A question of scale: the construction of marginal lands and the limitations of global land classifications

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Rachel Nalepa
Boston University

What is the purpose of global assessments?

- Global marginal land assessments are limited in distinguishing both suitable and available land for biofuels
- serves to obscure socio-ecological relationships for the sake of creating a new "resource imaginary"

marginal
land
poor
production
agricultural
productivity
use
cultivation
conditions
value
degradation
low
physical
may
due
costs
cultivate
defined
agriculture
inputs
difficult
soil
quality
given
little
plants
grow
management
used
condition
risk
defect
refers
just
flaw
desert
margin
benefits
without
climate
internal
options
regular
sustained
paddy
cropland
characterized
extensive
topography
crops
currently
able
unsuitable
deficiency
access
e.g
cost-effective
waste
return
terrain
application
aggregate
regard
revenue
Limited
barely
profit
polices
justified
cases
area
susceptible
marginally
well
external
techinques
adequate
severe
covers
cost
inappropriate
irreversible
much
characteristics
expected
limitations
Increased
maintain
energy
yields
certain
productive
upland
diminished
property
scarcity
natural
possible
steep
equal
lands
lack
correct
practices
legal
border
Summary
diversification
side
negative
housing
water
winter
high
inherent
macro-economic
rainfall
uses

Characterizing Marginal Land

Step 1: **Suitability**

Climate, soil profile, topography (e.g. agro-climatic factors)

Step 2: **Availability**

Land cover data (discount land that is being used, can't be used)

Discount:

- Forest
- Wetlands
- Urbanscapes
- Cultivated Land
- Protected Areas

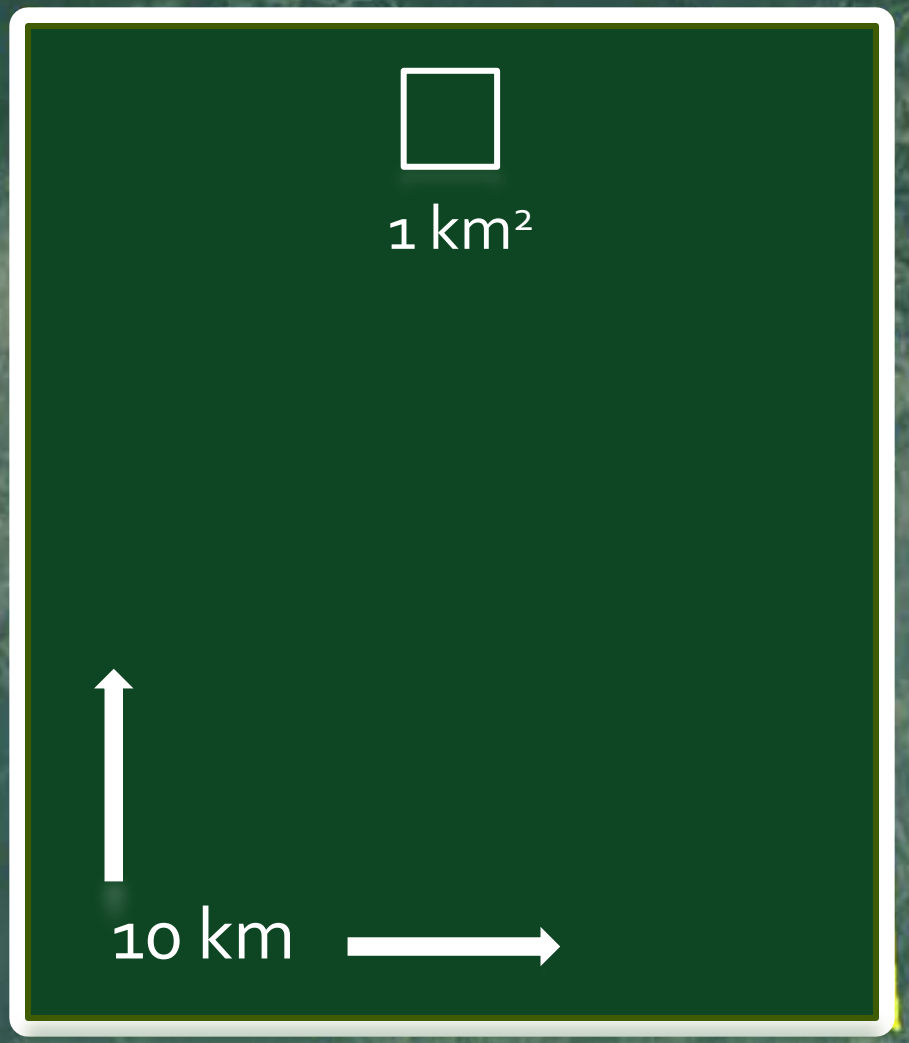
Some suitability data:
5 arc minute= ~10 km at equator
(agro-ecological data e.g. soil, terrain)

