Environmental Trends Analysis (ETA): Tools for Poverty Alleviation

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1 Environmental Trends Analysis (ETA)

Content:

- Analytical framework: Amartya Sen's "Capability approach"

- USAID: "Nature, Wealth and Power" and the FRAME project

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1.1 Analytical framework: Amartya Sen's "Capability Approach"

- Conceptual framework to evaluate social states in terms of human well-being and potential.
- Emphasizes functional capabilities e.g., skills and rights in economic transactions and empowerment to participate in political activities
- Having a capability means to have a practical choice or freedom to act
- Construed in terms of substantive freedoms and rights that people value, and not simply utility or access to resources
- Poverty is understood as capability deprivation

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USAID and the FRAME project, I

- USAID's analytical framework "Nature, Wealth and Power"
  - Empowering the poor through governance rights over critical natural resource assets
- FRAME: a community of practice on NRM in Africa. The goals are:
  - Foster discussion on the environment and NRM across disciplinary and geographical boundaries
  - Provide timely and relevant information on innovative and strategic NRM options and knowledge generation and sharing tools

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USAID and the FRAME Project, II

- FRAME focuses on supporting user-defined NRM communities, including KM tools for professionals and policy makers. One of these CoPs focuses on Environmental Trends Analysis.

- ETA is a set of tools and approaches to assess changes in natural resources over time, and to evaluate the impacts of different management and policy regimes on natural resources.

- ETA evolved partly as a result of wider and more diverse uses of GIS in Africa and other developing countries.

- ETA is inter-disciplinary and cross-cultural, and concerned with the relationship between culture and technology.

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Knowledge and ETA

- Knowledge is the sum total of a culture's accumulated experience, including transfer, views on itself, the environment, and relationships with the environment

- ETA recognizes that knowledge is often culturally and geographically indigenous

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2 Wetlands and Traditional Property Rights in Mauritania

Content:

- Setting

- Issues and problems

- Approach: World Bank Technology Fosters Tradition project (TFT)

- Methodology: The "Social GIS" (SGIS) model

- Outcome: maps

- Mauritanian wetlands and ETA

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2.1 Setting

- Mauritania is located in West Africa
- Varied ecosystems: coast, desert, Sahel, wetlands
- People: Maure, Haratins / Black Maure, and black Africans

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2.2 Issues and problems

- Increase of incidents of conflicts
- Livestock an undervalued asset
- Traditional knowledge undervalued
- NRM and governance politically-charged
- The technology challenge
- Land management and poverty reduction
- Common property rights abolished
- Environmental destruction

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2.3 Approach: World Bank's Techno-logy Fosters Tradition (TFT) Project

- Objective: Document and formalize traditional property rights, working with local people and using GIS

- Project area: semi-desert and ephemeral wetlands

- People: sedentary farmers and pastoralists

- Output: maps, legal reform, stakeholder involvement, decrease of conflict

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TFT Project area

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2.4 Methodology: The "Social GIS" (SGIS) Model

- Developed by the TFT project

- A decision-tree approach to integrate GIS and participatory data collection

- Consists of three parts, each containing a number of steps:

