

The Sleeping Giant

Commercialised agriculture and sub-humid ecosystems (Guinea savannas)
in Africa

The questions asked

- What are the environmental consequences of the intensification of agricultural production?
- How can these be mitigated?

Why these questions are too narrow

- Framed within a conventional developmental analysis
- The 'environment' as an afterthought added to costs from a different (sustainability) agenda
- Growing global consensus that the conservation agenda shares priority with climate change and poverty reduction
- If the Guinea savannas are the world's largest under-developed biome (the 'family silver'), it is inappropriate to mortgage them ignorantly

Scaling up the ecosystem

- *From* sustainable NRM treated as an opportunity cost or trade-off against productive income
- *With* under-valuing of ecosystem services and of ecosystem health
- *To* future value of a sustainable (healthy) ecosystem yielding needful services
- Judgements of present and future values an essential function in the human-ecological system

The human-ecological system

- Co-evolving human and ecological systems
- Drought puts stress on human system to adapt and insure
- Destructive exploitation may remove key ecosystem services
- NRM institutions have critical bridging role
- Dryland application of this idea – the *Dryland Development Paradigm* (*Science*, Reynolds et al).





The real world

- “We” are not (usually) making the choices
- Environmental policies and interventions are the products of a complex political ecology
- Appropriations of savanna woodland for farming (market and subsistence) are rapid
- Land allocations for large-scale food or biofuel production are advanced in many countries
- Commercial agriculture is no longer an option but a fact

Drylands: Challenge Paper on a biome

- A global biome in all continents
- Home to a large proportion of global poor
- Marginalised in global economy and trading
- Neglected by governments and donors
- Highly risky, rainfall variability and trends
- Misrepresented and misunderstood – new knowledge to replace ‘myths’

Building block 1: Knowledge

- Reversal of the dryland 'myths'
- Adaptive capacity
- Local with science knowledge partnerships
- Access to urban and developmental nodes
- Awareness of opportunities
- Appropriate technologies

Building block 2: re-valuation of ecosystem services

- Dryland contributions to food sufficiency
- Livestock products
- Efficiency of low-input (and low yield) cropping systems
- Efficiency of grazing systems
- NFTP's and potential development
- Tourism
- Conservation – use options retained



Building block 3: investment

- Recognition of small-scale private investment from savings (farms, animals, structures, tools)
- Securing investments against risk (droughts)
- Public sector - infrastructure (transport, markets)
- Services (education, health)
- Agricultural and livestock support

Building block 4: markets

- Bulk commodity marketing
- High value and niche markets
- Market institutions and governance
- Producers' associations
- Urban hinterland links (transport, phones)
- Labour markets
- Input markets, land markets
- Carbon markets

Building block 5: policies

- Resource tenure reform
- Investment incentives
- Decentralisation of natural resource governance
- Insurance
- Adaptive capacity

A policy programme for an ecosystem

Nigeria is setting the pace

- *The West Africa Long Term Perspective Study 1960-2020* (OECD)
- Urbanization (perhaps 50%?)
- Expanding market hinterlands
- Reducing marketing costs
- Growing rural population densities (<0.5 ha)
- Switch from export to domestic markets
- Intensifying interaction – and now, the phone

Savanna intensification (FAM)

- Smaller family farms
- Increasing livestock populations
- Greater use of fodder residues
- More use of manure and chemical fertilizers
- More trees on farm
- More weeding
- Inter-cropping, etc

