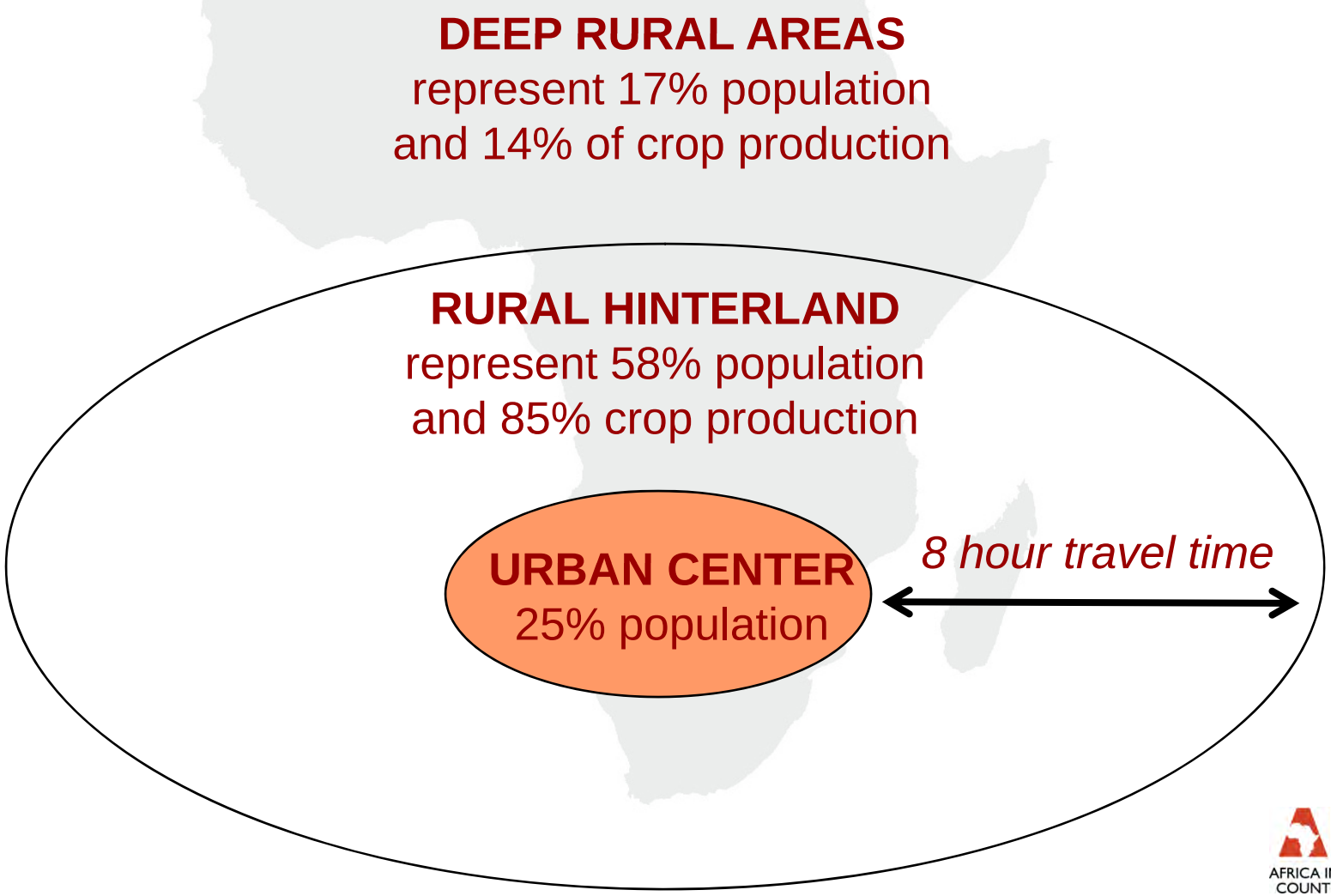
Emerging evidence of a virtuous circle linking urban and rural development



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Low rural coverage reflects high cost, low affordability, and limited investment

- Infrastructure coverage in urban areas five to ten times higher than in rural areas (but still low)
- Costs of developing infrastructure increases dramatically as population density declines
  - US$600 pc (urban) versus US$6,000 pc (deep rural)
- Even allowing for appropriate technologies, affordability of infrastructure declines dramatically
  - One annual budget (urban) versus ten (deep rural)
- One third of rural infrastructure needs rehabilitation compared with one quarter elsewhere
- Historically only about 20% of public investment in infrastructure channelled to rural space

