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Potential of an Agriculture Carbon Facility for Africa

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Why Terrestrial Carbon in Africa?



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- Poverty, resource degradation, and rural livelihoods are highly correlated
 - > 60% of poor in ecologically vulnerable areas; 250 million face desertification
- Productivity in Africa's arid regions among lowest in the world: low agro-potential, minimal inputs, scarce markets & investment.



Feasibility Study



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Scope: i) identification agricultural practices and systems ii) key elements of investment/business case iii) clear approach and design attributes for institutions needed to bring the concept to reality

Partners/Funders: Partnering with Forest Trends, Ecoagriculture Partners, funding by Rockefeller Foundation

Outputs

- Feasibility study and design document for “African Agriculture Carbon Facility” concept
- Presentation at UN Climate Negotiations in Copenhagen COP 15 (2009)



Functions

- to create new vehicle for bringing carbon finance to Africa to enable low carbon agricultural approaches as well as carbon and environmental benefits
- to reduce timeline for project development to implementation
- to lower transaction costs, remove barriers

- African Agriculture has 17% of global potential
- GHG emissions reduced: 2.0–3.5 mtCO₂e/ha/ya
- 970mtCO₂e/yr by 2030; another 4% from forestry

Mitigation



- >\$3 billion, higher average annual aid to Africa
- Payments for ecosystem services radically change project level economics

Financial



- Increased ag yields
- Higher resilience to environmental stresses
- Higher quality, consistent harvests
- Reduced inputs over long-term

Co-benefits



Proposition



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Objective:

- Promote sustainable agriculture to increase resilience and food security in African rural landscape

Means:

- Have local communities and smallholders benefit from higher productivity, and climate finance payments, over the long-term.

Conditions:

- Carbon sequestration and/or reduced emissions
- Overcoming investment, technology, operational, cultural barriers

Instrument

- Design of a Facility that pioneers climate finance to build on existing efforts that scale improved ag practices in communities.

Barriers Financing GHG Activities



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Why does Africa have limited access to private/public financing for creation of rigorous mitigation projects & agricultural improvements?

- Aggregation and coordination of many small farmers across vast scales
- Lack of project methodologies or scientific certainty on permanence, MRV, GHG reductions/removals and co-benefits
- Technical and capacity constraints on domestic and regional institutions
- Few financing mechanisms accessible at project level; Poor market access
- Technical knowledge not well disseminated
- Country risk: legal, financial and political

