

Carbon-Smart Farming

A DEFINITION

Confronting Climate Change

- 1. Soil Tests** annual increase in measured carbon, up to 9%
- 2. Mineral Ratios** fertility program to adjust element levels
- 3. Biochars** minimum annual application: initial 500 lbs./acre
- 4. Composts** soil digestive system & feeding program
- 5. Inoculants** microbial inoculation & feeding program
- 6. Cover Crops** continuous ground cover & minimum tillage
- 7. Rotations** long-term, rapid rotations of crops & livestock
- 8. Marketing** Low carbon, eco-local distribution

Carbon-Smart Biochar

Amazon Basin, Brazil



Terra Preta

Confronting Climate Change

Local farmers prize *Terra Preta*

3X greater yields than adjacent soils
sustained fertility in intensive use
dug up and sold as potting soil

Small Patches

average: 20 hectares (50 acres)
up to 350 hectares (865 acres)
near settlements & on bluffs
cultural debris, animal bones, pot sherds
large amount of charred carbon

Oxisol

Age

300 to 1500 years
radio-carbon dating (charcoal)
recent: 6000 years
predominant Amazon soils
notoriously infertile
acidic
very low carbon
poor nutrient capacity
very low productivity

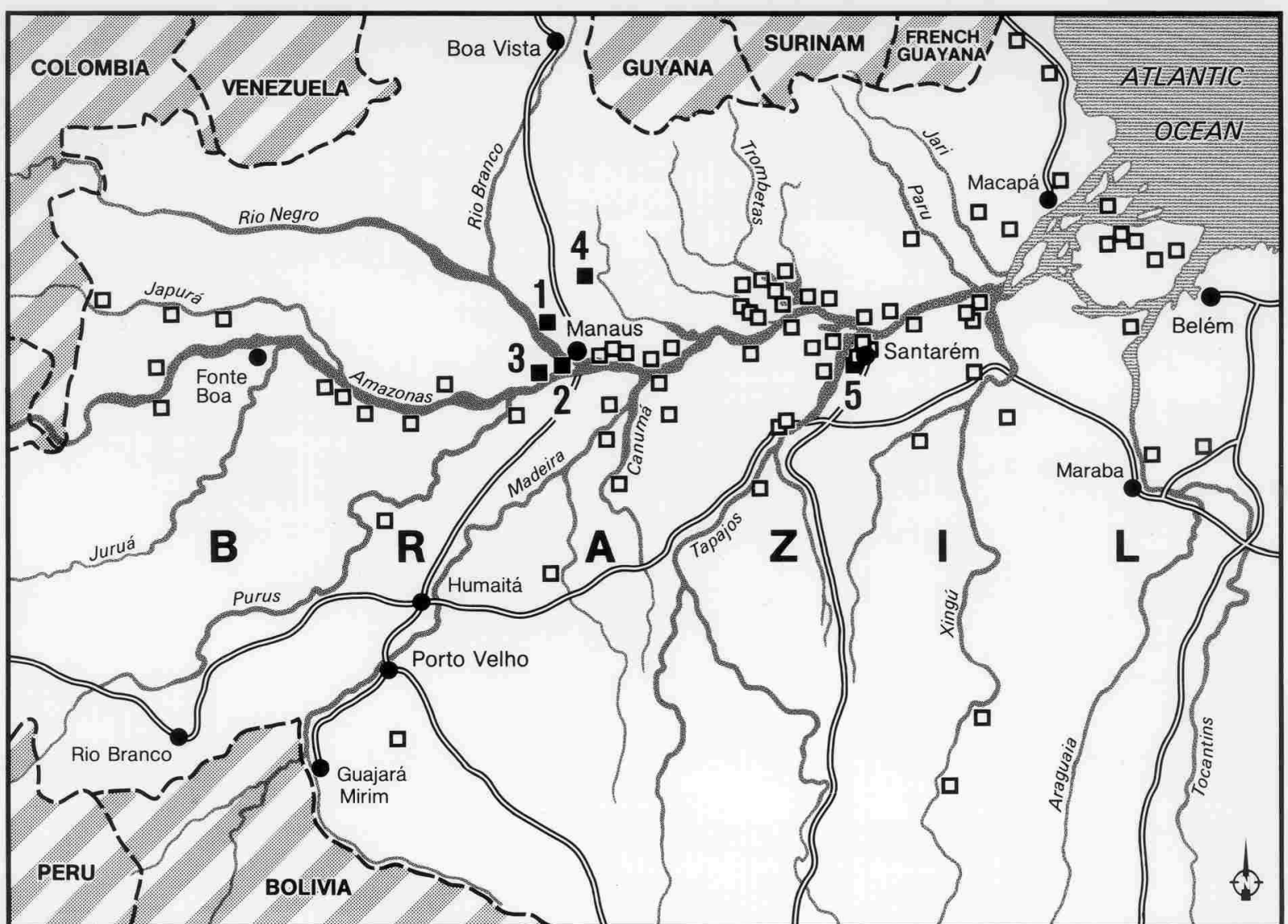
Aerial Surveys

10% of total land area
arable land to feed 5 million



Carbon-Smart *Terra Preta* Amazon Basin, Brazil

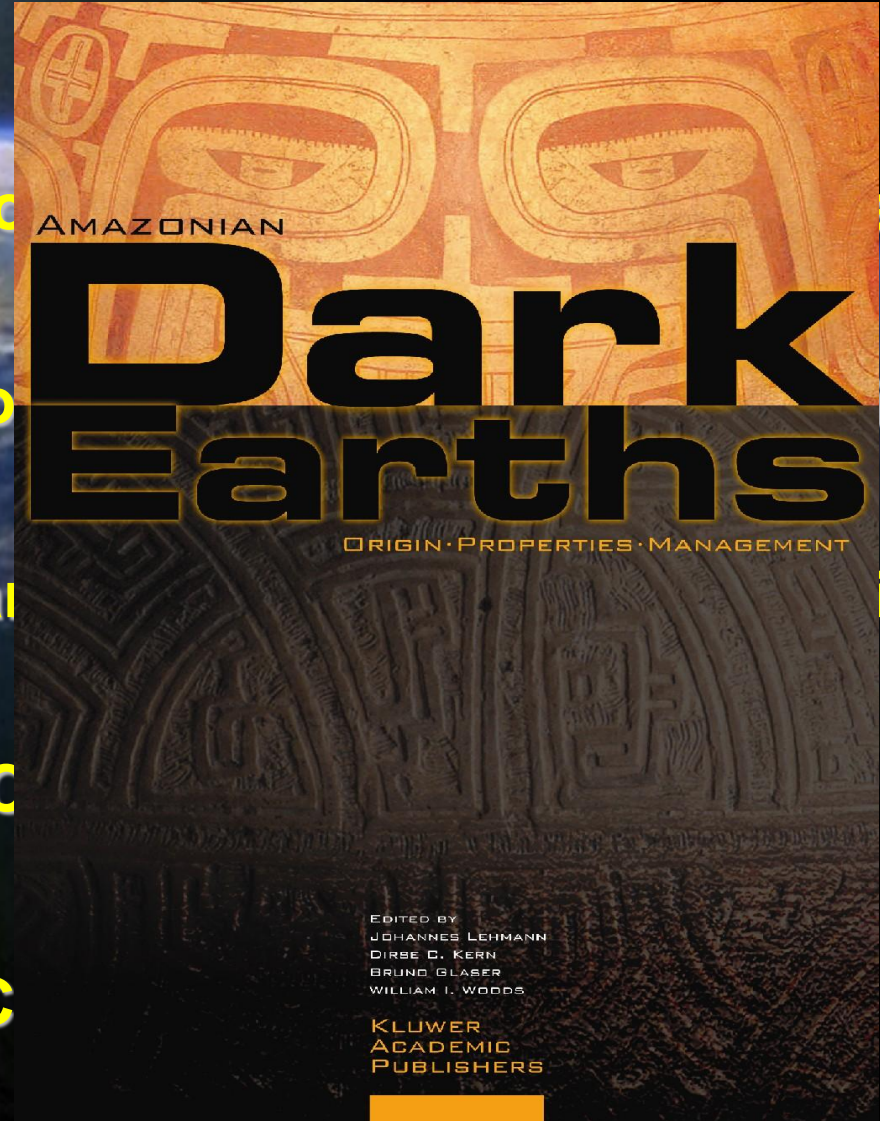
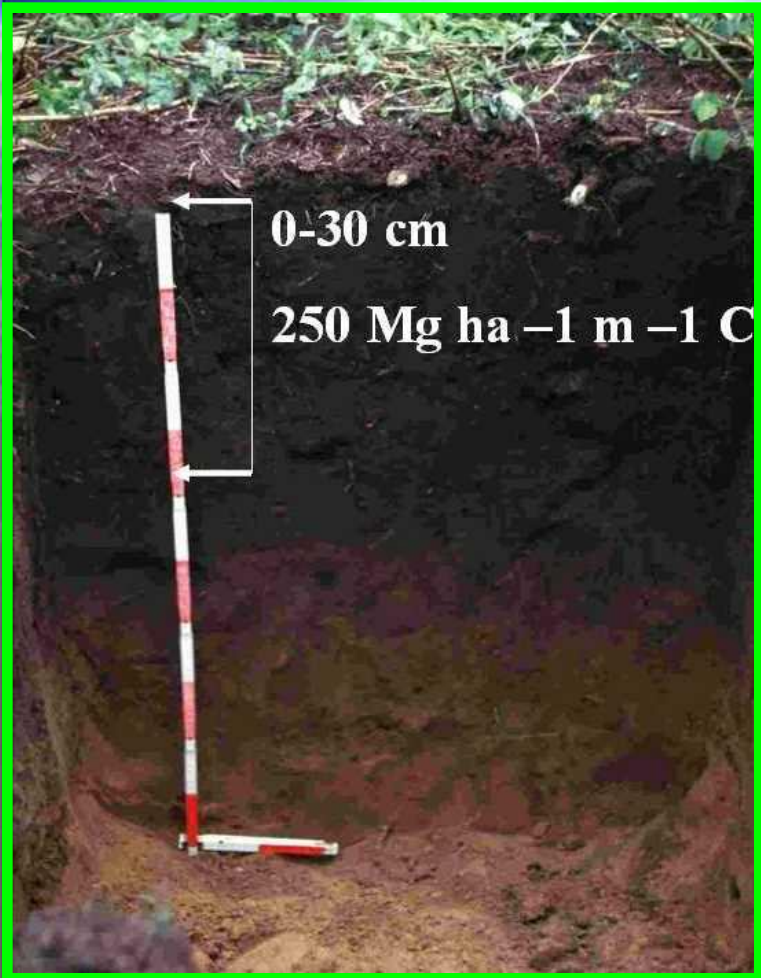
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Carbon-Smart *Terra Preta* Amazon Basin, Brazil