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Key Message #2

Cost of improving very low levels of rural accessibility rises exponentially

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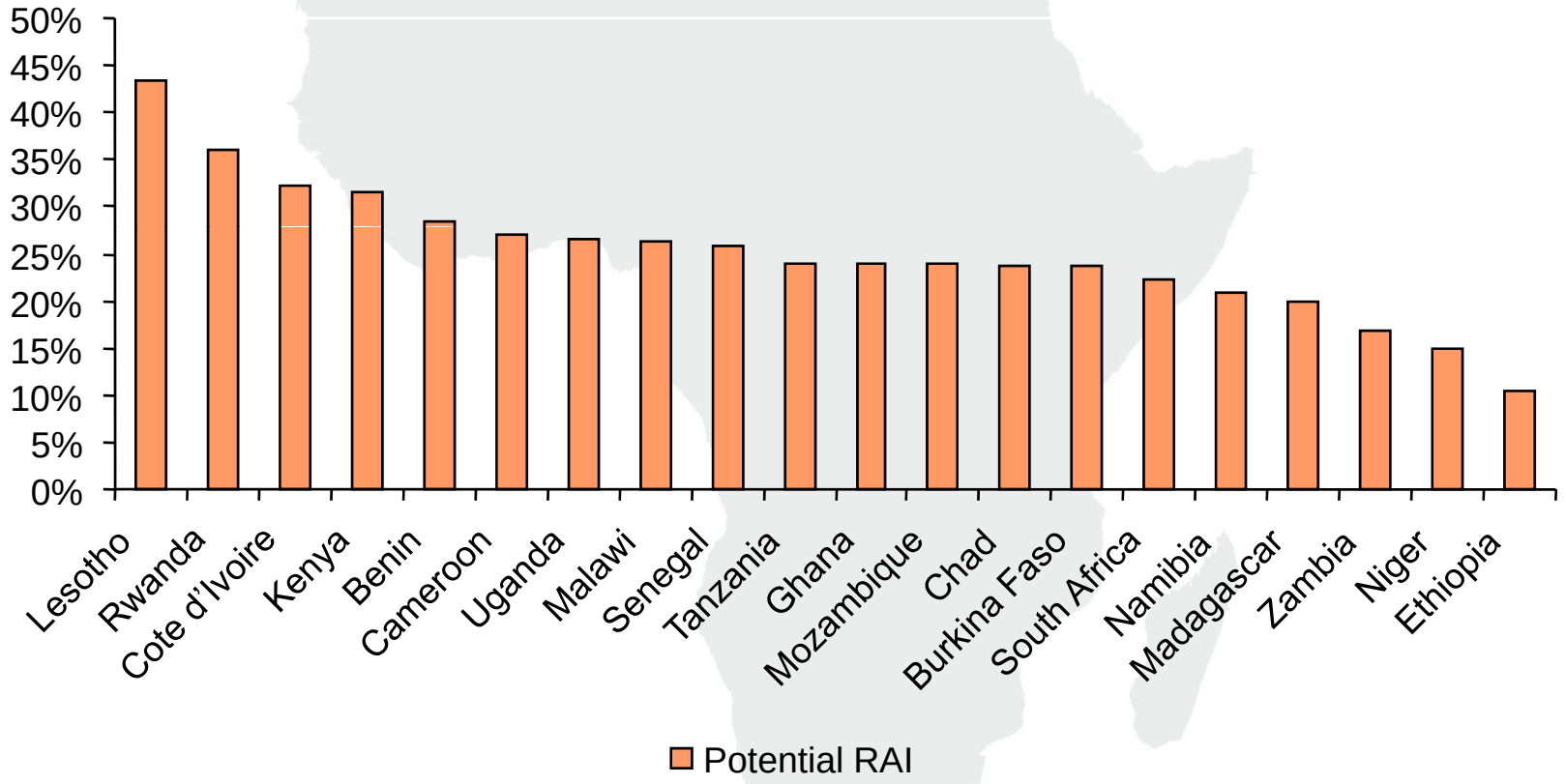
Only one third of rural Africans has access to an all season road – less in many cases



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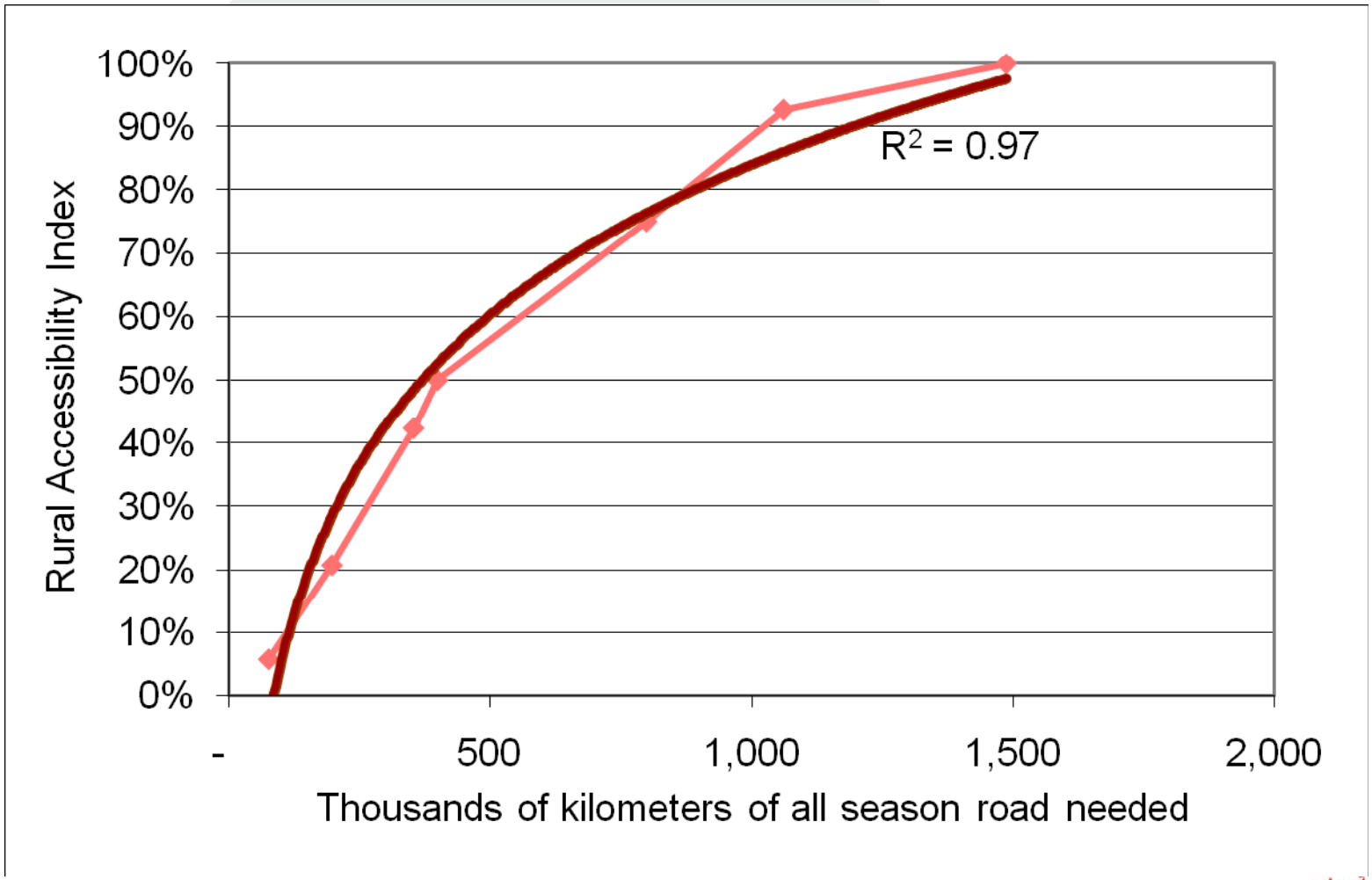
Network would need to triple in length to meet 100% RAI costing US$10bn pa



