Contested Agronomy: whose agronomy counts?
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Brazil's contested agronomy for Africa: insights from Embrapa's knowledge encounters in Mozambique

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China and Brazil in African Agriculture
http://www.future-agricultures.org/research/cbaa

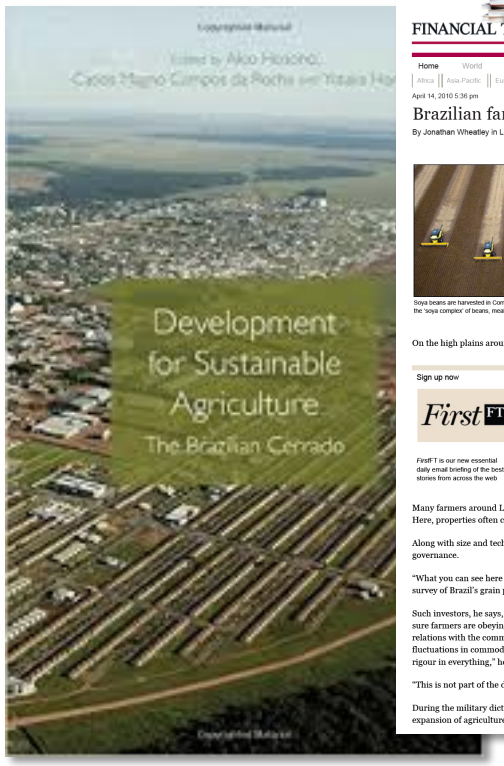
Two vignettes

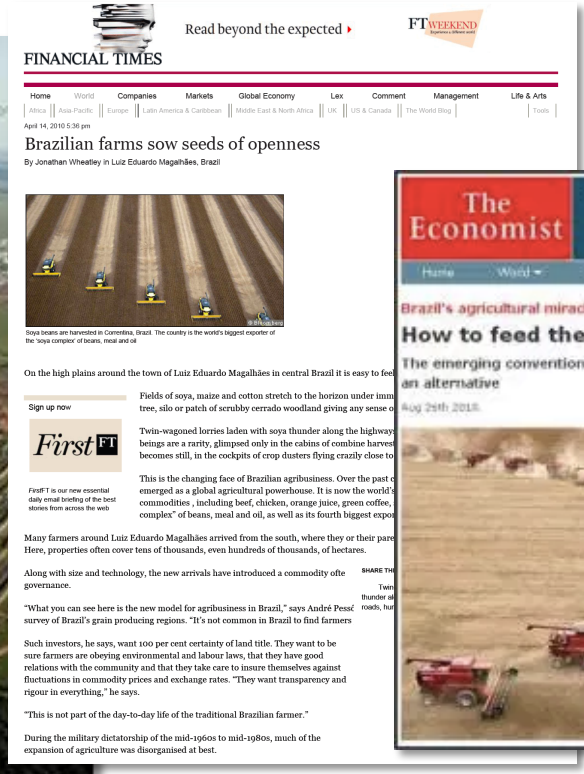
(replacing) **short-handled hoes**

(learning from) ***Escolas na machamba***

Embrapa: 43 yrs old, 46 units, 2,444 researchers

The Embrapa ‘miracle’