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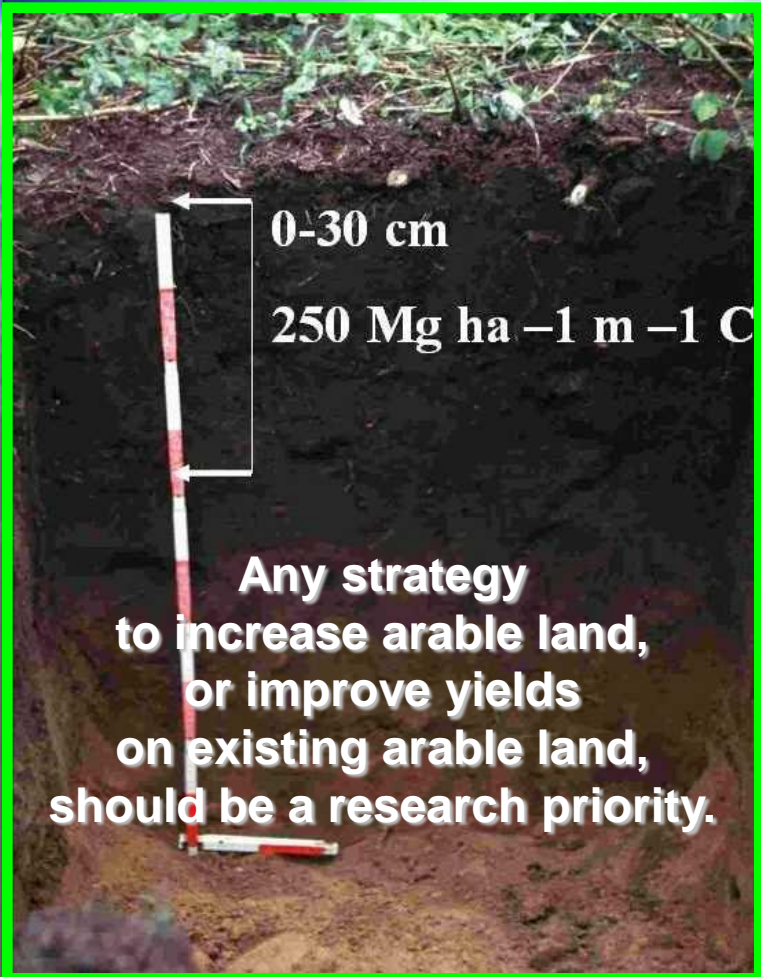


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Terra Preta

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Global Cooling

Amazonian Collapse & Europe's Little Ice Age

Annals of the Association of American Geographers
2010 Special Issue: **Climate Change**

Vol. 100 # 4

Positive proof of global warming.



18th
Century

1900

1950

1970

1980

1990

2006

Carbon-Smart *Terra Preta*

Confronting
Climate Change

Global Climate Negotiations

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No one can change the past, everyone can change the future