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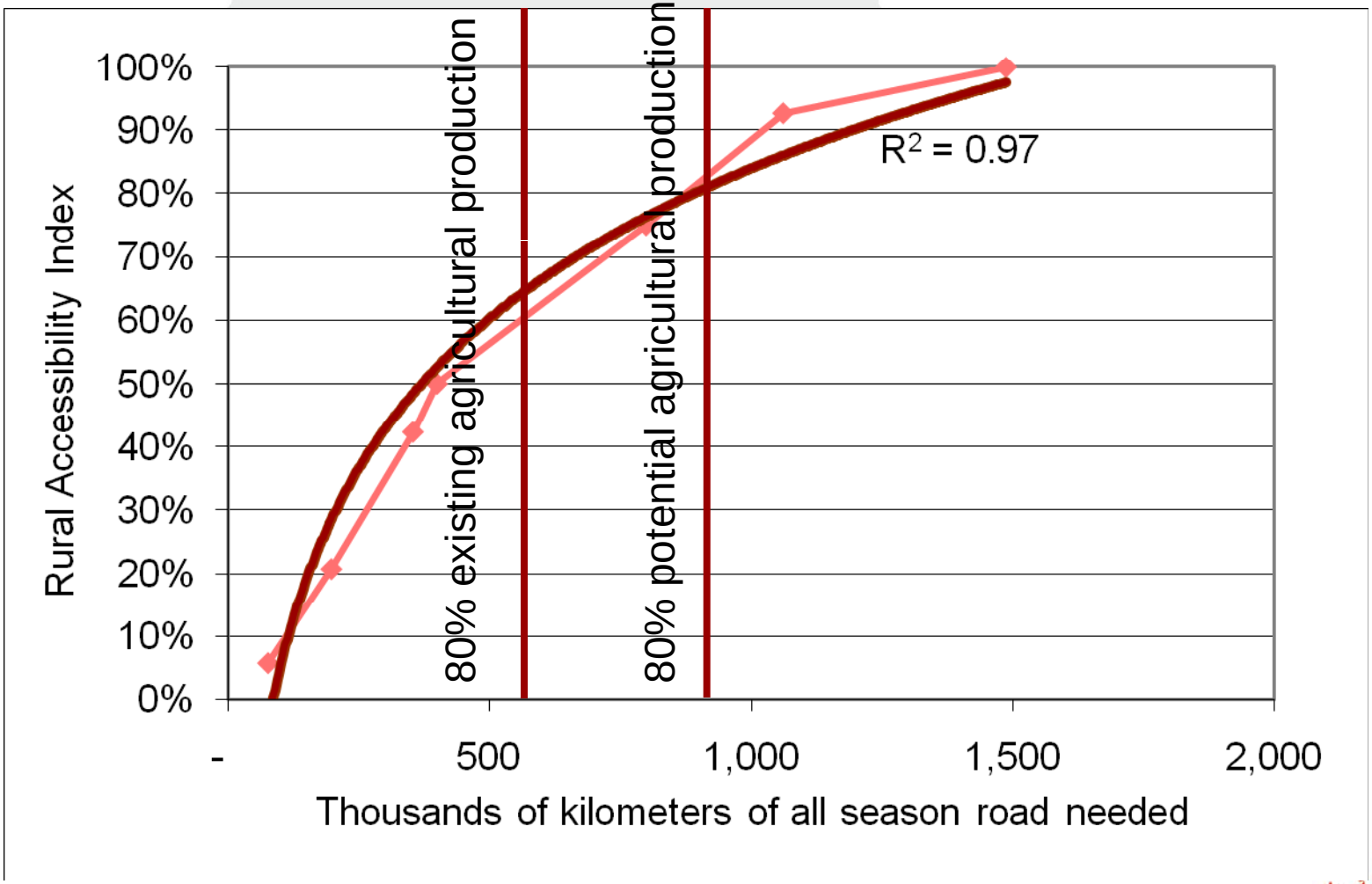
Focus on connecting high value agricultural land keeps costs down to US$2.5 billion



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Key Message #3

Economically viable to double current irrigated area but sensitive to costs

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Major increase in irrigated area desirable with small schemes playing a major role

- Irrigation currently confined to handful of countries
- 4% of land produces 20% of agricultural value
- Major potential for economically viable expansion
- Viability highly sensitive to (storage) costs
- Bulk of potential lies in small scale schemes
- Investments up to 2000% agricultural spending
- Anticipated impacts
  - Dramatically reduce cereal imports
  - Prevent increases in malnutrition due to climate change

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About 7 million hectares of new irrigation potential – predominantly small scale

IRR threshold of 12%	Agricultural area (millions hectares)	Investment (US$billion pa)	Internal Rate of Return (%)
Small scale schemes	5.4	1.8	26
Large scale schemes	1.4	0.3	17
Total new schemes	**6.8**	**2.1**	**25**
Rehabilitating existing schemes	1.7	0.6	Na.
Total	**8.5**	**2.7**	**25**

