

APPLICATION OF REMOTE SENSING IN NATURAL RESOURCES MANAGEMENT.

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Abstract

In the last 30 years, there has been noticeable changes in microclimates in many parts of the world. Rainfall amounts in some areas have significantly reduced resulting in severe droughts, while floods have ravaged other areas. Globally the levels of deforestation have risen to the all time high, estimated to be in the range of 11 million hectares of forests cleared annually. In Zambia, it is estimated that an average 250, 000 hectares of forests are cleared for various purposes every year. The effects of all these is degradation of land, loss of bio-diversity and ultimately reduced productivity and quality of life, with the most hit being vulnerable communities especially the rural people whose livelihoods are dependent on natural resources. 80% of the Zambian population, for instance is dependent on wood energy both in urban and rural areas. While the advent of Geographical Information Systems (GIS) has been widely acknowledged to be a useful tool in environment and natural resources management, there have been no serious efforts towards packaging it in user-friendly manner for the benefit of rural and productive communities. This paper attempts to highlight strides that have been made in the field of Remote Sensing and Geographical Information Systems and the benefits it presents to the cross-section of society and the wider environment.

INTERESTING - 8

INFORMATIVE - 7

PRACTICAL
USEFUL REALISTIC] - 5

(20)

**Community exchange and training in the Suid Bokkeveld: A pilot to
enhance natural resource management**
N Oettlé, A Arendse, B Koelle and A van der Poll

Paper Abstract

In recognition of the importance placed on engaging civil society and NGOs in the implementation of the UNCCD, the Global Mechanism in 1999 initiated a global programme to enhance local capacities for natural resource management and knowledge sharing. Called the *Community Exchange and Training Programme* (CETP), this initiative was developed in partnership with RIOD, the global network of NGOs involved in desertification mitigation work.

The CETP, designed as a capacity building initiative at the local level, brings together local communities, governments, donors and NGOs for exchanges of experience and best practices through a process of exchange visits, training and information sharing.

The Suid Bokkeveld community, located near Nieuwoudtville in the Northern Cape Province of South Africa, was chosen as a pilot for the CETP. The Suid Bokkeveld community is a resource-poor, dryland community whose livelihoods are based on sheep production and indigenous rooibos tea cultivation. The objective of the pilot was to enable community members to establish a range of integrated initiatives to improve their lives, and to promote the sustained use of natural and cultural resources. This was to be achieved by way of a process of knowledge exchange, facilitated learning and planning to be undertaken in partnership with appropriate support agencies. The processes were to be documented to enable learning from, and replication of the approach.

This paper highlights the process, opportunities and constraints in implementing the CETP pilot project. It also explores subsequent developments in the Suid Bokkeveld community. These include:

- ↳ the establishment of the Heiveld Small Farmers' Co-operative;
- ↳ the formation of a women's tourism group; and
- ↳ experiences of members of a farmer study group.

The contribution of these initiatives to enhancing the capacity of land users to sustainably manage their natural resources and in turn enhancing their livelihoods are also explored.

INTERESTING - 7
INFORMATIVE - 7
PRACTICAL
REALISTIC } - 7
USEFUL

(21)

Knowledge and ownership: experiences from the Mier LandCare Project

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The Mier community lives in the semi-arid Kalahari of South Africa. Approximately 5,000 inhabitants utilise 420,000 ha of grazing for sheep, goats, cattle and antelope. Land is used for communal grazing, a game ranch (managed by the local government) and individually managed stock ranches. The communal grazing areas have become desertified through overgrazing, and the game and stock ranches are considerably degraded.

Since 1991 a research project of the Range and Forage Institute of the Agricultural Research Council (ARC-RFI) has successfully rehabilitated degraded dunes and inter-dunes in the game ranch area. However, land users did not initially adopt the new technologies.

In 1999 a project was developed under the LandCare Programme of the National Department of Agriculture to enable community members to apply the technologies. Implementation was supervised by a local LandCare Committee that included community members. However, technical expertise of "outsiders" drove the project in its first phase. A paid labour force, drawn from the local community, undertook the physical work.