  – GIS

  – Participatory mapping, with/by local people

  – Macro-level integration and implementation

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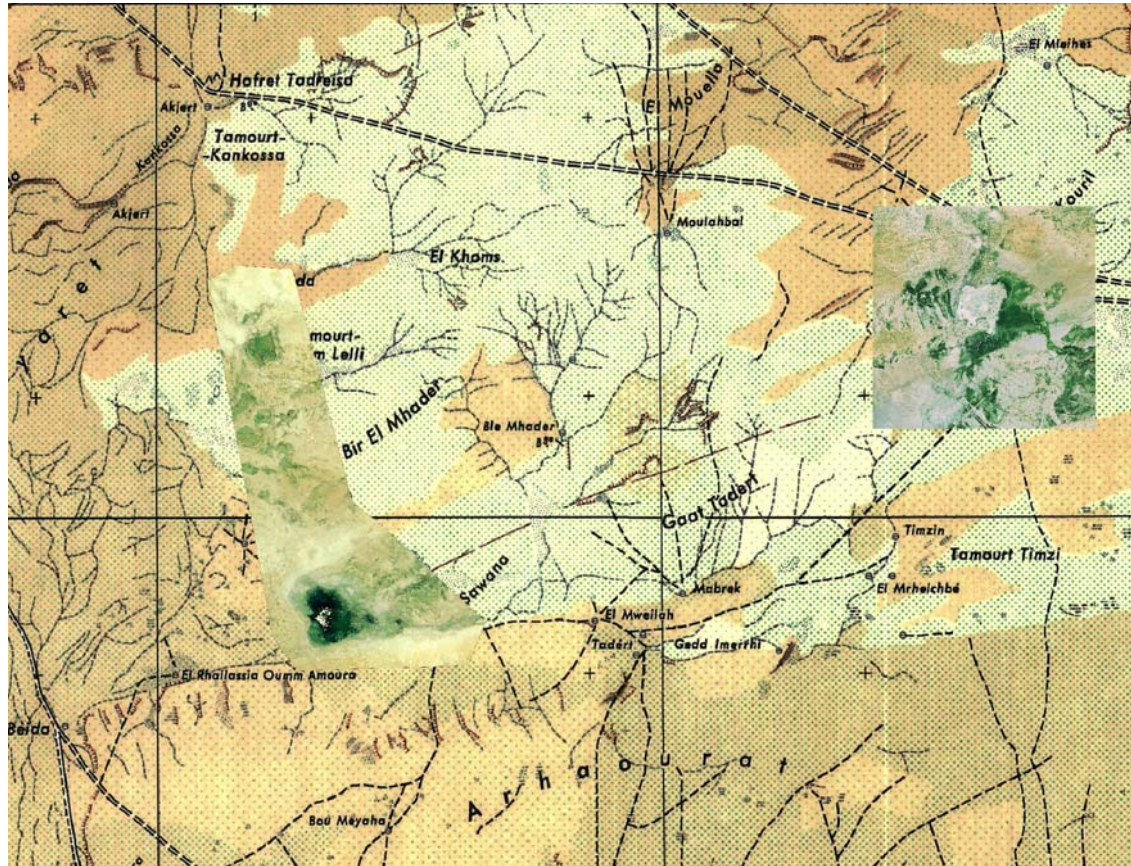ESRI Intl. UC, 18-22 June 2007
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2.5 Outcome: maps

Data include:

- Satellite imagery (Quickbird)
  - Digital pansharpened color images, 0.6 m resolution
- Survey data:
  - Socio-economic - including productive activities in agriculture, pastoralism, hunting and gathering
  - Toponymy
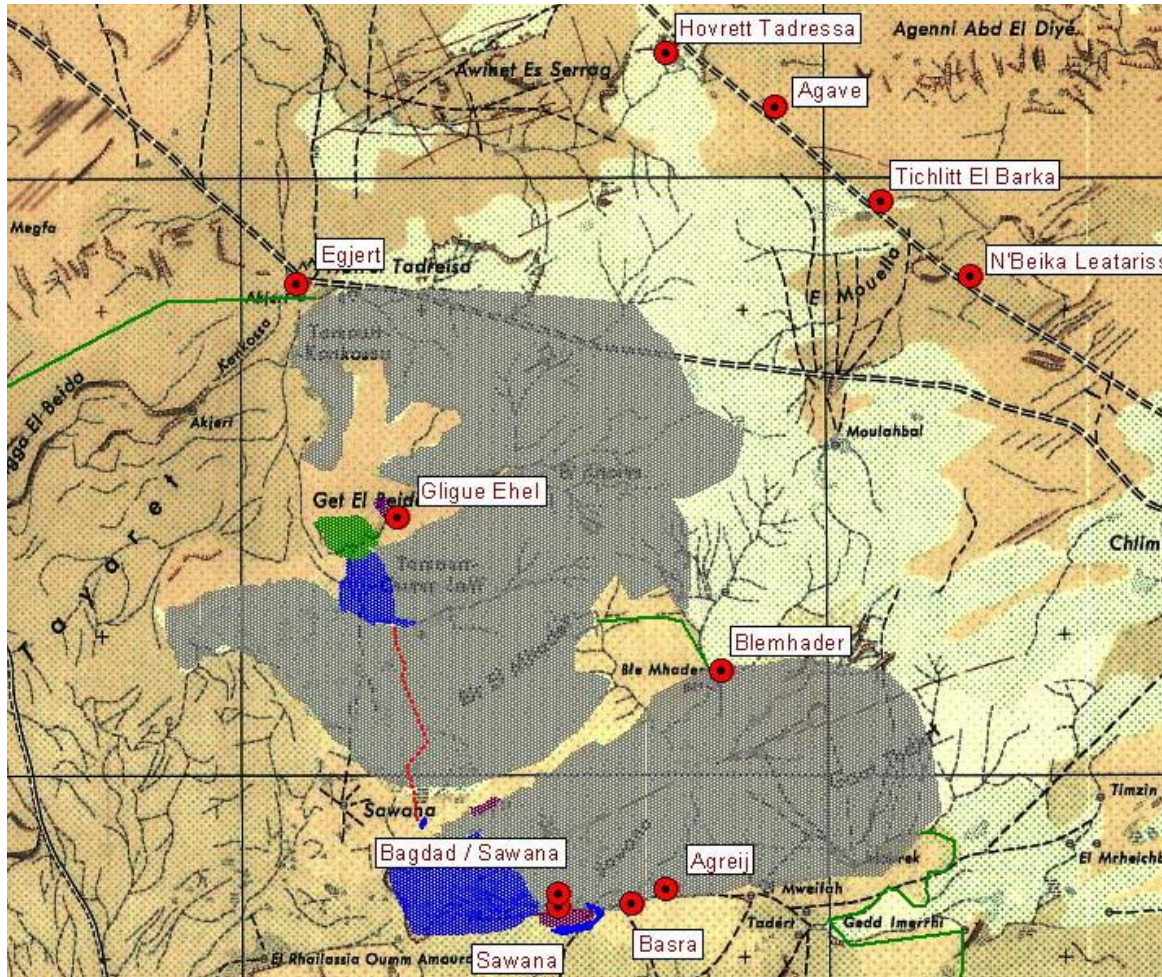 - Resource use - What, Whom, When, Where, Why, How