Irrigation is mostly viable only for cash or high value food crops (horticulture) with revenues >US$2,000/ha/yr

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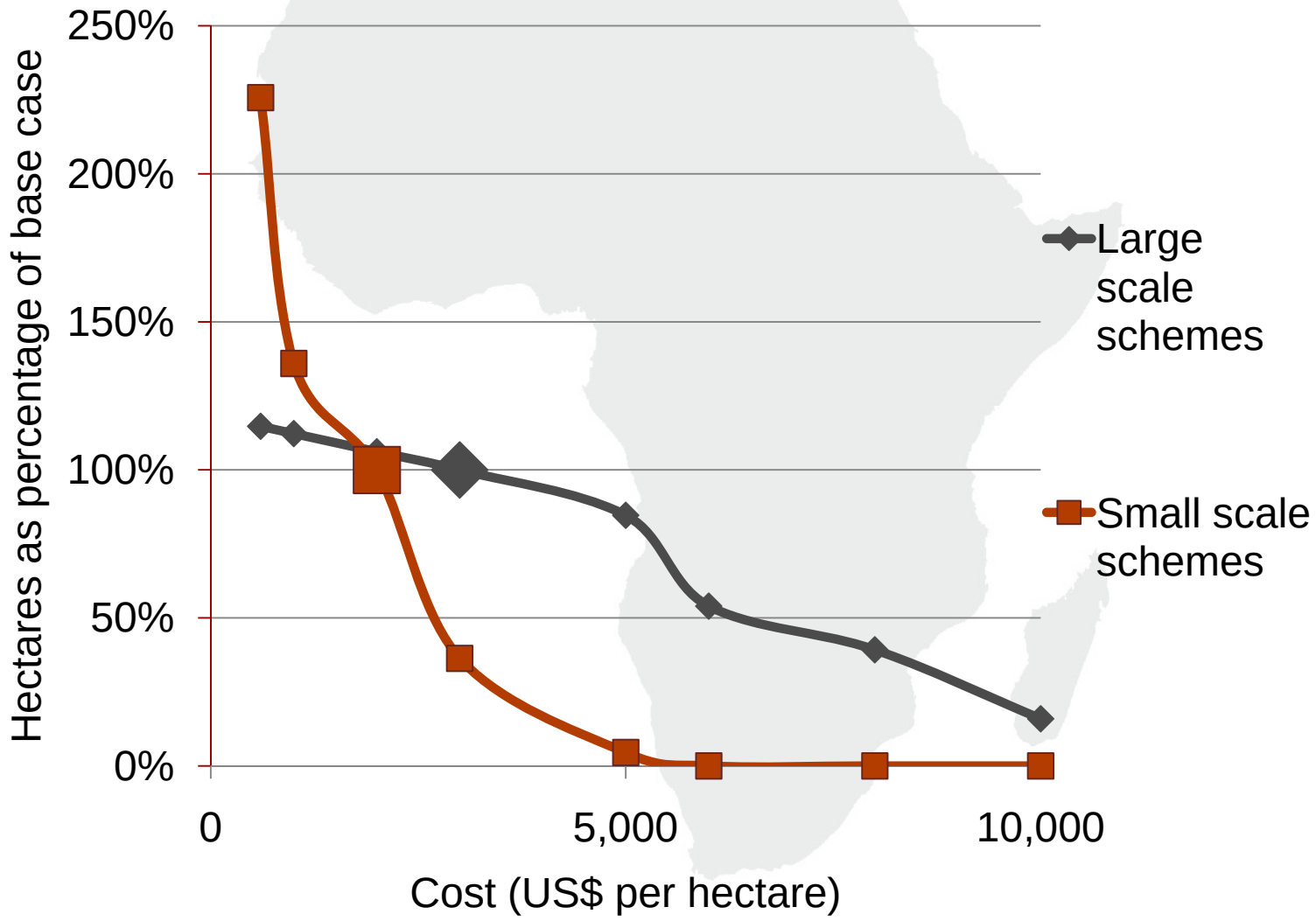
Small scale gives much higher returns, but potential area much more sensitive to cost