Technical success was achieved in rehabilitating significant areas. Nevertheless, local ownership of the project and technologies was poor. The project was perceived by community members as being primarily a source of employment for the poor.

Participatory Impact Monitoring (PIM) was subsequently adopted as the primary tool in project monitoring and evaluation, and has played a vital role in broadening the ownership of the project. The planning, implementation and evaluation processes were conceptualised as steps in a learning cycle.

Indicators of successful rehabilitation were identified by beneficiaries and applied in subsequent evaluations. Traditional knowledge of the beneficiaries was validated and enhanced.

Attitudes toward the project, and participation in shaping it improved and broadened through the PIM process. A "bottom-up" process has been engendered that can be sustained beyond the implementation of the LandCare Project.

INTERESTING - 7
INFORMATIVE - 7
PRACTICAL/REALISTIC } - 8
USEFUL

(22)

**CONTRIBUTION OF NGOs IN PROMOTING
ECOTOURISM IN DRYLANDS:
AN EXPERIENCE FROM SOUTHERN TUNISIA**

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ABSTRACT

Localised at the fringes of the Saharan desert and occupying a strategic site on the crests of the Matmata mountains, the village of Douiret has been a focal point of an old Berber culture. The remnants (ksour, troglodyte houses, ...) and many old hydro-farming structures still in function (jessour, cisterns, ...) are good indicators of a very rich typical drylands civilisation.

Founded in 1986, the ASNAPED has been working for the rehabilitation, conservation and valorisation of the agricultural, socio-cultural and tourist potentials of this village.

For the last five years and supported by national and international donors, the association have been executing projects which have the main components:

- Restoration of the old buildings;
- Rehabilitation of the drylands farming supported structures (jessour, cisterns);
- Creation of handicraft and natural museum;
- Installation of in-situ live collections for the local cultivated germplasm (fig, olive, date palm, etc.);
- Rehabilitation and improvement of the local-know related to the exploitation of the biodiversity (jam, dry fruits, etc.).

Meanwhile, it is also planned to integrate the village in the official travelling itineraries and to ensure its connection with the neighbouring attractive sites (Matmata, Chénini, Ksar Ghilane, and the arid park of Ain Dkouk).

It is expected that these projects would contribute to the generation of new income resources especially in the tourist and agriculture sectors while preserving the architectural and cultural characteristics of the village and the ecosystem equilibrium.

INTERESTING - 8
INFORMATIVE - 7
PRACTICALLY USEFUL
& REALISTIC } - 7

(22)

Forest Certification as a Tool Towards Timber Valuation in Formosa Province

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The Chaco Region has the largest area of natural forest and the lower life standards of Argentina. Formosa Province has 56.666 km² of natural timber, most of them in drylands. Its potential wealth is very much higher than the real one, as a consequence of an accelerated degradation. Extensive cattle raising and wood extraction without any planning nor management are fundamental causes of this degradation. Resource users prioritize these activities as opposed to a sustainable use because of the standing forest scarce value.

In order to be competitive to other land uses, the forest sustainable management must be valued and adopted by local resource users. Forest Certification is an alternative to increase timber value by giving access to differential markets and prices; and its viability has been demonstrated through a cost/benefit analysis among the present exploitation system (NPV = U\$S 35.931) and a certified system (NPV= U\$S 73.224).

Certification is an incentive to sustainable management, mainly through an increase of both log and standing forest value. The Certificate grants the appraisal necessary to encourage local farmers towards a sustainable management economically justified.

It is important to bring out that in this analysis, the valuation of a forest management system is uncompleted because it has considered only the on-site direct use values generated by only one species. To carry out a complete analysis, other direct and indirect use values must be considered, as well as off-site benefits and avoided costs for the regional society.

All these elements must be appraised and added to the total value of timber in order to give arguments for local producers productive decisions towards sustainable resources uses.

INTERESTING - 7

INFORMATIVE - 7

USEFUL]
PRACTICAL] - 8
REALISTIC]

(22)