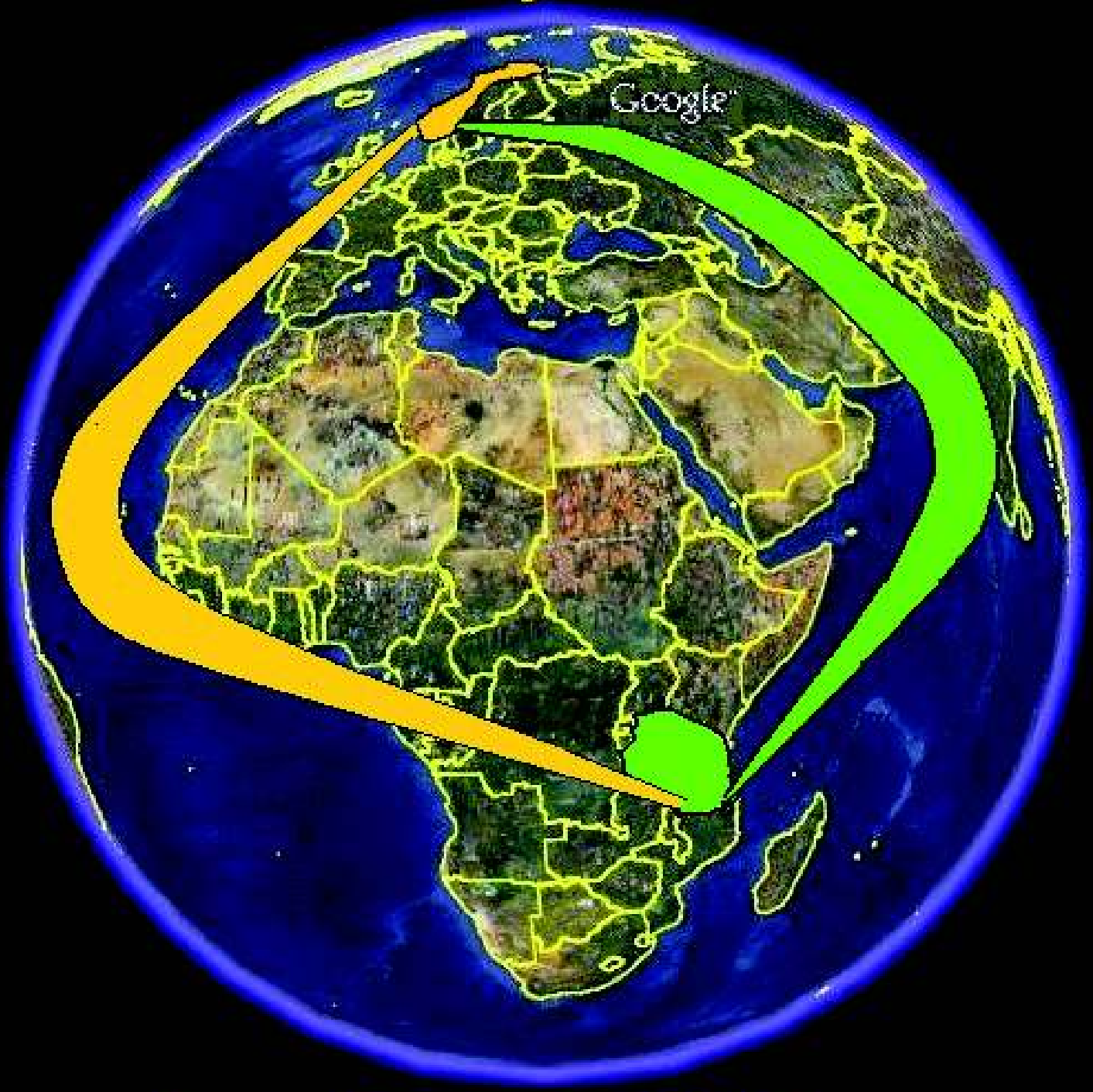
CDM Carbon Sink Tree Plantations
A case study in Tanzania