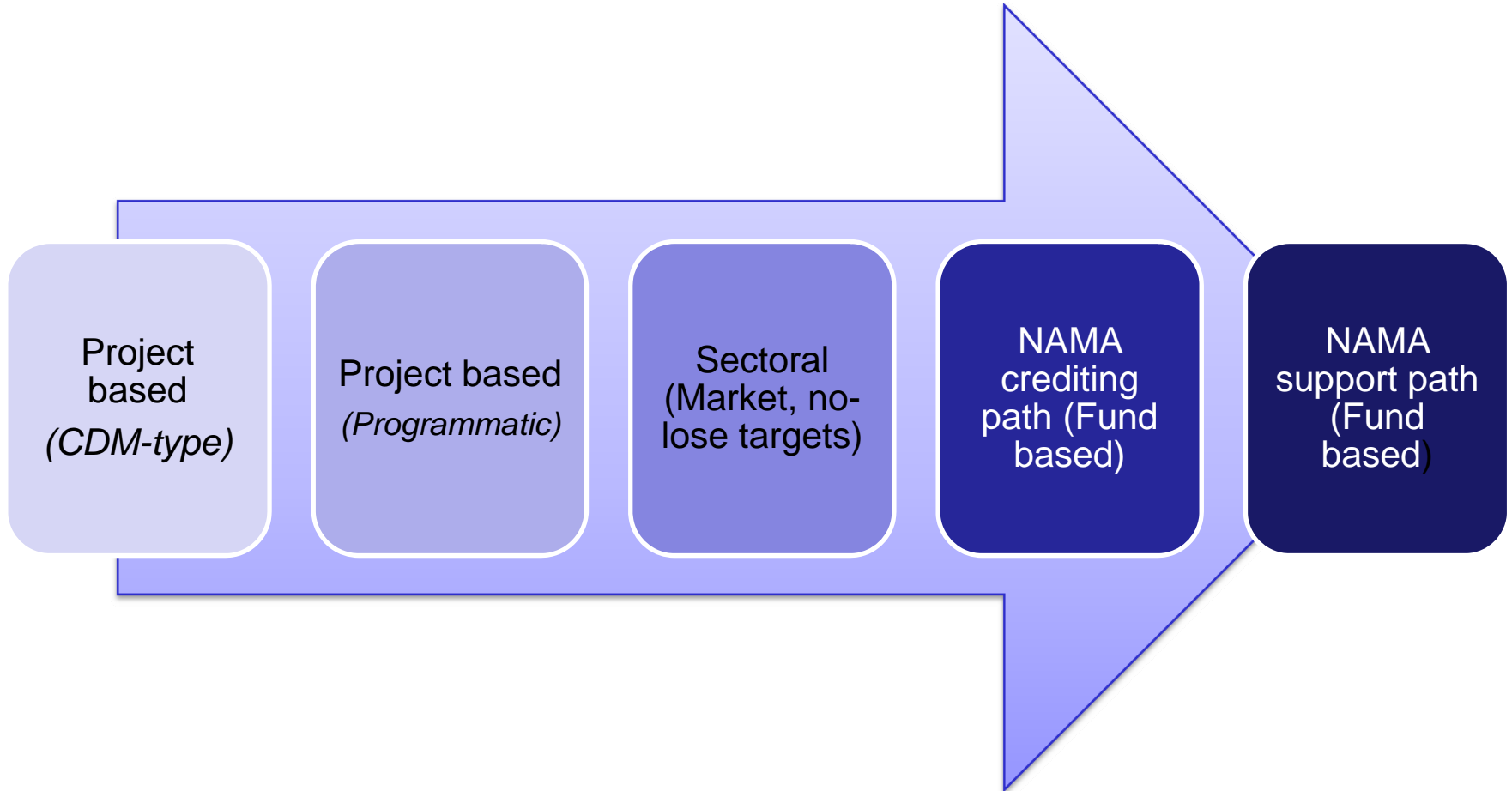
Still, there are opportunities.....

Strong demand for African credits; co-benefits of investments in SLM (carbon & co-benefits) are very high relative to other regions; strong additionality; lack of competition with Annex I countries/sectors.

