Brazil’s contested agronomy for Africa: insights from Embrapa’s knowledge encounters in Mozambique

Lídia Cabral

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’

The Economist

Brazilian agriculture
The miracle of the cerrado

Brazil has revolutionised its own farms. Can it do the same for others?
Aug 26th 2010 | CREMAQ, PAUL | From the print edition

IN A remote corner of Bahia state, in northeastern Brazil, a vast new farm is springing out of the dry bush. Thirty years ago eucalyptus and pine were planted in this part of the cerrado (Brazil’s savannah). Native shrubs later reclaimed some of it. Now every field tells the story of a transformation. Some have been cut to a litter of tree stumps and scrub; on others, charcoal-makers have moved in to reduce the woodlands to fuel; next, other fields have been levelled and prepared with lime and fertilizer; and some have already been turned into white oceans of cotton. Next season this farm at Jatiobá will plant and harvest cotton, soybeans and maize on 24,000 hectares, 200 times the size of an average farm in Iowa. It will transform a poverty-stricken part of Brazil’s backlands.

Three hundred miles north, in the state of Piauí, the transformation is already complete. Three years ago the Cremat farm was a failed experiment in growing cashews. Its bums were falling down and the scrubs were resurgent its grip. Now the farm—which, like Jatiobá, is owned by Brasilagas, a company that buys and modernises neglected fields—uses radio transmitters to keep track of the weather; runs SAP software; employs 300 people under a palcho from southern Brazil; has 200km (124 miles) of new roads criss-crossing the fields; and, at harvest time, returns to the thunder of kereys which, day and night, carry maize and soy to distant ports. That all this is happening in Piauí—the Timbuktu of Brazil, a remote, somewhat lawless area where the nearest health clinic is half a day’s journey away and most people live off state welfare payments—is nothing short of miraculous.

These two farms on the frontier of Brazilian farming are microcosms of a national change with global implications. In less than 30 years Brazil has turned itself from a food importer into one of the world’s great breadsakers (see chart 1). It is the first country to have caught up with the traditional “big five” grain exporters (America, Canada, Australia, Argentina and the European Union). It is also the first tropical food-plant; the big five see all temperate

‘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

‘Affinities of historical ethnical, cultural, linguistic and economic nature – as well as shared heritage and aspirations – favor the expansion – and realization of south-south cooperation success’

(ABC, Diálogo Brasil-Africa, 2010)

• 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?

• Need to interrogate claims of suitability of Brazil’s tropical technology for Africa (based on agro-climatic affinities) and of horizontality in knowledge exchange

• Knowledge encounters perspective - are Embrapa professionals’ experiences any different from typical aid workers

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

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

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