Blessing Karumbidza & Wally Menne

Timberwatch Coalition www.timberwatch.org

About Timberwatch

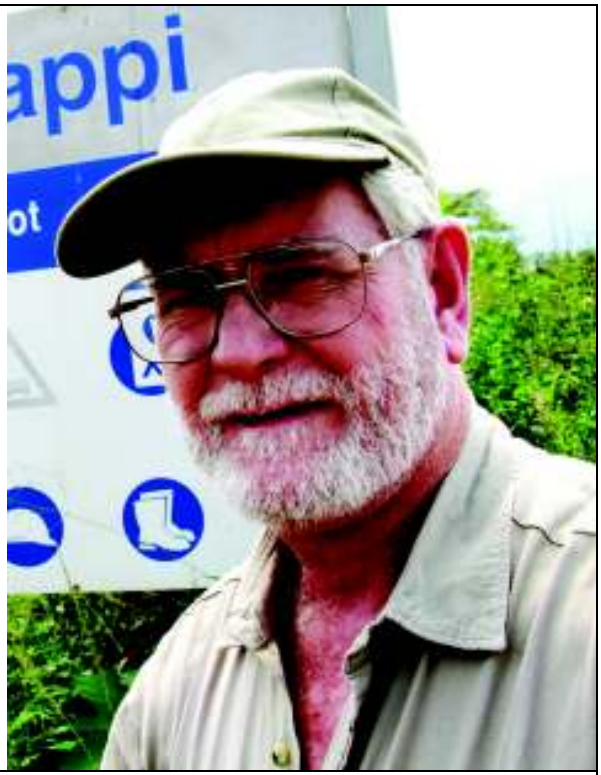
The Timberwatch Coalition was established in 1995, to bring together South African NGOs and individuals that were concerned about the negative effects of industrial tree plantations. Tree plantations in South Africa are grown to produce timber and paper products mainly for export, and do generate income that mainly benefits the multinational paper companies that own the plantations and pulp mills. However they also cause substantial environmental damage, besides affecting local communities and rural economies negatively.

The coalition has a membership of 14 South African NGOs and a wide network of individual supporters that serves as its 'eyes', especially in remote regions where tree plantation owners often violate environmental laws. It is also concerned about the spread of tree plantations into other African countries, and is able to offer critical analysis of the potential for new tree plantations to harm the environment, and impact on local communities.

Timberwatch has been researching forest policy related issues including FSC certification; climate change responses like agrofuel crops, CDM carbon offsets, GE (genetically engineered) plantation trees and REDD; and the negative impacts of tree plantations that lead to community displacement and impoverishment; biodiversity loss, land degradation, wildfires and water resource depletion and pollution, since 1998.

Timberwatch is a member of the Global Forest Coalition (GFC) and has been its African NGO Focal Point since 2007. See: www.globalforestcoalition.org

Blessing Karumbidza



Wally Menne

The authors

CDM carbon sink tree plantations in Africa: A case study in Tanzania

Blessing Karumbidza and Wally Menne

The Timberwatch Coalition

This study dissects a tree plantation carbon sink project at Idete in the Southern Highlands of Tanzania.

The Norwegian company that owns the project, Green Resources Ltd, aims to register the project under the CDM (Clean Development Mechanism) so as to be able to generate carbon credits to sell to the Norwegian government.

The plantation is already being established, and in the process it will destroy over 6 000 hectares of grassland, reducing community access to grazing, biodiversity resources, water and cropland.

The study will describe and discuss the impacts of the project on local communities and the natural environment.

Acknowledgements

Together with its associated research and reports, this project, was made possible through the generous support of the Siemenpuu Foundation in Helsinki, Finland.