Climate Finance

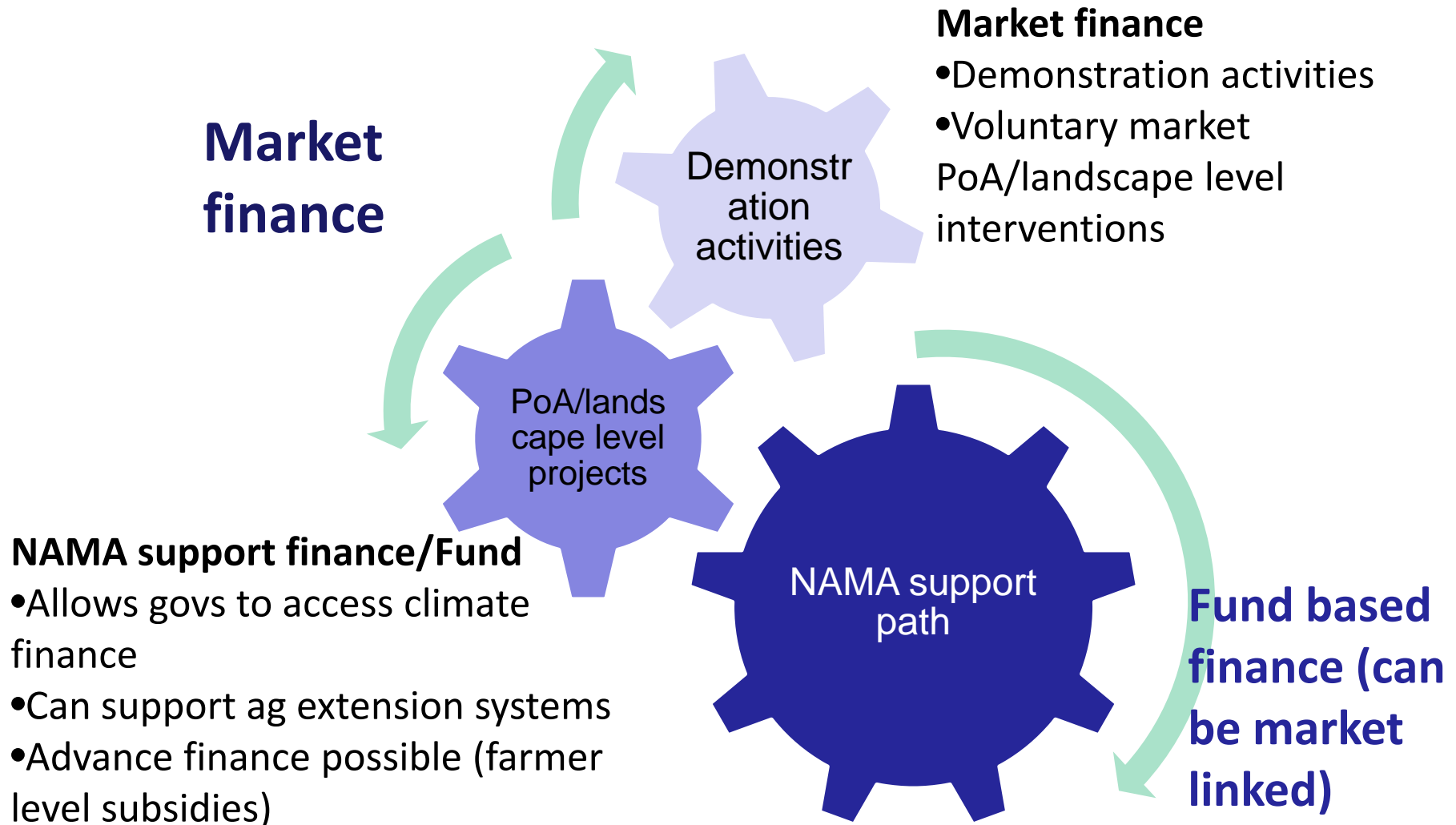


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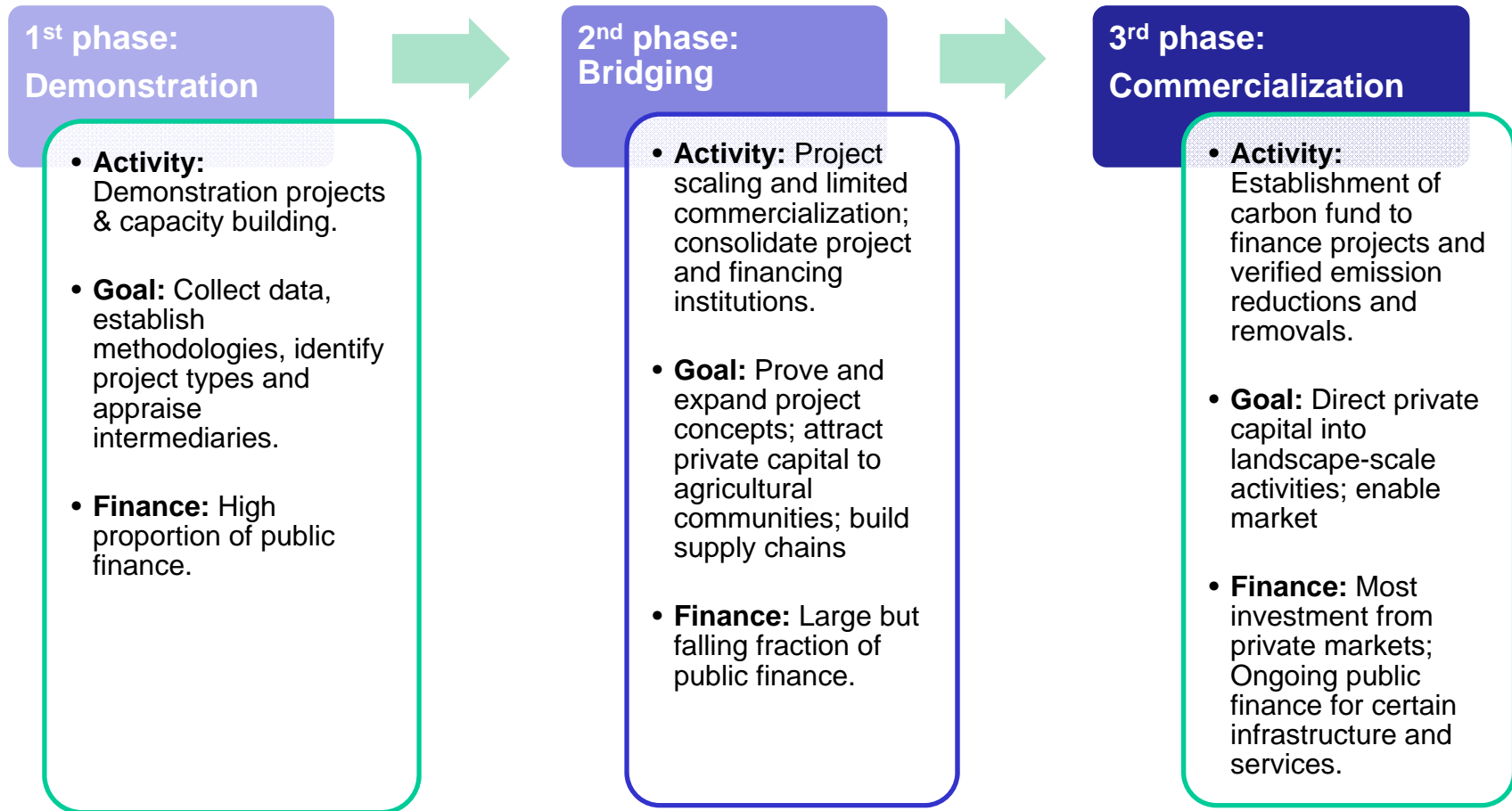


A basket of approaches





Facility: What are the steps?



What would it fund?



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SLM + Carbon

Activities that combine sustainable land management practices with rigorous carbon measurement, monitoring and oversight to deliver a) higher agricultural yields b) community benefits c) GHG reductions

WHAT? Farming System	HOW? Carbon-Friendly Practices	Incentives
Maize mixed	<ul style="list-style-type: none">• Agroforestry• Conservation tillage• Riparian revegetation• Bio-char (<i>possibly</i>)	<ul style="list-style-type: none">• Cash• Incentives
Millet/sorghum-based agropastoral	<ul style="list-style-type: none">• Conservation tillage• Fodder banks• Pasture rehabilitation	<ul style="list-style-type: none">• Cash• Incentives
Smallholder commercial coffee	<ul style="list-style-type: none">• Agroforestry• Riparian revegetation	<ul style="list-style-type: none">• Cash• Incentives

Sequestration Potential



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Technological options	Sequestration potential (tonnes C/ha/year)
Croplands	
Conservation tillage	0.10 - 0.20
Mulch farming (4 - 6 Mg/ha/year)	0.05 - 0.10
Compost (20 Mg/ha/year)	0.10 - 0.20
Elimination of bare fallow	0.05 - 0.10
Integrated nutrient management	0.10 - 0.20
Restoration of eroded soils	0.10 - 0.20
Restoration of salt-affected soils	0.05 - 0.10
Agricultural intensification	0.10 - 0.20
Water conservation and management	0.10 - 0.30
Afforestation	0.05 - 0.10
Grassland and pastures	0.05 - 0.10