Large scale extensification

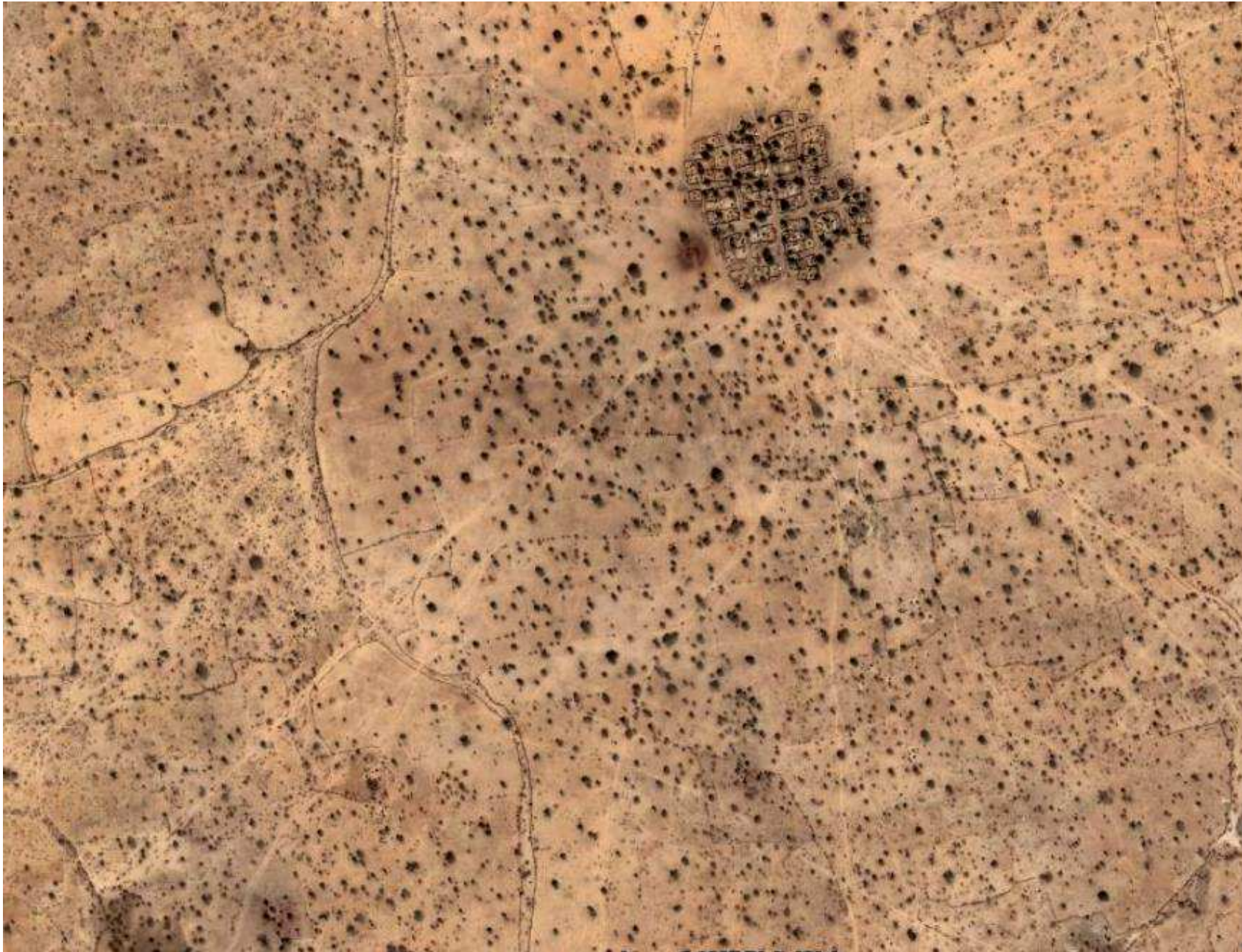
- 'land grabbing' and woodland clearance
- Exclosures
- Hidden public sector support (contacts, costs)
- Mechanization, agro-chemicals
- Non-local employment
- Sustainability not proven
- Profits dispersed

Possible negative impacts

- Soil nutrient depletion
- Soil physical and biological degradation
- Soil erosion
- Soil desiccation
- Declining biomass production
- Biodiversity loss on agricultural land
- Species inventory loss
- Surface and subsurface water scarcity