The assistance of Envirocare in Dar es Salaam with arranging workshops and field trips during our visits to Tanzania was invaluable. Special thanks are due to Ms Loyce Lema, Executive Director, Mr Michael Mushi, and especially Mr Abdallah Mkindi, who assisted in many ways, including with translating and co-ordinating the field trips which could otherwise not have been as productive. Envirocare has also contributed a section to this report. Our sincere thanks go to the community members and leaders, NGO representatives, managers and workers at Green Resources Ltd, and government officials who welcomed us and shared their views and experiences.

Our thanks also go to Rehana Dada for valuable assistance with editing and layout.

The information and views in this report are those of the authors. Where the ideas of others are cite or quoted, they are duly referenced. This report does not necessarily represent the position of the Timberwatch Coalition, its donors, or other contributors.

February 2011

"Forests are complex tree-dominated ecosystems with particular structural biotic and abiotic components, assembled within temporal and spatial limits and with a self sustained successional dynamic determined by each forest's biodiversity."

Forest definition of the Global Forest Coalition – www.globalforestcoalition.org

"A piece of land with a minimum area of 0.1 hectares, with a minimum tree crown cover of 15% or with existing tree species having the potential of attaining more than 15% crown cover, with trees which have the potential or have reached a minimum height of 2.0 meters at maturity in situ ".

Ghana's national forest definition lodged at the UNFCCC Secretariat in 2007 https://cdm.unfccc.int/DNA/cdf/files/2008/1706_ghana.pdf

(Tanzania has not yet submitted its national forest definition to the UNFCCC)

Contents

Part 5: Lessons from South Africa

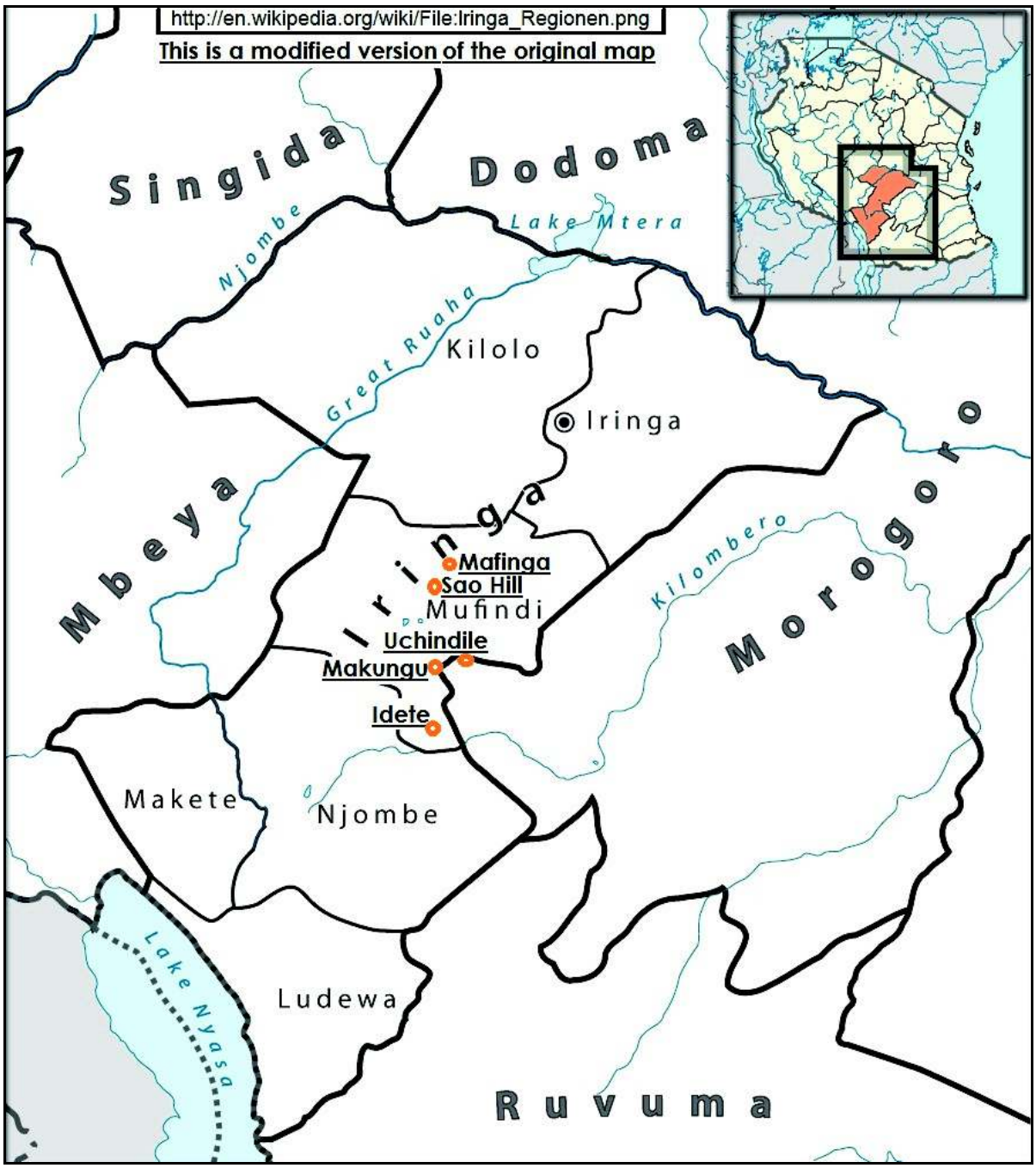
Part 6: Environmental impacts of tree plantations