Facility Benefits Flow

\$ Financing

Intermediaries

Aggregators

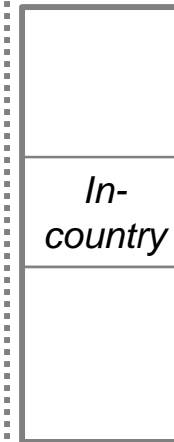
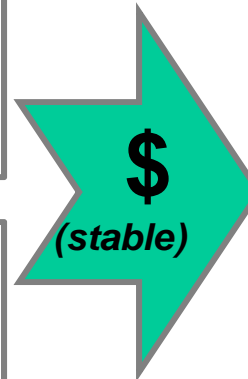
Producers

Carbon

Voluntary Mkts
Regulated Mkts
Sectoral/REDD
NAMA

Non-carbon

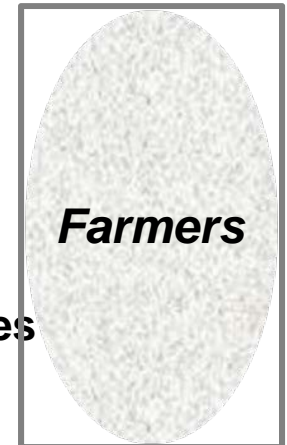
ODA
FDI
Domestic Budgets



\$

Training

Resources



- > resilience
- > yields
- > incomes
- > carbon stocks

(Emission reductions)?

Case Study: Danone Europe



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Problem High GHG emissions from dairy cows; Health complications & reduced agricultural sustainability Altered milk nutrient (Omega 3/6).

Approach LCA of supply chain → identify sources of → GHG/problems → develop methodology to measure and monitor → develop technologies for problems identified launch pilot program (2005, 20 French farms) → scale program (> 500 farms)

Results Shift milk composition (higher Omega 3); reduced GHG (methane) 20-30%; yield increases 8-10%; better cow health



Unilever: Sustainable Tea

Problem Erosion of soil productivity, communities, prices: commodity (real prices dropped 35% in past 25 years). Unilever sources from about 750 estates and 500,000 small farms (> 2 million people)

Approach Unilever commits to certifying Lipton Tea → working with RA develops standards; launches education, training → PR with Kenya Tea Growers Assoc., Farmer Field Schools → certifies 3 large Kenyan estates (> 25,000 workers) in 2007; shelves w/in 5 months.

Results

All Lipton tea certified worldwide by 2015; Paying \$0.10/kilo premium Unilever expects 10-15% premium, € 2 million/yr (2010) and €5 million (2015).



Contacts

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ANNEX



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Agriculture and Carbon in Practice: Key Questions



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Activities

What agricultural activities are appropriate to reduce GHG emissions and generate significant co-benefits for smallholders in Eastern and Southern Africa?

- magnitude (tCO₂e removed/reduced and agricultural benefits)
- timing of emission and yield improvements occur in the project-cycle?

What are the economic costs and benefits of these activities?

Facility

- How can emission reductions be monetized/credited in a way that benefits both smallholders and investors?
- Can the Facility scale up selected activities to regional level cost-effectively?
 - appropriate entities for aggregation, coordination, training and monitoring?
- What are the appropriate sources and methods of financing these activities?
- What role should Facility play at different phases to develop and commercialize agricultural carbon activities?

Carbon Finance in Africa



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Public and private financing could support adaptation and mitigation agendas in phased approach; Sustainable land management (SLM) activities relevant for all African countries.

CDM investment:

- < 1% of voluntary and compliance market in Africa
- Few co-benefits or involvement of rural poor, energy and industry centric

Public/Private sector investment

- ODA inadequate and declining; \$20B 1986 to \$5B today for global ag
- Investment in Africa's "frontier markets" tiny; fraction of emerging markets investment (\$300 billion in 2005)
- Agricultural R&D is 0.72% of ag GDP in SS Africa (2.36% developed)