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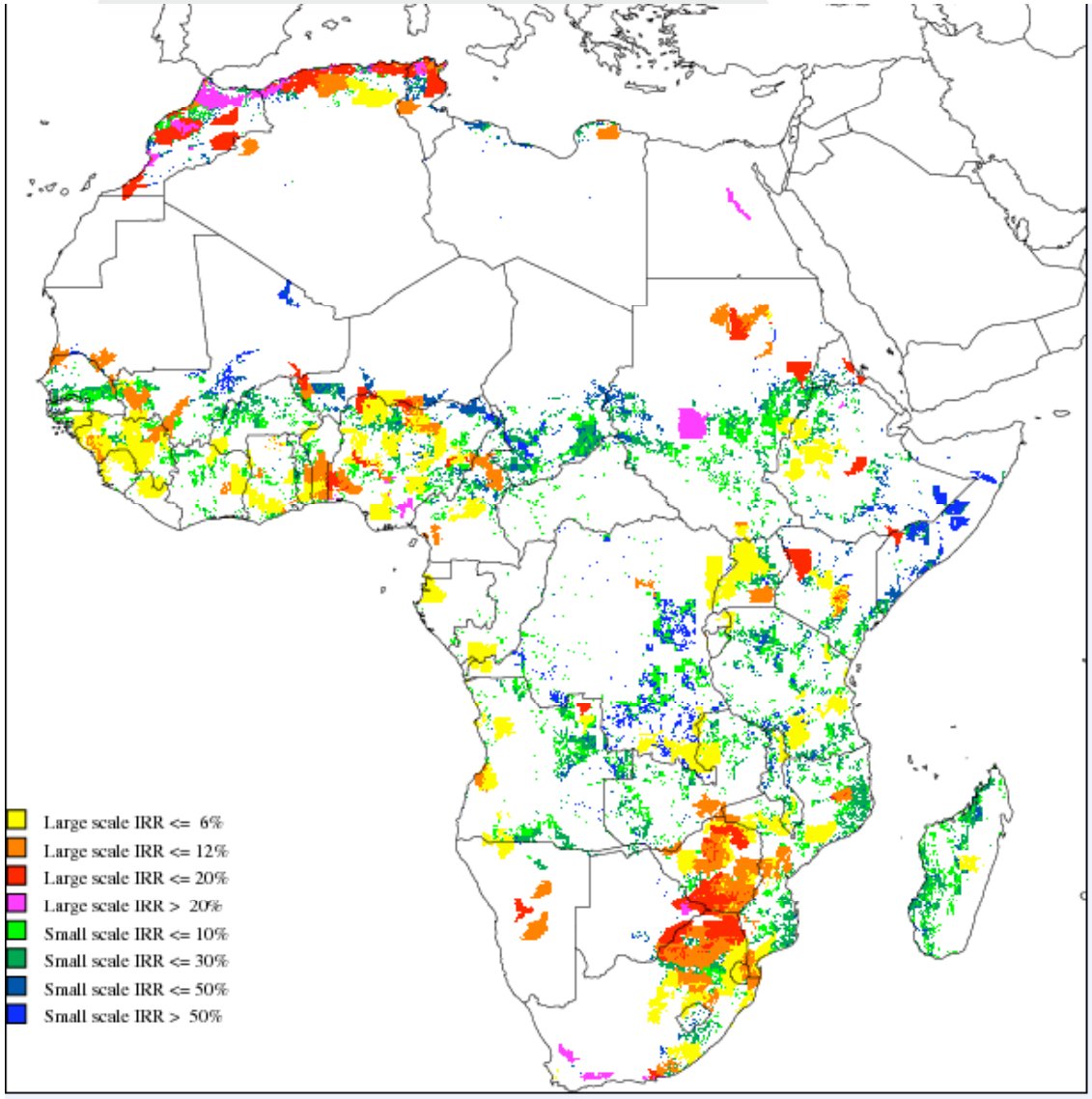
Spatial extension of large and small scale irrigation potential identified



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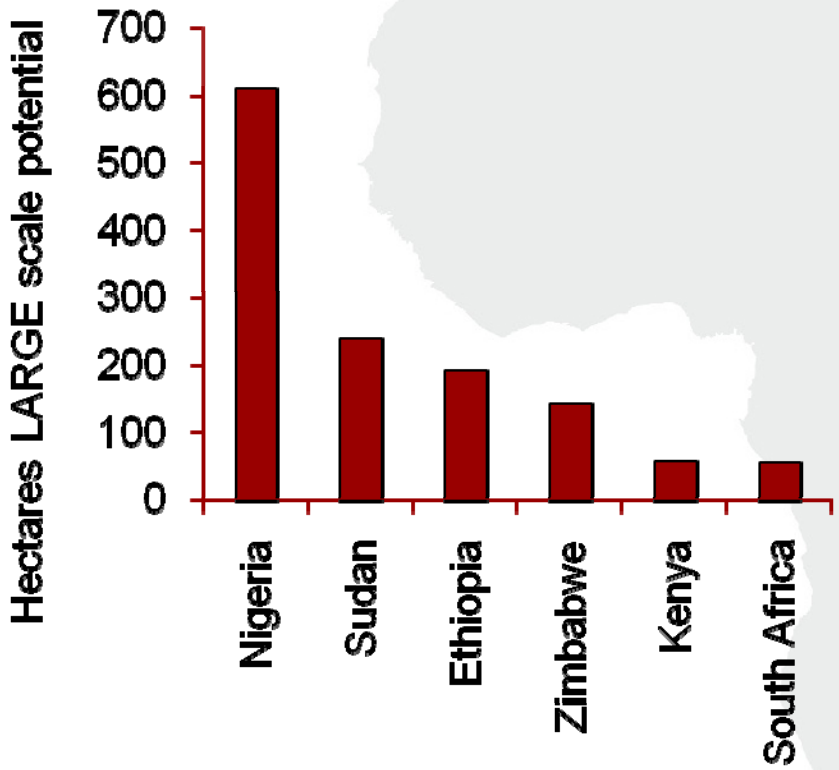
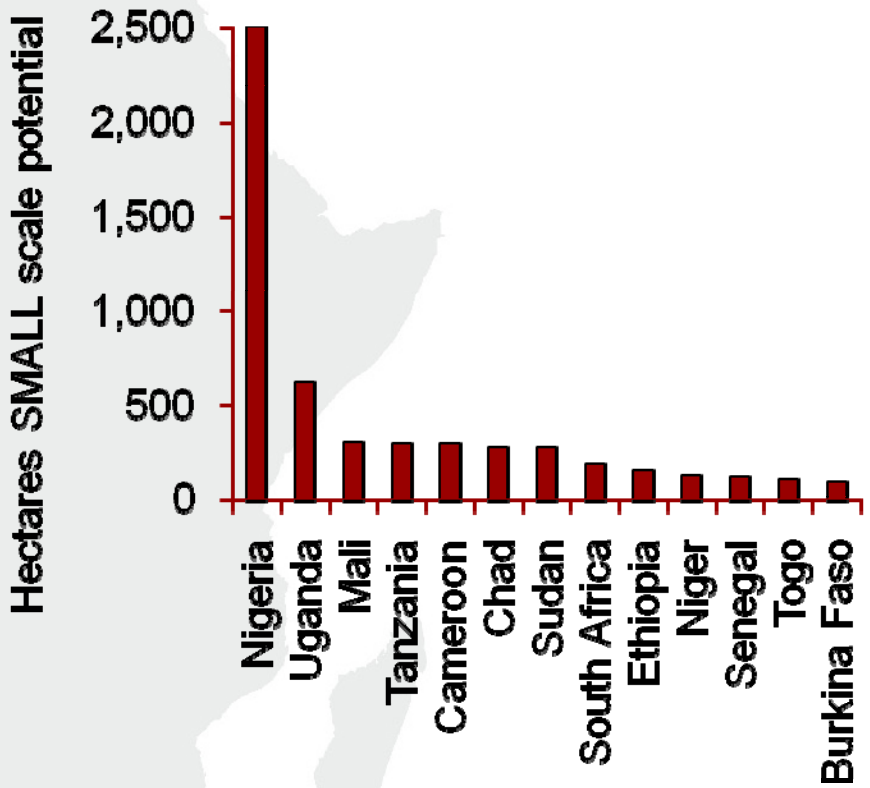
Irrigation potential concentrated in some 15 countries, most notably Nigeria