Part 7: Socio-economic and cultural impacts

Abbreviations

AFOLU	-	Agriculture, Forestry and Other Land Use
ARR	-	Afforestation, Reforestation, Revegetation
CAR	-	Corrective Action Request
CB	-	Certification Body
CBD	-	Convention on Biodiversity
CCBA	-	Climate, Community and Biodiversity Alliance
CJN	-	Climate Justice Now!
CCS	-	Carbon capture and storage
CCS	-	Centre for Civil Society, Durban
CDM	-	Clean Development Mechanism
CER	-	Certified Emission Reductions
COP	-	Conference of Parties
DBH	-	Diameter at breast height
DOE	-	Designated Operational Entity
DRC	-	Democratic Republic of the Congo
EB	-	Executive Board at the UNFCCC
EIA	-	Environmental Impact Assessment / Environmental Assessment
ER	-	Emission Reduction
FAO	-	Food and Agriculture Organisation of the UN
FOE	-	Friends of the Earth
FPIC	-	Free, prior and informed consent
FSC	-	Forest Stewardship Council
GFC	-	Global Forest Coalition
GHG	-	Greenhouse gases
GIS	-	Geographic Information System
GPS	-	Global Positioning System
GRL	-	Green Resources Limited
IFC	-	International Finance Corporation
IFP	-	Idete Forest (plantation) Project
IPCC	-	Intergovernmental Panel on Climate Change
KP	-	Kyoto Protocol
LULUCF	-	Land use, land use change, and forestry
NGO	-	Non Governmental Organisation
PDD	-	Project design document
REDD	-	Reducing Emissions from Deforestation and Forest Degradation
SGS	-	Société Générale de Surveillance
TFCG	-	Tanzania Forest Conservation Group
TIC	-	Tanzania Investment Corporation
Tshs	-	Tanzania Shillings
TW	-	Timberwatch Coalition
U&M	-	Uchindile and Mapanda
UN	-	United Nations
UNEP	-	United Nations Environmental Programme
UNFCCC	-	United Nations Framework Convention on Climate Change
VCS	-	Voluntary Carbon Standard
VER	-	Verified Emission Reduction
VER	-	Voluntary emission reductions
WB	-	World Bank
WRM	-	World Rainforest Movement
WWF	-	World Wide Fund for Nature

Map of study area



The study area is in the Mufindi region of Iringa province, in the Southern Highlands. The main focus of this research is an area to the north of the village of Idete, where more than 6000 hectares of biodiverse grassland is in the process of being converted to industrial plantations of pine and eucalyptus trees. The study also looks at the impacts of existing tree plantations including at Sao Hill and Uchindile.