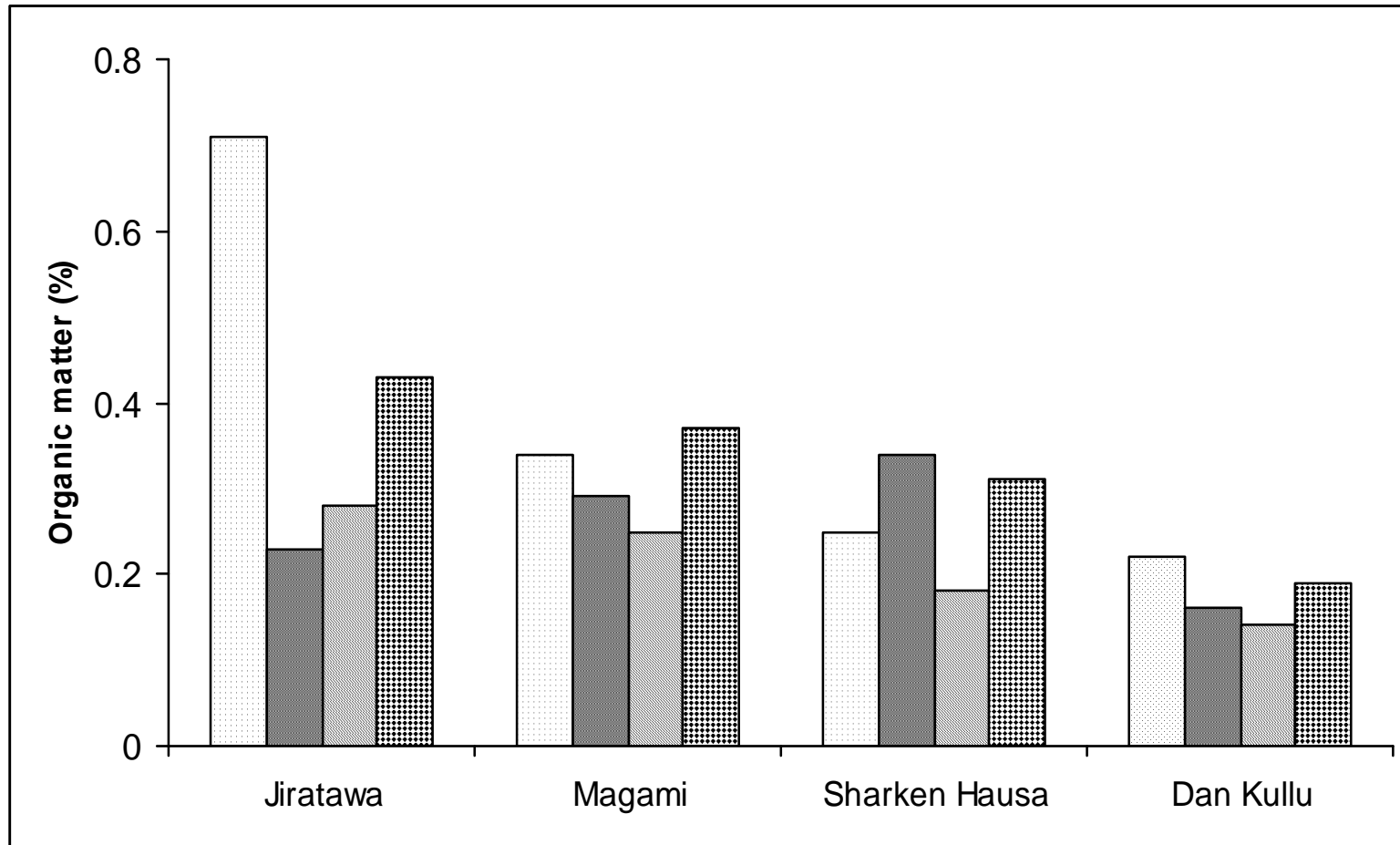
Achievements on Family Farms

- Soil properties maintained (at low levels) by livestock manuring
- Erosion controlled by terraces, ridging
- Small-scale irrigation intensified in *fadamas*
- Woodland biomass partly restored by farm trees; crop biomass equals savanna grasses
- Useful biodiversity valued and protected
- Smallholders are best ecosystem stewards?



OM (%) by land use, Maradi

50-yr fallow, pasture, cultn -fertn, cultn+fertn



But Nigeria – the Brazil model?

- Equity and security cannot be achieved under the Land Use Act
- State ownership, and political interference in enforcement
- Duality of customary and statutory tenure unresolved
- Speculation in land
- Reform needs a change in the Constitution

Competitiveness and growth – the impact of land policy

Michael Mortimore and Y Layi Fabiyi

A study commissioned by DFID (Nigeria), 2003

Inevitable commercialisation - what role for the state?

- Promotion of a development model, technologies, management?
- Or enabling autonomous change?
- Regulating, legislating, governing?
- Or providing incentives for investment, market participation?
- Directing top down or responding to demand?

Fundamentals for development with conservation

- Risk assessment – better understanding of opportunities, constraints for ecosystems
- Monitoring of ecological change, poverty reduction and equity
- Knowledge partnerships – government, local people, scientists
- Safeguards – risk insurance, ecological disaster preparedness, water, soil, biodiversity