Note: graphs show all countries with more than 50,000 hectares of potential for large or small scale irrigation

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Key Message #4

Rural ICT coverage is already a reality ripe for further exploitation

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Huge expansion of rural ICT coverage needs to be harnessed for agriculture

- About half the rural population already lives within range of GSM signal (and rising)
- Price tag for universal GSM coverage very low relative to potential benefits (US$0.8bn pa)
- In a suitable regulatory environment, US$0.6bn pa could be provided by private sector to reach 95%
- Only US$0.2b pa of public subsidy would be needed to serve the remaining 5%
- GSM signal has major potential to distribute information products to farmers
  - Price data, weather forecasts, extension services

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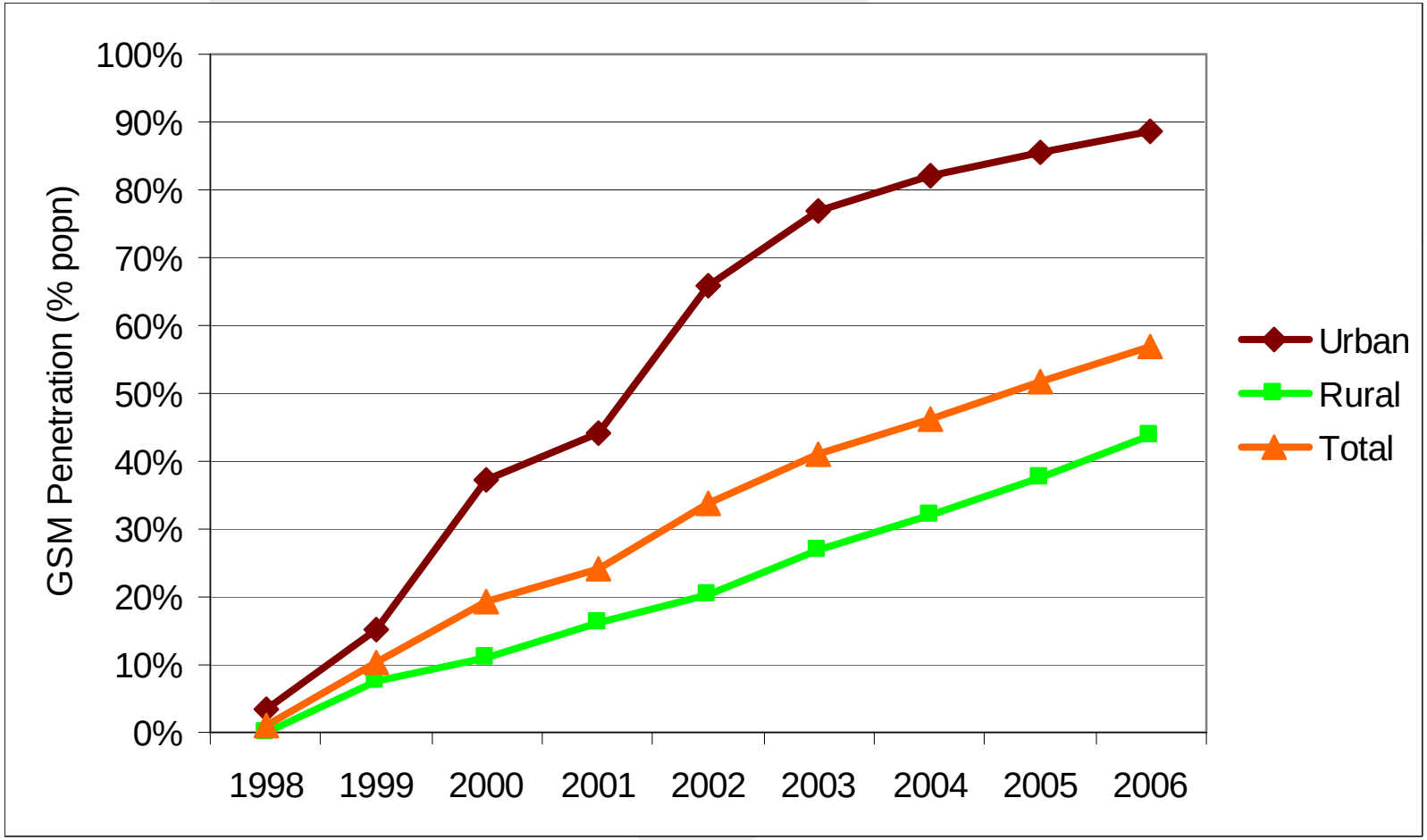
GSM footprint has come from nowhere in 1998 to reach about half rural population