Tanzania (inset) is a large country of 88 million hectares, supporting a population of 43 million people (FAO). 80% of the population depends on subsistence agriculture for its livelihood, as well as access to wild meat, fruits and herbs, and medicinal plants. The loss of such natural resources can undermine rural subsistence systems and economies and lead to migration from rural areas to urban, especially the larger cities, which are already crowded and struggle to provide services to their people.

Overview

The main aim of this report is to question the claims made by Green Resources Ltd (GRL) in pursuit of CDM registration for its Idete project, as well as to expose and highlight the problematic nature of market-based climate change mitigation projects. Research has been undertaken to establish the veracity of GRL's claims, and where necessary to illustrate their inaccuracy. Findings from studies on tree plantation afflicted areas in other countries were used for comparison and to inform the Tanzanian study so as to identify common issues and trends and therefore help establish the likely impacts of similar tree plantations in Tanzania.

A multi-pronged approach is used. An initial desktop study surveyed available literature on CDM tree plantations in Tanzania and information on the impacts of existing tree plantations. It also addresses potential impacts on the natural environment (biodiversity and ecology) of the area, together with the likely impacts on local people who have already been displaced from their land, or will be displaced due to future CDM plantation project activities.

A preliminary report was released in December 2009 and distributed via the Timberwatch website. It was publicised during UNFCCC COP15 and thereafter at other meetings with flyers and hardcopies, as well as through focused listserves, websites and publications.

Blessing Karumbidza & Wally Menne: Potential Impacts of Tree Plantation Projects under the CDM- An African Case Study
http://timberwatch.org/uploads/Draft%20Plantation_Projects_under%20CDM%20-%20Blessing%20&%20Wally(1).pdf

Field studies were conducted in January and May 2010, with researchers from Timberwatch and Envirocare visiting the study area. Meetings were held with stakeholders, including affected communities, NGOs, company representatives and government officials, to solicit their perspectives on the research topic. The claims of Green Resources Ltd as well as our postulations could then be tested on the ground, using a participatory approach.

In order to understand the potential impacts of the already planted or still to be planted tree plantations at Idete, the impacts of older existing plantations in the areas leased by Mufindi Paper Mills and Sao Hill Industries are assessed. Taking account of the negative experiences of other communities, questions were asked to establish the perceived impacts of plantations, and among other things, whether food security and access to medicinal plants might be reduced, if water resources might be depleted, and how this could affect the Idete community.

It is against the information and sentiments raised in conversations with community members that the claims of Green Resources Ltd about local development and benefits are evaluated, and thus conclusions as to whether the information they have provided in the Idete CDM project description document (PDD) as well as other documents, including the company's website is reliable and accurate. Valuable information has been obtained from reports and newsletters of Norwatch, a project of the Norwegian NGO 'The future in our hands'.

The claimed carbon sequestration "additionality" of the Green Resources Ltd tree plantation projects has been questioned using a 'cradle to the grave' approach to identify all activities that might contribute additional leakage from the project. Certain information and statements from Green Resources Ltd including those alleging the "degraded" state of the Idete grasslands have been evaluated against other information sources to arrive at better informed conclusions.

The fieldwork

Field trips were made to Idete during January and May of 2010. Feedback workshops were held with NGOs and other stakeholders in Dar es Salaam, Iringa, Mafinga, Sao Hill, Mgololo and Idete. These meetings served as spaces for two-way information sharing, especially in respect of providing background information to participants. The second field trip in May also provided an opportunity to fill information gaps and confirm findings from the first visit.

