RESIZING THE LANDUSE PATTERNS THROUGH ECOTOURISM FOR COMBATING DESERTIFICATION

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ABSTRACT

The landuse pattern and distribution dealing with ecotourism in Kuwait are briefly described. The role of climate and agriculture in resizing of desertification is also presented. A brief discussion of the regional and local size of desertification is also presented with comments on possibilities of coordinating ecotourism efforts to minimize the possible desertification in the region.

Landuse, Pattern, Distribution, Climate, Agriculture, Ecotourism, Resizing, Desertification,

Biomass burns and Desertification – Causes and Effects

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Biomass burns have originated on earth since the oxygen content of the atmosphere has risen above 13 vol.% and sufficient combustible material has been available. It is highly probable that huge fires with devastating effects on the environment were also not unusual in past geological periods [1].
The development of the human society, especially in the last decades, has, through industrial development, population growth and the drastically increased energy consumption connected therewith, led to anthropogenic influences of which the consequences are currently very difficult to estimate and are the theme of intensive interdisciplinary research and discussions. A big problem affecting large parts of the earth surface is the rapid spread of deserts or areas that are not suitable for agricultural purposes any longer. Basically, all countries with arid or semi-arid climates are affected by desertification.
The role played in this process by fire incidents is discussed intensively, but is still determined by many imponderables. While several ecosystems are dependent on fire, and these fires are periodically also induced by natural causes (lightning), the majority of fires are, intentionally or unintentionally, set by human doing, and so interfere with existing ecological balances. Little research has been done on the chemical reactions during and after the fire, as well as in the fume clouds, and just as little on the pollutants released and their possible influence on distant ecosystems [2].
On the basis of selected examples of grass functional types commonly occurring in southern Africa (*Eragrostis curvula, Themeda triandra, Aristida congesta*), this study has investigated the primary biomass reactions (pyrolysis and incineration) and focussed especially on the transformation of the halogen compounds naturally occurring in plants.
Preliminary results show that a part of the mainly inorganically bound existing halogens (salts) is transformed into organically bound halogens, which then reach the atmosphere in highly volatile compounds and are there subjected to further reactions and transport processes. An essential starting point of our studies was the connection between pyrolysis and incineration processes during a fire. Apart from the use of fresh and dried experimental plant samples, the reaction conditions were varied in a wider parameter to imitate natural conditions as extensively as possible. During the investigations, it was attempted to provide a detailed carbon balance as well as a complete as possible chlorine balance of the pyrolysis and incineration experiments. The resulting gases were analysed by gas chromatograph.
The presence of olefins and chlorohydrocarbon gases in the incineration and pyrolysis gases show that the formation of chlorohydrocarbons in the fume cloud as a reaction resulting from the fire is highly probable. Thereby substances are released that are able to form plant pollutants (e.g. trichloroacetic acid, TCA) in follow-up reactions and in so doing could, through long-term stress, limit the production of plant biomass and thereby hasten desertification.

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PAPER OR POSTER presentation

INTERESTING 8
INFORMATIVE 8
PRACTICAL REALISTIC 7
USEFUL

(23)

PROMOTING MODERN BEE - KEEPING AND DOUM PALM (HYPHAENE THEBAICA) PRODUCTS AS ALTERNATIVE LIVELIHOODS FOR COMBATING DESERTIFICATION IN NIGERIA'S DRY BELT

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The paper reports the role of two separate communities in Nigeria's dry belt, in the practical utilization and management of natural resources in their localities to enhance alternative livelihoods, while at the same time combating desertification. The paper uses field evidence to demonstrate that combating desertification implies combating or alleviating poverty among relevant stakeholders. The implicated natural resoures are honey bees and forests (for bee - keeping) on the one hand, and hyphaene thebaica (doum palm) on the other, which supports the collection, production and sale of a wide range of products that guarantee sustainable economic self-reliance among rural inhabitants who control these resources. The paper further demonstrates the transition from traditional bee-keeping by the communities studied, with its attendant negative environmental consequences inluding the acceleration of the process of desertification through tree felling for honey harvesting to modernized bee - keeping techniques which have the following salutary effects.

i. Enhancement of the culture of tree planting and forest conservation;
ii. Higher or enhanced honey yield per bee - hive;
iii. Strengthening of the group or community spirit for the pursuit of activities for economic self-reliance.
iv. Enhanced income - generation viz-a-viz possible incomes from the peasant farm sector; and
v. Sense of complementarily of roles between the farmer and the bee - keeper, leading to collective interest in natural resource conservation.