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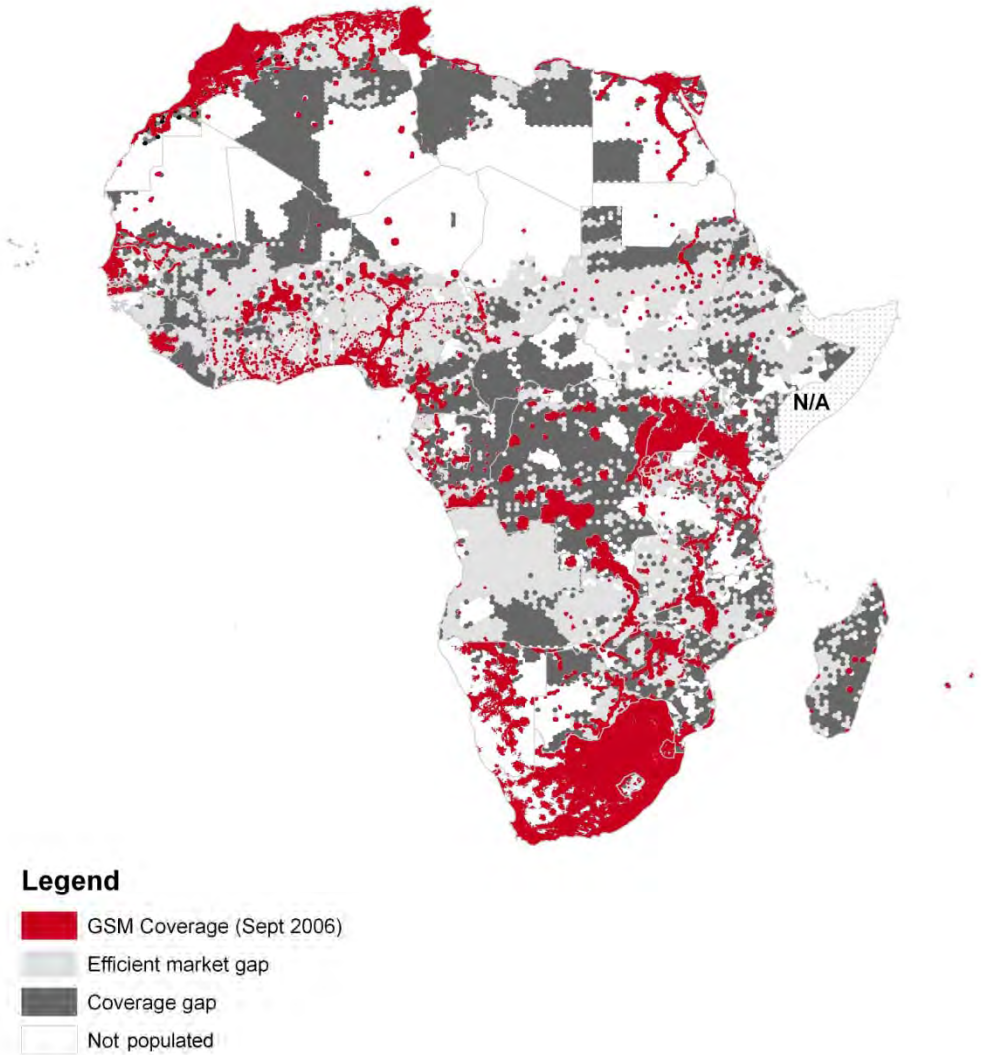
About 95% rural GSM coverage could be reached without public subsidy



Coverage gap (black area) represents 7.2% of total population

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Key Message #5

A long way to go before rural areas are electrified on any significant scale

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Fundamental sector issues need to be fixed before rural electrification can take-off

- Rural access to power only 12% and expanding by only 0.5% per year
- National power networks in state of crisis with supply shortages and very high costs
- Strong correlation in coverage between urban and rural areas
- In many countries half rural population lives more than 50 kilometers from sub-station
- Countries with rural electricity funds and agencies are doing significantly better on access

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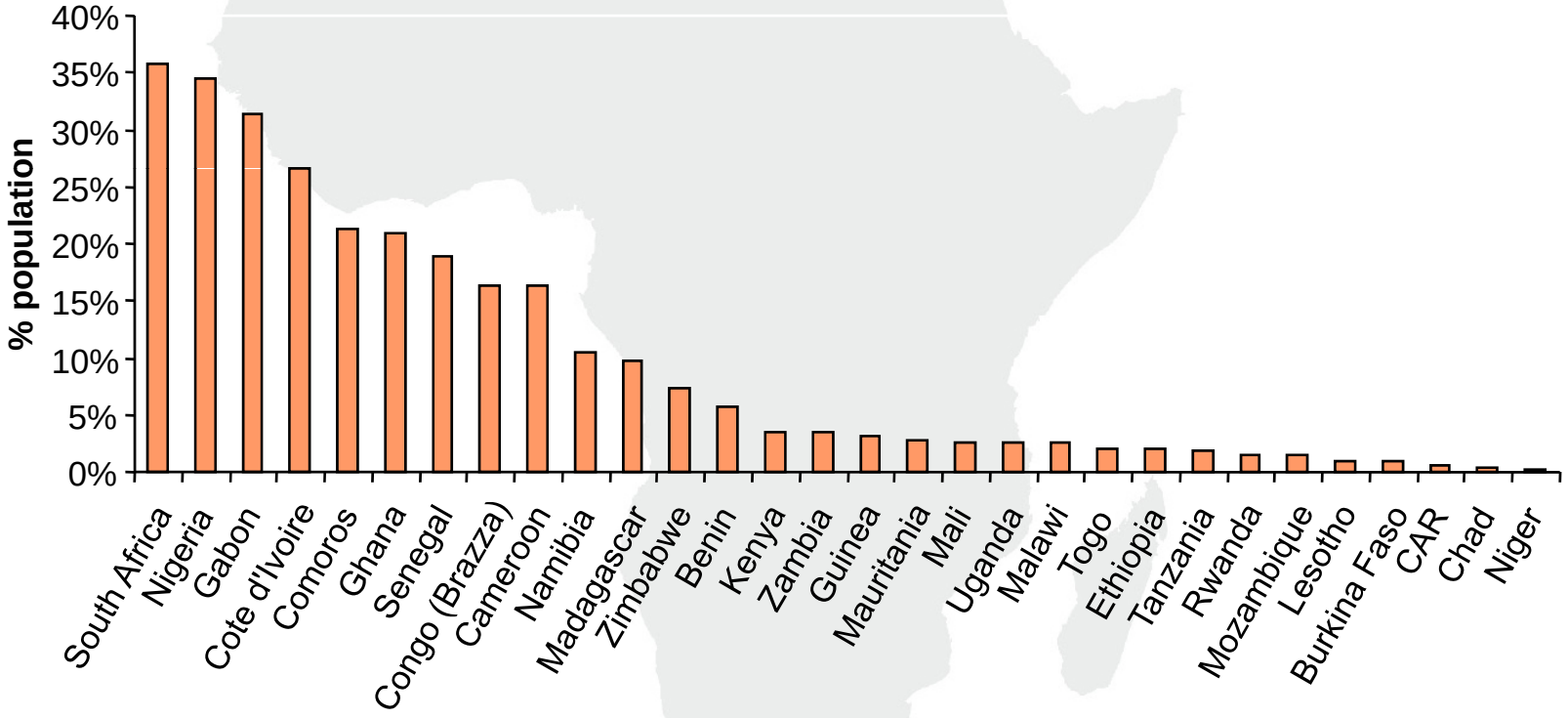
In many countries rural electrification rates remain below 5% population