Their main purpose was to establish contact with NGOs, government officials and institutions involved in, or having an interest in the environment, community development, timber, land and environmental justice sectors. The trips also included meeting local players in the timber sector, Green Resources Ltd and Mufindi Paper Mills. The most important objective was to contact and seek audience with stakeholder communities, including at Idete where tree plantations have proliferated. This research aims to assess existing and potential social and environmental impacts of the Idete tree plantation project, including economic, social, cultural and ecological sustainability aspects, and impacts on water and biodiversity. It will also interrogate the claims of carbon sequestration made in support of registering GRL's Idete plantations as a CDM project.

Time and travel challenges

The great distance between Dar es Salaam and Idete, and poor roads between communities, meant that much time was spent travelling. However the field work was productive thanks to the efficient co-ordination and arrangements for meetings and workshops made in advance by Envirocare. The data gathered can provide indicative results, confirming our understanding of the impacts of timber plantations in general and their potential effects on communities. A deeper understanding of the issues will require more time and resources. To gain better insight to the social and environmental dynamics at Idete, and to move beyond extrapolating impacts from other studied sites should involve local researchers who can access the site more easily. Data need to be gathered over an extended timeframe to make findings more scientifically and methodologically defensible. The value of investing in such a venture would be in obtaining information that could contribute to the knowledge basket on these issues and help inform policy and development strategies in Tanzania and East Africa.

Language issues

Tanzania has low literacy levels, even among its youth, and it is worse in rural areas. In field work that emphasises narratives, stories, and testimonies of experiences, language is important. Tanzania's main language is Kiswahili. The researchers required an interpreter, which removed the advantage that ethno-methodologies have over other research methods. Nuanced cultural expressions get lost in translation. This is most relevant in regions where communities are trapped in a cycle of poverty characterised by a lack of alternatives and an inability to articulate their development dreams in a manner aligned with global development agendas. With such limitations, the voices of the poor will be drowned in the swamp of 'progress' and 'modernisation', and they will be subjected to and subjugated by outside visions and models of development that fail to consider local priorities.

Our NGO partner in Tanzania

Envirocare is an active and interested player in development and community processes within Tanzania, but does not yet have a specific focus on building co-ordinated and specialised expertise and intervention capacity in relation to environmental and community aspects of the tree plantation and rural land use sectors. To achieve this will require a clear understanding of the issues, together with an interest in, enthusiasm for, and dedication to these issues. Timberwatch hopes to assist with a future workshop and training exercise in Dar es Salaam, for NGOs, educational institutions and government departments, to share knowledge and experience. There is also a possibility of Timberwatch hosting an intern from Tanzania to work with the coalition on projects in South Africa.

Introduction

Background

This study investigates a tree plantation project of Norwegian company, Green Resources Ltd (GRL), at Idete in the Mufindi district of Iringa province in southern Tanzania. It raises critical questions about the sustainability and viability of alien tree plantations that are intended for carbon sequestration in terms of the Clean Development Mechanism (CDM) of the Kyoto Protocol (KP) of the United Nations Framework Convention on Climate Change (UNFCCC). These plantations are incorrectly termed as 'reforestation'. The KP commits industrialised nations that have ratified the Protocol to reduce their overall carbon emissions by at least five (5) percent of 1990 levels during the period 2008–2012, and permits a portion of those commitments to be offset through the purchase of Certified Emission Reductions (CERs) from CDM projects. The company expects to benefit from the sale of carbon credits by planting alien pine and eucalyptus trees in natural grasslands, which they describe incorrectly as 'degraded'. To earn CERs, GRL must show that the project would not have been viable without income from CERs.

Norway occupies an ambivalent position in relation to this project. On one hand, it is a major oil producer and exporter via the company known as Statoil, and contributes substantially to global greenhouse gas (GHG) emissions. It has entered into an agreement with GRL to purchase 400 000 carbon credits from the company, subject to the Idete plantations being registered as a CDM project. On the other hand, Norwegian public funds have been invested in or granted to GRL, effectively making it a project of the Norwegian government.