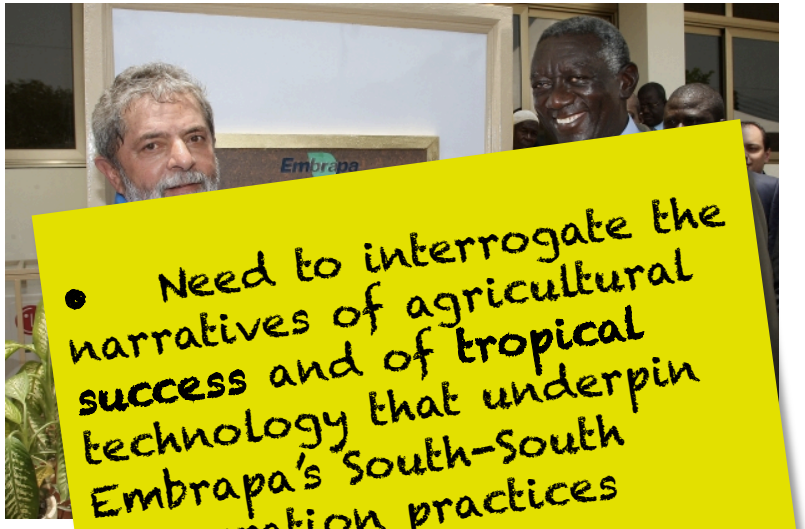




‘Since 1996 Brazilian farmers have increased the amount of land under cultivation by a third, mostly in the **cerrado**. (...) And it has increased production by ten times that amount. But the availability of farmland is in fact only a secondary reason for the extraordinary growth in Brazilian agriculture. If you want the primary reason in three words, they are **Embrapa, Embrapa, Embrapa**.’

(The Economist, Aug. 26th 2010, my emphasis)

Embrapa goes to Africa



- Need to interrogate the narratives of agricultural **success** and of **tropical** technology that underpin Embrapa's South-South cooperation practices
- **Contested agronomy perspective** – is Embrapa's agronomy disputed?

'To h… the b… have a… produ… same r… Brazilia… …ne …n the

(President Lula speaking at inauguration of Embrapa Ghana, 2006)

'Affinities of historical ethnical, cultural, linguistic and economic nature – as well as shared heritage and aspirations – favor the expansi… …n of south… …uccess' …, 2010)

- Need to interrogate claims of suitability of Brazil's tropical technology for Africa (based of agro-climatic **affinities**) and of **horizontality** in knowledge exchange
- **Knowledge encounters perspective** – are Embrapa professionals' experiences any different from typical aid workers

Embrapa professionals in Mozambique

Moçambique
Mozambique

Apoio ao Sistema de Inovação no Setor Agropecuário

SUPPORT TO THE INNOVATION SYSTEM IN THE AGRICULTURAL SECTOR

Embrapa-ABC em **Moçambique**

Moçambique está localizado ao sudeste do continente africano e tem na agricultura a principal fonte de renda e trabalho para uma grande parte da população. As políticas de governo para esse setor enfatizam a necessidade de aumento sustentável da produção agropecuária e a autossuficiência em alimentos, especialmente em relação a culturas alimentares básicas.

As características climáticas de Moçambique, aliadas à adoção de sementes adequadas e de formas de manejo das lavouras apropriadas às condições do país, possibilitam o cultivo de várias espécies.

O desafio é superar os problemas estruturais enfrentados, a exemplo da dependência de importações e de ocasionais crises de abastecimento, e do baixo desempenho do setor agropecuário, decorrente da baixa eficiência dos sistemas produtivos, do uso restrito de tecnologias e de pouco desenvolvimento de inovações para a agricultura. O difícil acesso a insumos agrícolas e a créditos também é observado.

A Embrapa, junto com instituições de diferentes países, colabora com o país por meio da implantação de projetos de cooperação técnica voltados ao desenvolvimento do setor agropecuário por deter conhecimento e experiência em vários temas focais de interesse comum. A língua portuguesa se insere dentre os fatores que contribuem para o estabelecimento dos trabalhos em Moçambique.

O **Programa Embrapa-ABC Moçambique** prevê diferentes frentes de trabalho para que se possa fortalecer o setor agropecuário daquela nação africana, por meio da adaptação de tecnologias brasileiras às condições específicas do país, do desenvolvimento institucional do Instituto de Investigação Agrária de Moçambique (IIAM) e da capacitação de seu quadro técnico.

Três projetos, abrangendo as principais zonas agrícolas do país, compõem o Programa. São eles:

- **Plataforma** | Projeto de Cooperação Técnica de Apoio à Plataforma de Inovação Agrária de Moçambique
- **ProSavana** | Projeto de Melhoria da Capacidade de Pesquisa e de Transferência de Tecnologia para o Desenvolvimento da Agricultura no Corredor de Nacala, em Moçambique
- **ProAlimentos** | Projeto de Apoio Técnico aos Programas de Nutrição e Segurança Alimentar de Moçambique

ProSavana
Big cultures

Plataforma
Institutional development

Proalimentos
Food Security

Embrapa-ABC in Mozambique

Mozambique is located in Southeast Africa. Agriculture is the main income source and employs most of the country population. Government Agricultural policies are focused on sustainable production increase and self-sufficiency in food production, especially staple crops.