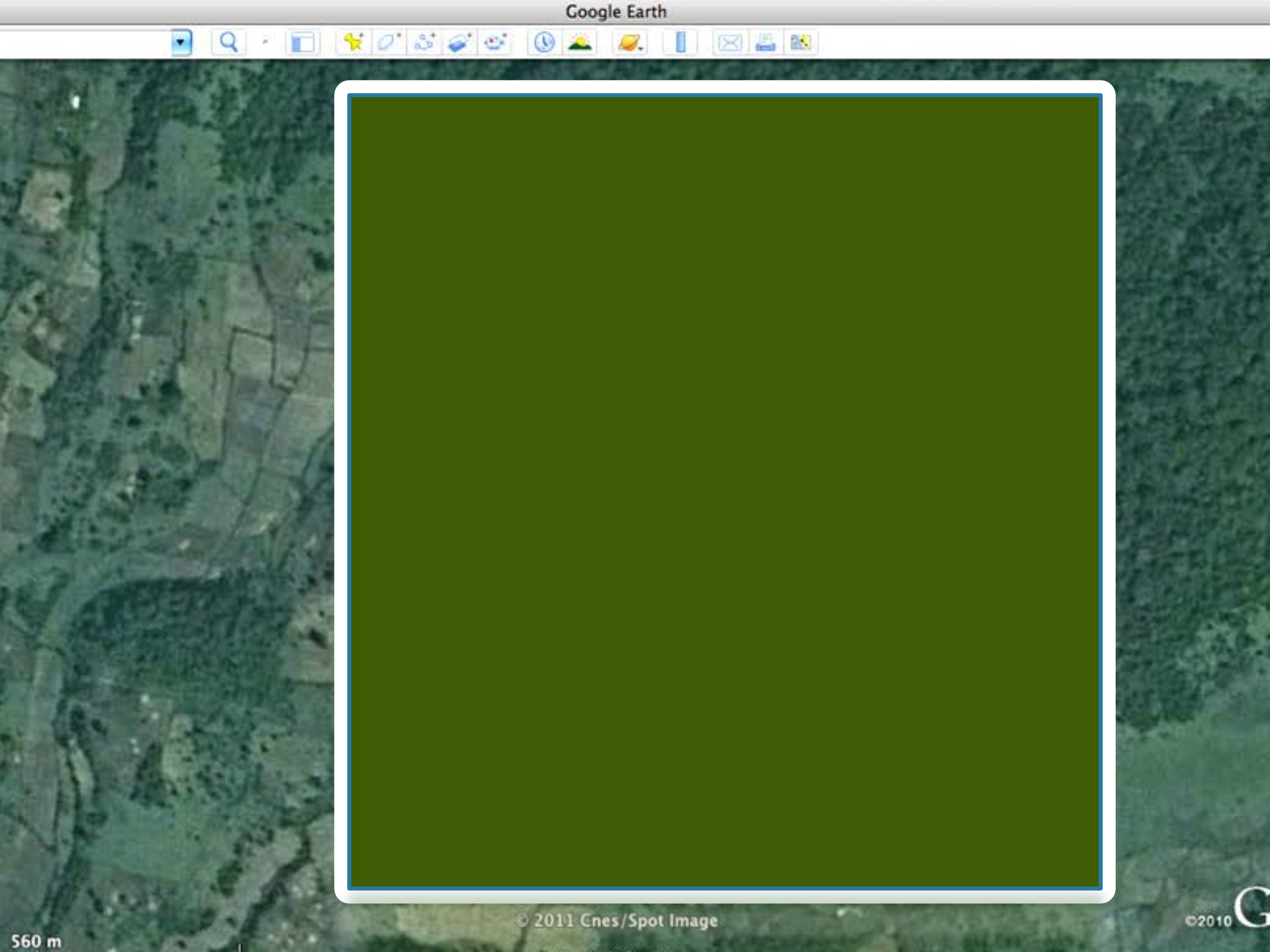
Cialla

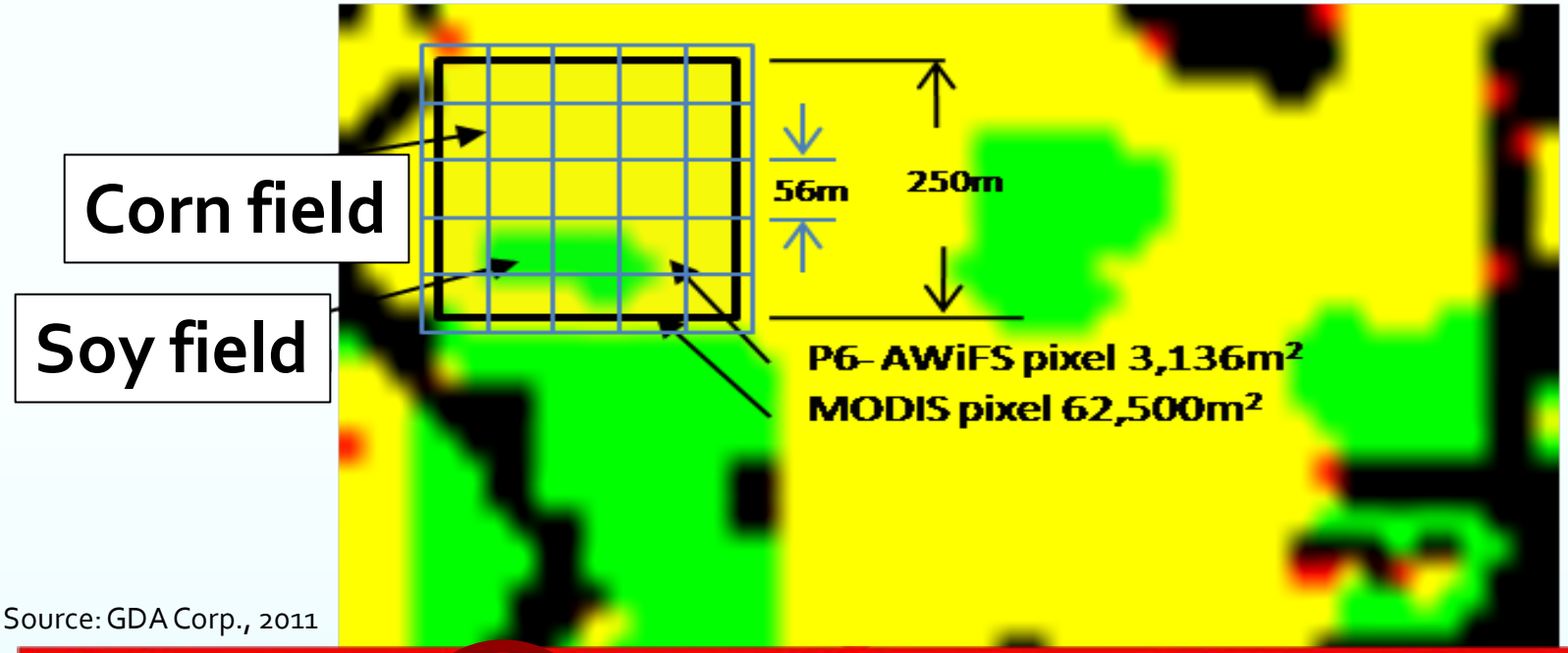
Most suitability/availability data:
30 arc second= ~1 km at equator