> See: http://www.greenresources.no/ and
> Norway's climate goals seen relying on quotas - www.enn.com/top_stories/article/31025

It seems Norway would like to be seen to occupy high moral ground and therefore seeks to align itself with progressive policies in social, environmental, human rights and other development issues. As such, and in view of the need to address climate change, the Norwegian government has committed itself to various climate change mitigation projects around the world. In keeping with this, it is looking to buy more than 6 million carbon reduction quotas (carbon credits) globally, for the purpose of offsetting greenhouse gas emissions and to stimulate carbon trading, as this comprises a substantial sector of the Norwegian economy.

Consequently, Green Resources Ltd's projects in Tanzania represent an important investment for the Norwegian government. As such, an agreement that should have been negotiated directly between GRL as a private investor and the host country became an inter-governmental affair with the Prime Minister of Norway being in Tanzania for the signing of the agreement described in the article below.

> See: ***Norway gives Tanzania $100 million for forests***
> www.enn.com/top_stories/article/35044

The authors have studied the social, cultural, political and economic impacts of industrial tree plantations in South Africa and Swaziland, and concluded that in an African context the monoculture tree plantation model is non-sustainable from many points of view, even with market-based mechanisms such as Forest Stewardship Council (FSC) certification in place. This research reveals significant problems at Idete, with land being lost by displaced communities, poor working conditions, the destruction of biodiversity on which communities rely for food, fuel and medicines; reduced water availability, as well as many other direct and indirect effects that impact negatively on the livelihoods of the affected communities.

The industrial plantation model is designed to support corporate financial accumulation through so-called 'economy of scale', but its negative effects including heavy water use, and damage to biodiversity and the land, are usually underestimated. Large-scale plantations often cause the economic and social marginalisation of affected local communities. In this instance, the governments of Norway (via Green Resources Ltd) and Tanzania appear not to have ensured an adequate level of meaningful participation in decision-making by affected communities, despite the requirements of institutional mechanisms designed to facilitate participation. A closer analysis of these processes in relation to capacity levels in local communities shows that, while on the surface they could indicate government and corporate involvement in facilitating such participation, in reality they do little more than green wash projects. In the case of Idete it appears there was inadequate adherence to the free prior informed consent (FPIC) principle.

It could be argued that the good intentions recorded in project founding and establishment documents are not always implementable on the ground. It would not be farfetched however, to imagine that this results in financial savings and therefore might not be of concern to the government and companies involved. It is also clear that the government of Tanzania does not have the capacity to protect communities from the potential abuse and marginalisation during the course of the project. However there is also the possibility of simple economic expediency. A Green Resources Ltd official simplified this to a choice between idealism and realism. He surmised: *Once you come to grips with the level of unemployment, and our failure to convert our economy into a massive production system that could absorb our people and meet aspirations, on one hand, and (on the other) see the vast land that has productive capacity but is lying idle … it would seem only plausible to share it with anyone who convinces you that they have use for it, which in the process would benefit your people in a manner you are not able to. Even if there could be some problems, you would think of them as challenges. Like in any investment, there is no such thing as problem-free land use and investment. It seems to me that a realistic move would be to let such investor use the land and trust that some benefits would accrue to the communities.*

It is therefore possible to argue that the government of Tanzania may have disregarded the potential for long-term social and environmental damage by this type of project in consideration of there being some foreign direct investment and minimal opportunities for employment.

Equitable distribution of income from foreign investment projects is not a strong point of developing country governments. Affected communities rarely benefit from the taxes and other financial benefits accruing from a project sanctioned and coordinated at the national level. This is true of many African countries besides Tanzania and strengthens the case for local community self-determination and management of community-business relations. Where this is not possible, mechanisms could be put in place to ensure that a substantial portion of project income is invested appropriately at the local level.

This report confirms propositions based on similar experiences included in the preliminary report. It would be valuable if other existing and proposed CDM carbon sink tree and agrofuel plantation projects would conduct more thorough and wide ranging studies to establish the benefit or otherwise of such projects for each local setting, in advance of project implementation.