Mozambique has a strong potential for food production. Favorable climate characteristics allied with high quality seeds and proper crop management would allow the cropping of several important species.

The challenge is to overcome structural problems faced by the agriculture sector such as low efficiency of production systems, low technological input, and little development of innovations that lead to unstable food supply - the country is dependent on imports and occasionally goes through a lack of supplies.

Embrapa, in partnership with various international institutions, collaborates with Mozambique through technical cooperation projects in tropical agriculture, which is its area of expertise. Both countries also share the same language, Portuguese, that facilitates the establishment of joint ventures in the country.

*The **Program Embrapa-ABC in Mozambique** includes various initiatives to strengthen the agriculture sector in the country including adaptation of Brazilian varieties and technologies, institutional development of the Mozambique Agrarian Research Institute (Instituto de Investigação Agrária de Moçambique, IIAM) and the capacity building of researchers and technicians.*

The program comprises three projects covering the main agriculture areas in the country:

- ***Platform** | Technical Cooperation Project to Support the Agrarian Innovation Platform of Mozambique*
- ***ProSavannah** | Research Improvement and Transfer of Technology to Develop Agriculture in the Nacala Corridor in Mozambique*
- ***ProAlimentos** | Technical Support to Nutritional and Food Security Programs in Mozambique*

- 14 researchers from 11 units and two departments at Embrapa HQ
- Their expertise: agronomy, rural sociology, rural economy, chemistry, statistics…
- Working across 3 cooperation projects
- Only 2 based in Mozambique; others operating through short term missions
- Activities comprising collection of soil samples, crop adaptation experiments, training, studies

Disputed knowledge base

Dominant	Confined
• Cerrado transformation (Brazil's Green Revolution) as success template • Science (and Embrapa) as key to Brazil's agricultural success • Brazilian leadership on tropical agricultural science • Science as separated from policy and politics and should remain neutral	• Critical of Cerrado modernisation and ready-made recipe of success • Favourable of agro-ecological alternative (critical of use of hybrids) • Science as driven by interests of the better-off in the sector • Emphasis put on social function of research (should serve social objectives of public policy)

Contrasting encounters

Dominant	Confined
• Mozambican agriculture as primitive and rudimentary • Take science to Africa to modernise its agriculture – passing on improved tropical varieties that help replicate Brazil's success • Frustration with lack of cooperation from local counterpart (lack of competence and commitment, not interested in learning in absence of financial incentives) • Emphasis on results – how well Brazilian cultivars responded to local conditions • Attempt to correct backward practices – 'short-handled hoe' episode	• Critical of unidirectional 'pass the baton' mode of knowledge transmission • Emphasis on process of mutual learning finding more embedded solutions • Interested in understanding the other and developing a relationship • Frustration with short timeframe of project and rush to deliver • Finds potential for learning from Mozambican practices – '*escolas na machamba*'

In sum

- Brazil's 'tropical' agronomy for Africa is dominated by a view of replicable success delivered through technological transfer (this is driven by interests beyond knowledge reproduction)
- This dominant framework and unidirectional mode of knowledge transfer are being disputed from within, challenged by different epistemologies and values (and institutional and partisan politics)
- Claimed natural affinities Brazil-Africa not sufficient to ensure a fruitful and horizontal knowledge exchange
- Personal attitudes matter!

Further research

- What is the role played by the life trajectories of Embrapa professionals (where they studied, what studied and generation)?
  - Embrapa's old-school US-trained agronomists more conservative?
  - Young generations fail to engage with Embrapa's 'epic past' (Navarro and Alves 2014)
- What evidence of actual bi-directional South-South exchange in agricultural cooperation practices?
  - Are Brazilian experts different from typical aid workers, from the point of view of Mozambican counterparts?