The study also demonstrates that the doum palm (hyphaene thebaica) is cherished and conserved as a wild resource by community members, in Northern Yobe State of Nigeria. This arises from its economic potential as the source of raw material for a variety of non-farm activities, which include the making and sale of mats, fans, brooms and ropes. These products are traded by community members both internally and across the borders in neighbouring Chad and Niger Republics. The study interestingly highlights the roles played by natural, social, human, physical and financial *capitals* in the production process of these activities. These critical *capitals* enhance sustainability of livelihoods in the study area.

The study utilizes abundant field evidence to argue that there is significant economic, environmental and social incentives in the practice of bee - keeping and the exploitation of the products of the doum palm. They all involve the conservation of renewable natural resources which represents a strategy for combating desertification as well as substantially alleviating poverty through the pursuit of these alternative non-farm livelihood activities.

INTERESTING — 8
INFORMATIVE — 8
USEFUL PRACTICAL REALISTIC — 8

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Political Economy Modelling of Common Property Management to Combat Desertification: On Mandatory Tree Planting to Cure Soils from Salinity

Ernst-August Nuppenau*

Abstract:

Many farming areas in the arid tropics and subtropics are characterised by increasing salinity. These areas include land farmed with traditional methods, poorly managed rain fed land under semi-arid conditions, and modern, extensively or intensively used irrigated land typical for commercially overexploited regions. Intensification of agriculture due to population pressure and increased economic incentives due to land development have contributed to salinity in many desert prone areas. Today salinity threatens extensive tracks of land in arid and semi-arid regions thus becoming a serious problem that basically leads to further desertification. Surface and ground water systems as well as deeper aquifers are often heavily polluted with salt. Salt accumulation is a largely uncontrolled externality of plant production practices inappropriate under certain soil conditions and poor common property management. High salt contents reduce productivity as a common-pool externality. In particular small-holders with low technological levels, short-term needs for agricultural products, and capital constraints have the tendency to over-exploit water. Additionally, the potential of soils to recuperate from salinity declines over time. Due to the immanent common property problem of water and soil, soil protection has high transaction costs and non-point-pollution is common. Because of high salinity, short-term resistance of plants to water stress and the long-term use of the soil are negatively effected. Concerning causes of pollution, overuse of water, subject to high evaporation and without amelioration methods, is regarded as the main cause for the continuation of problems.

Environmental regulations for water use and farm practices, such as limitations in water dosage, specific plant rotations etc., are normally not in the direct interest of small-holders, since they reduce current income and are difficult to monitor. Also, benefits often have to be shared. However, for the regeneration of soils, by methods such as fallow, tree planting maybe an alternative. In particular, tree planting to extract salt and to minimise shocks due to droughts, has recently gained interest in public management as a low cost solution. But tree cover also reduces cropping area and implies long-run considerations on sustainability instead of short-run exploitation. Though tree planting in a community fallow scheme is a viable option (even for purification of degraded soils), voluntary willingness to participate is often nearly nil due to 'tragedy of the commons' problems. In the dynamic context of salinity, resulting from multiple polluters and accumulated, damage on soils depends on stocks and flows of pollutants. The paper presents a model that accounts for salinity in the short and long-run. It explores different levels of mandatory tree planting against salinization by farmers. As a dynamic model, it is designed to control farm activities and reduce salinity in a community to combat desertification.

The paper applies a dynamic control frame, in which a manager optimises the use of the common property (fallow) in seeking to achieve an agreed level of minimal salinity. On behalf of the community he decides within a political economy setting on tree cover on farms. The model depicts the bargaining process for establishing a community objective function that includes the manager's objective function. He is a partial manager, not a benevolent dictator. But, he has statutory power to regulate tree planting. Farmers can harvest organic matter from trees grown on fallow and benefit from sales. Benefits are derived from a better soil quality that uniformly benefits members. Concerning institutions, the approach investigates the tragedy of the commons and statutory regulations. Financial innovations for compensation are also included.

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INTERESTING - 8
INFORMATIVE - 7
USEFUL PRACTICAL REALISTIC] - 5

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KNOWLEDGE AND EDUCATION IN THE RURAL AREAS IN SINDH.PAKISTAN.

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ABSTRACT.