Duseta

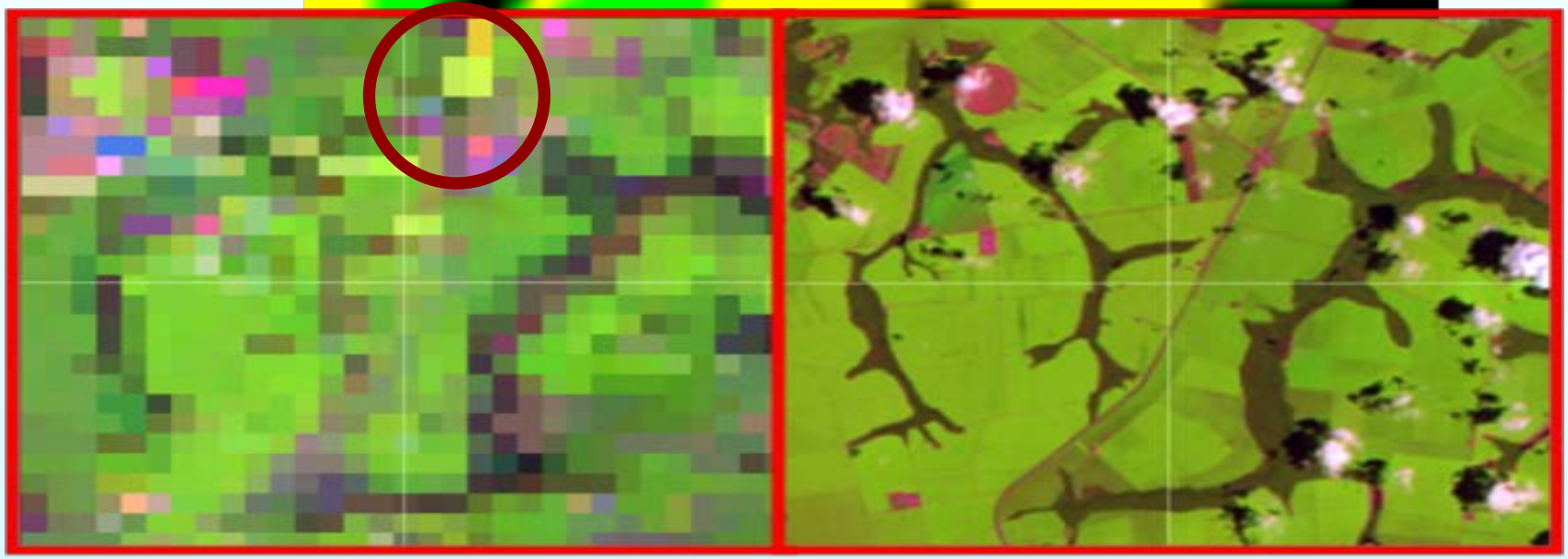
(agro-ecological data & land cover data)