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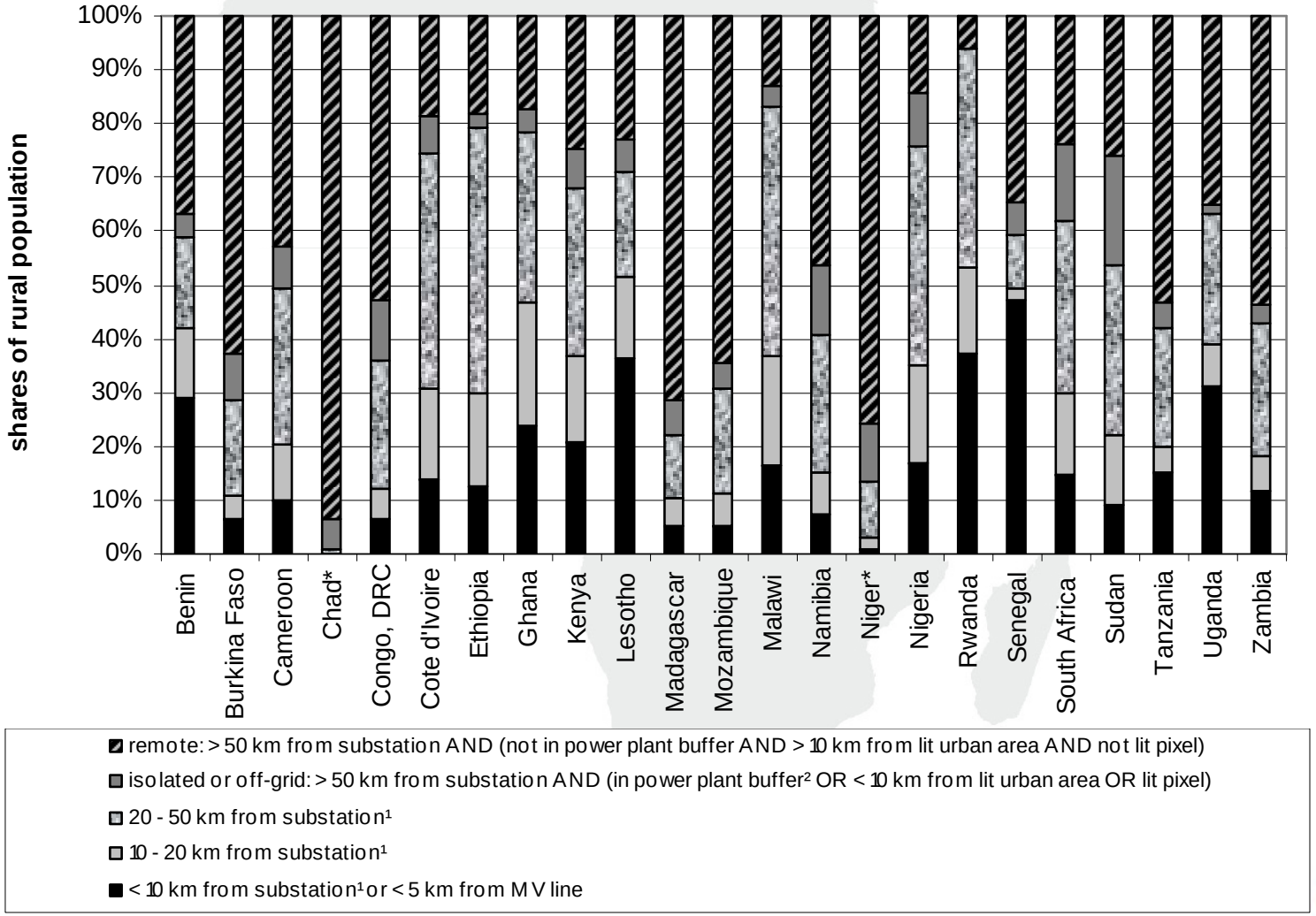
Within range of trunk power infrastructure: only 40% rural hinterland, 10% deep rural



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Key Message #6

Developing rural infrastructure platform would cost US$25bn pa for a decade

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Price tag for rural infrastructure targets

	Rural infrastructure target	US$bn pa
ICT	Universal access to GSM signal and public broadband	1.7
Irrigation	Develop an additional 7 million hectares (IRR>12%)	3.3
Power	Add 2.5 million new rural connections per year	3.9
Transport	Rural road connectivity to 80% agricultural production	2.5
WSS	Achieving MDG Targets	13.6
Total		**25.0**

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