The Bristish rules Sindh for nearly a century from 1843 to 1947.They opened primary schools in rural areas where teaching was in local languages for period of 8 years.But it was optional that children after education for first five years could go to high school where some subject were taught in the last three years of primary school in additional subject English had to be learnt in all these three years.Since with exception of town having population of more than 5000 the number of girls was too small to open seprate school for girls, so in the rural areas co-education existed. The vanicular final examination which take place after 8 years study was much more difficult than even matriculation(higher school graduation).Very few boys could pass the examination and only occasionally a girl pass. The syllabus in the primary school consisted of local languages, its pros, potery and grammer, earthmatic, geometry, account-keeping, geogrpahy from the county level to the World, history of the province or State India and British Empire, science consisting of human physiology, physics, general science etc. This had a great impact on boys and girls who became scientific minded, rational thinking, analytical power, some knowledge of the wild World and insite into the past.

After Independence of the country the syllabus was revised, education after the first five year ended into high school education .The primarly school syllabus was revised.History, geography and science were replaced by religious education, Pakistan studies, science coursed were cutted. Mathmatics ans sciences were not compulsary for graduate school (high school).Seprate school were started for girls in town as well as in the villages. Teachers were not formally trainned and competent.This was more so in the girls schools, they are incompetent girls taught the various subject.The education detoriated more so for the girls.

Without drastic change in the syllabus, competative examination, the standard of education of women will not improve and their knowledge will remain limited for a civilize society.

INTERESTING — 7
INFORMATIVE — 7
20
PRACTICAL
REALISTIC } — 6
USEFUL

Water development strategy as a driven force for local communities sustained rangeland management in sub-saharan Africa

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Abstract

Water is the major food component for the maintenance of animals. Although Africa is endowed with diverse agricultural environments, survival of animals in sahelian and sub-Sahelian Africa is threatened by the lack of water. Animals need water as an essential nutrient, a component of the body, and for conductive or evaporative cooling. Water needs are met mainly through drinking free water and to a lesser extent by utilising water that forms part of the feed. However during the long dry season surface water resources dwindle and the water content of available forage decreases, thereby increasing the animal's demand for water. Consequently animals have to walk for long distances to obtain adequate feed and water. Moreover additional walking raises feed and water demand, as increased muscular activity requires additional feed and generates extra heat that has to be dissipated. Water can be used to direct and regulate rangeland management in this open access environment, to maintain range resources and improve its quality. Water development, which takes into consideration usable forage, despite some intra or inters annual variability, plays an important role and its spatial distribution will affects grazing intensity of forage resources. Sound water development and management strategy integrating local communities in the decision making will set up a firm basis for sustained range management in free and open access environment of sub-Saharan Africa where lack of financial input, social and cultural habits and above all the environmental condition do not permits large scheme fencing as in others parts of the world.

Keywords: water development; water requirement; domestic ruminant; sustained rangeland management; sub-Saharan Africa;

INTERESTING — 7

INFORMATIVE — 6

(19)

Should be in Land Tenure & Management

PRACTICAL
REALISTIC
UTILITY
} — 6

The influence of stocking rate & cattle type on the condition of the herbaceous layer in the Camel Thorn Savannah of Namibia

by

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Abstract

Research was done in the Camel Thorn Savannah of Namibia over the period 1984-1992 with four fixed stocking rates (45, 35, 25 & 15 biomass per hectare) & two cattle types (small-framed Sanga & large-framed Simmentaler crossbreeds) , with the view to determine the influence of these treatments on the condition of the herbaceous layer.

Considerable changes occurred in the percentage basal cover of the perennial grass component over the experimental period. From 1984 (baseline survey), the percentage basal cover of the perennial grass component decreased considerably from 1.11% for the small-framed treatments & 1.18% for the large-framed treatments component again increased to 1.16% and 1.10% for the small framed and large framed cattle types respectively. No significant differences occurred in the change in percentage basal cover of the perennial grass component between stocking rates and cattle types. Rainfall between years had a significant influence on the change in the percentage basal cover of the perennial grass component.

In terms of botanical composition, grass species tend to react quite differently to rainfall and treatment. The "highly desirable" grass component decreased in percentage frequency, irrespective of cattle type and stocking rate. Just the opposite happened with the "desirable" grass component over the same period. The percentage frequency of the "desirable" grass component tended to increase over all the different treatments and years, with only minor difference between treatments. The "less desirable" grass component reacted again differently, in that it seems to be much more directly affected by the variation in rainfall. The "undesirable" component also decreased considerably over the project period.