Google Earth
© 2011 Cnes/Spot Image
©2010
560 m



Source: GDA Corp., 2011



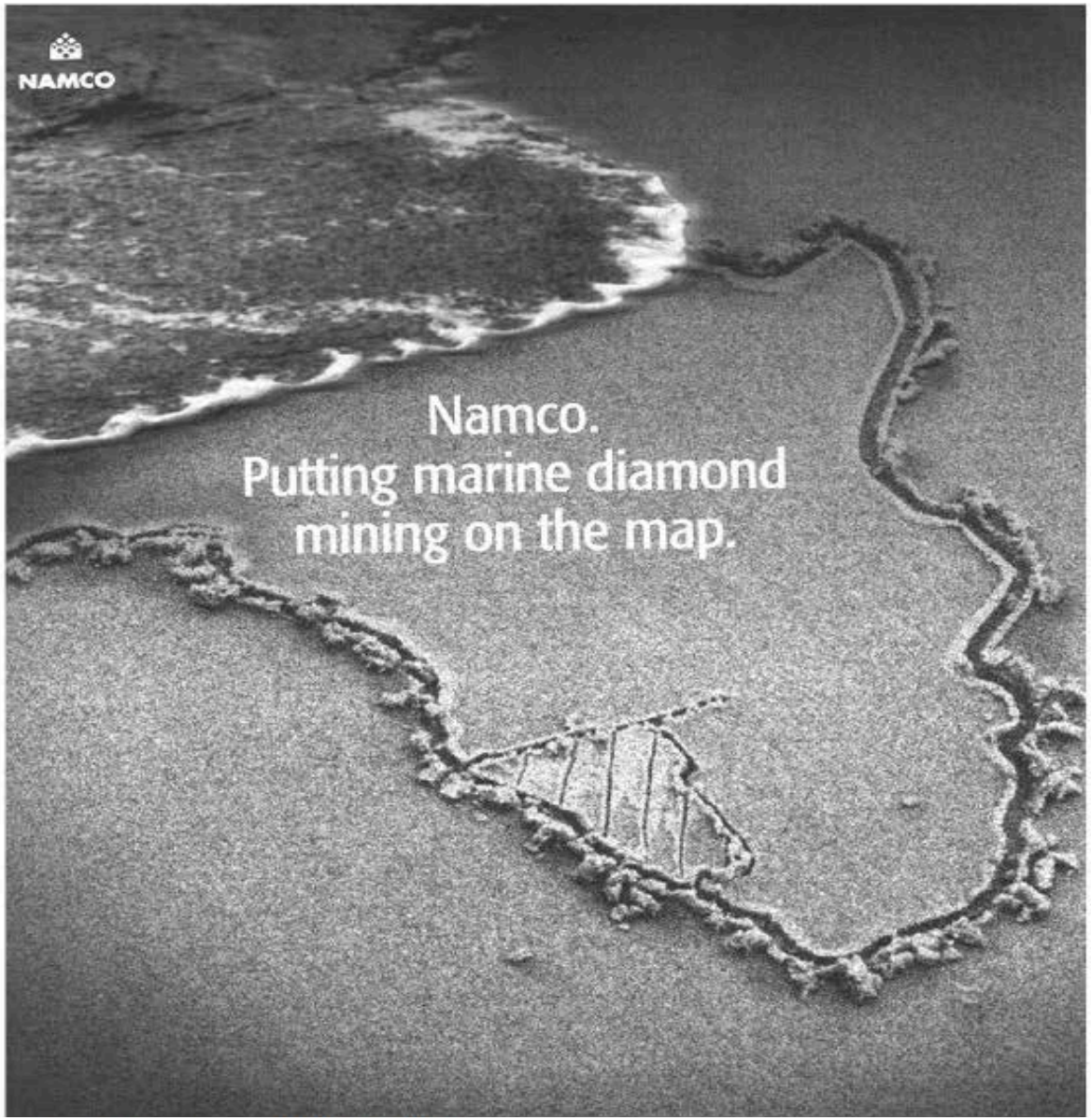
MODIS Imagery :250m resolution AWIFS Imagery : 56M Resolution

Visual Comparison of MODIS 16 day composite and P6-AWiFS Images

Farmers make choices based on 'an extensive margin of production' determined by land quality **AND** socioeconomic factors:

- technological
- legal
- institutional
- macro-economic conditions
- credit accessibility
- land tenure policies etc.
- subsidies

Transforming landscapes into ‘mere space’



Sources: Mining Journal; ``African mining", January, 1997; Bridge, 2001.

Suitable (marginal?) land for biofuels in 6 Ethiopian regions

…land is "unusable"; it is "just marginal land." The district administrator responsible for the project went on to say that "the whole thing [sic] is nothing but positive" (Knaup 2008).

	(ha)	for biofuels (ha)
Tigray	5,007,864	6,500
Oromia	35,3000,681	17,234,523
Benishangul Gumuz	4,928,946	3,128,251
SNNPR	11,234,319	49,025
Gambella	2,580,261	2,829,999
Amhara	15,917,366	966,535
		= ~20% nation's total land area

Source: CSA Ethiopia (2005), MoME (2007),(Aklilu 2008)