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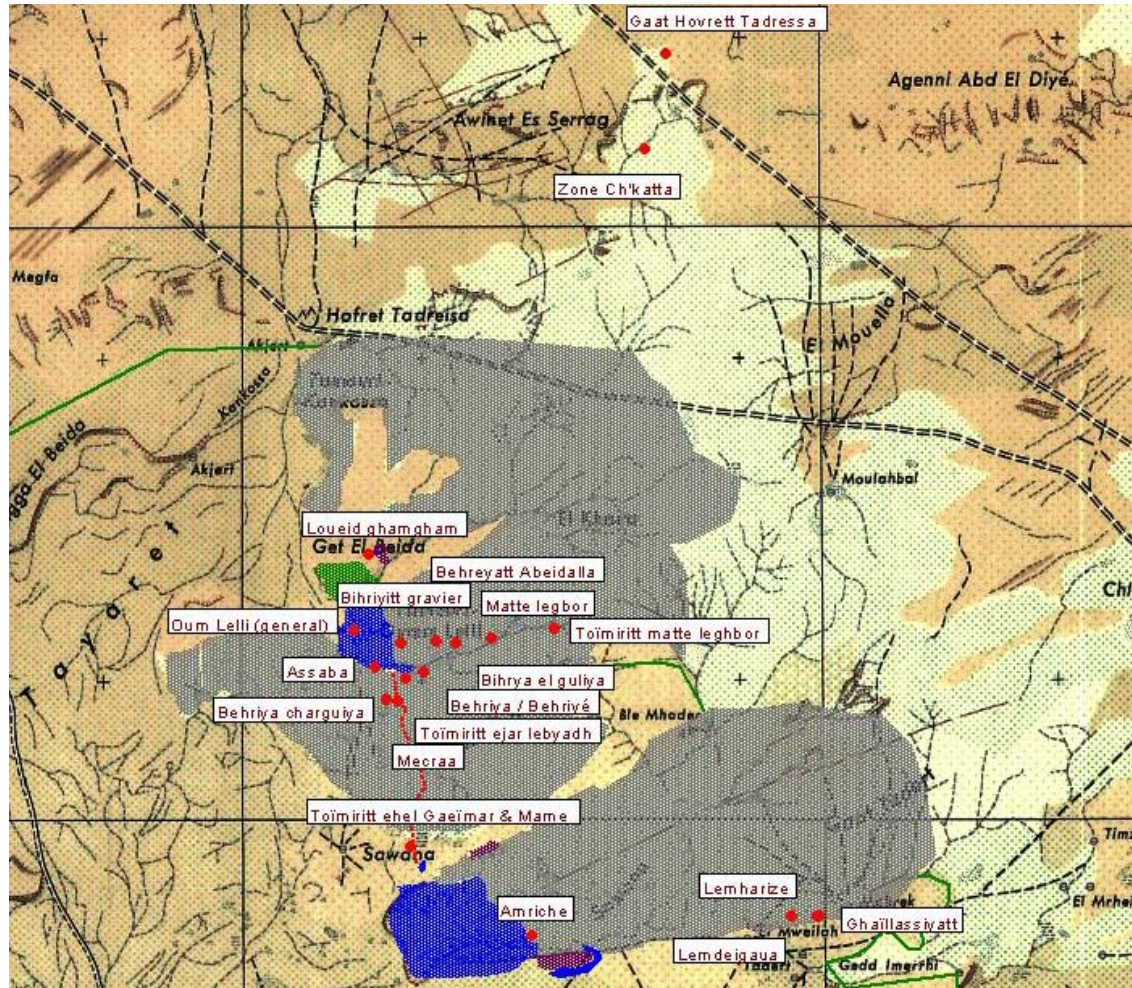Intl. Res. Group, USA

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3 Project Area: Overview

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Oum Lelli & Sawana: Overview

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3.1 Oum Lelli & Sawana: Research Site Communities

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3.2 Oum Lelli & Sawana: Toponymy

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3.3 Oum Lelli & Sawana: Resources