Although these data represent changes over a relatively short period of time, it is clear that changes in rainfall had a much stronger influence on both botanical composition and basal cover than either stocking rate or cattle type. It should, however, be stated that these results were obtained under above average management and the veld condition at the start of the project was excellent, as compared to the average condition of veld in the adjacent commercial areas. It is anticipated that the influence of cattle type and stocking rate might increase as the project continues. During extremely dry years, the influence of cattle type and stocking rate might be more visible in animal production and reproduction parameters, than in veld parameters.

REPORT

9TH CONFERENCE OF THE
INTERNATIONAL SOIL CONSERVATION ORGANISATION (ISCO)
Bonn, Germany 26 - 30 August 1996

TOWARDS SUSTAINABLE LAND USE
Furthering Cooperation Between People and Institutions

by Bertus Kruger[1] and Mary Seely[2]
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Desert Research Foundation of Namibia

The 9th Conference of the International Soil Conservation Organisation (ISCO) took place in Bonn, German on 26-30 August 1996. The meeting was attended by over 800 people from 120 countries. Over 450 papers and posters were presented in 50-60 workshops and parallel sessions. The overall theme of the conference was: Towards Sustainable Land Use - Furthering Cooperation Between People and Institutions. The objectives of the conference are summarised in the following excerpt from the Introduction to the programme:

> *Rapid depletion of soil fertility and non-sustainable land use particularly in developing countries is both the case and the consequence of the widespread poverty. The challenging question is how to improve self-help capacities for natural resource management in order to solve these problems. ..... Sustainable land use is based on ecological and social sustainability as well as on economic viability of a given land use activity in a given context. Particular emphasis will be placed on the ecological dimension of sustainable land management and on ways of achieving it.*

The Namibian contribution from the two authors of this report was varied. Working with Dr Helmut Woehl, GTZ advisor to the NAPCOD programme, a booth was prepared for the 'Dare to Share Fair'. This included five posters presenting the environmental situation in arid Namibia and the several programmes addressing sustainable use of this environment. The posters highlights the activities of SARDEP (Sustainable Animal and Range Development Programme) and NAPCOD (Namibia's Programme to Combat Desertification) and presented the Integrated Natural Resource Management Forum wherein these two programme have joined together with the CAWS (Communal Area Water Supply) and CBNRM (Community Based Natural Resource Management) programmes to address the overall objective of sustainable resource management. The booth included a display of pamphlets and books from the participating organisations and the screening of several videos concerning desertification, training to combat desertification and the Namibian environment.

In addition, Bertus Kruger contributed a poster paper entitled 'Closing the Gap Between Farmers and Support Organisations in Namibia' to the session addressing Institutional and Organisational Capacity Building. Kahepako Uariua-Kakujaha and Mary Seely presented an oral paper entitled 'Raising Awareness about Desertification within Namibia's Rural Population' to the session addressing Principles and Strategies of Participation and Cooperation. Abstracts of both papers have been published in the proceedings and full papers have been submitted.

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Envelope-to: ceciliad@drfn.org.na
X-Sender: alliedbda@195.24.208.2
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Subject: My Abstract for Desertification 2002.

From: Njuakom Nchii Francis
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To: Cecilia de Klerk
Email: ceciliad@drfn.org.na
Subject: My Abstract for Desertification 2002.
Date: Thurs 21 Mar 2002.

Dear Cecila de Klerk,
Thanks very much indeed for requesting a copy of my abstract. Here is the abstract as requested: after you receive my abstract, I will like to know if I have been granted a scholarship to attend the conference. If so what further preparations are my expected to make now?
Name of Presenter: Njuakom Nchii Francis.

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ABSTRACT:

This paper examines and analysis the effects that the extension of the Sahara Desert that has a greater portion in Cameroon, is doing to the climatic conditions of the areas in and around it and also the effects on the surrounding population. It focuses its attention on the strategies that both non governmental organizations and the local populations are doing to make sure that the calamities caused by the desert are being arrested. The paper equally takes a look at the intervention strategies that the government of Cameroon, and that of the republic of Chad are adopting to combat this situation.
The paper presents in detail also the effect that continuous aridity and the destruction of the forest has caused the population of the Cameroon. The present shortage of electricity all over Cameroon, from time to time, is synthesized in this report with the reason that dryness has brought about low volumes of water, the disappearance of so many rivers, and the absence of trees that could produce underground water.
The argument in the paper points out with the conclusion that serious intervention initiatives, through collective actions in the green sector, much nearer the desert will help to stop the desert from extending south wards. A lot of trees are import to be planted in desert areas and if this is done day in day out it will be one of the major solutions to combat deserrtification as community based education in this area will be an added asset.

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