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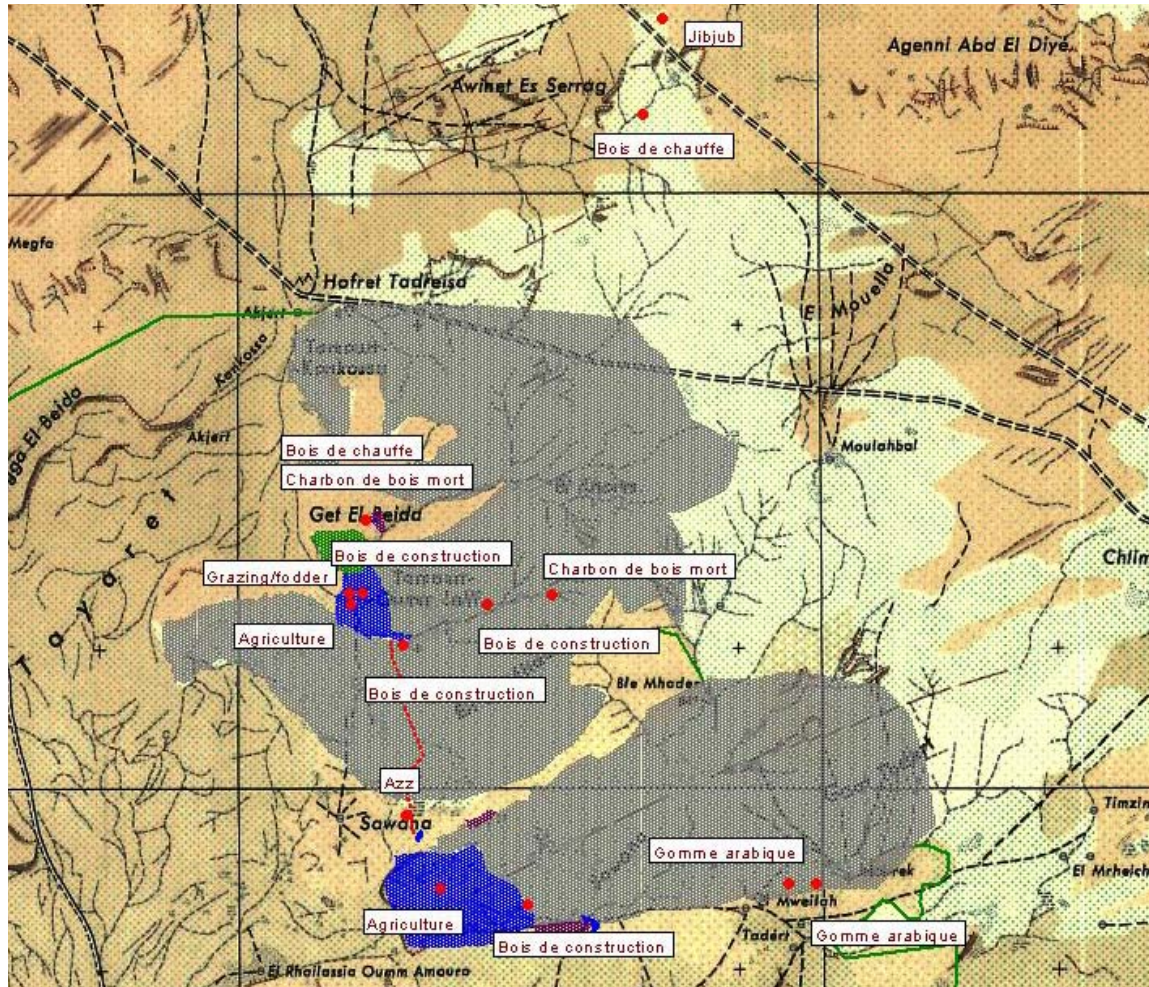
3.4 RIM Wetlands and ETA

- The 2003-04 survey a massive baseline
- Which variables to select to construct relevant environmental trends?
- Are these documented trends enough to produce reliable overall trends?
- Past ETA: TFT and Corona
- Future ETA: hopefully to be done, by another project

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3.5 Natural system variables

- Changes in vegetation cover
- Area under permanent agriculture
- Animals owned by sedentary farmers and pastoralists
- Characteristics of wetlands as ecosystems
- Climatic variables, incl. temp., rainfall, and position of the 400 mm isohyet

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3.6 Social System Variables, I

- Demography
- Decentralization and role of State
- Diminishing role of traditional law
- Privatization of land and water
- Changes in productive systems
- Absentee pastoralism and agriculture
- Increase in sedentarization
- Increase in valuation of land

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3.7 Social System Variables, II

- Decrease in respect for environmental protection

- Increase in infrastructure development

- Increase in conflicts

- Increase in outside concern with biodiversity protection

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4 Discussion

- Communication:
  - Expression and translation
- The "Capability Approach"
  - Peoples' capability to live the life they want
  - Education & secure property rights more important than technology and ICTs
- Societal and Developmental Role of GIS
  - Challenge: how to sensitize and humanize GIS to play broader role in public understanding, communication, planning and decision making
  - Scaling & aligning needs and means

5 Conclusions and Recommendations

- For ESRI
  - Increase accessibility and use
- FRAME ETA Core Team
  - Develop participatory GIS approaches
- USAID/FRAME
  - Continue to support relevant user-directed CoPs
- World Bank
  - KM and culturally sensitive GIS applications, Consider whole range of ICTs

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