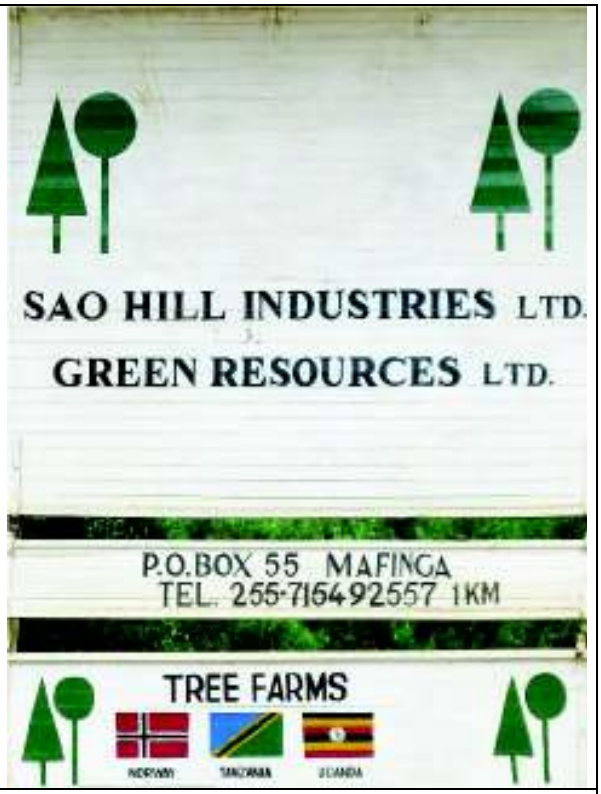
The negotiations at the UNFCCC COP16 in Cancun (December, 2010) did not produce any definitive conclusion or recommendation in terms of including plantations in the rules for REDD (Reducing Emissions from Deforestation and Forest Degradation), so tree plantation offset projects remain an uncertain issue in relation to future climate change policy developments, especially given the question mark over the future of the Kyoto Protocol.

What has emerged is that there is a fundamental problem in developing countries such as Tanzania. Opportunities for resource exploitation in combination with acquisition of cheap land are being grabbed by Northern corporations and their local agents, such as Green Resources Ltd. This growing trend - not limited to the case detailed in this report - is to the disadvantage of affected communities, and results in the destruction, degradation and/or pollution of the natural landscape while impacting negatively on biodiversity, food security, cultural traditions and water resources.

Such investments can also introduce new social problems. Easier access to recreational drugs, alcohol and junk foods that come with the cash economy can exacerbate the situation. Human health is in decline. Contagious diseases, especially those transmitted sexually like HIV/AIDS, are on the increase, affecting previously un-afflicted communities. The loss of traditional knowledge, and reduced access to wild medicinal plants, is making rural people increasingly dependent on expensive western medicine.

However such circumstances can also provide money-making opportunities for foreign corporations. They soon find new markets for antibiotics, ARVs, condoms, cell-phones, sweets, genetically engineered seeds, weapons, cheap whisky and trinkets in the most remote corners of the world. This pattern perpetuates poverty at the community level, although sometimes a few well-connected individuals will become wealthy and influential, and this can be used as 'evidence' that foreign economic intervention is good for the local economy.

Sangito Sumari, Managing Director, Green Resources Ltd, faces challenges in keeping GRL's staff and shareholders happy



Welcome to Sao Hill Industries, also head office of Green Resources Ltd. (Note blank space left for Sudanese flag)

GRL's 'carbon sink' tree plantations

This study found that Green Resources Ltd failed to describe its "Reforestation at the Idete Forest Project in the Southern Highlands of Tanzania" accurately in information presented. Even the project name used is incorrect and therefore misleading. The land being converted to tree plantations at Idete is original grassland that is in an overall healthy condition, and therefore planting trees there cannot be considered 'reforestation'. This misnomer may be due to ignorance, but it is more likely intended to support the claim that the Idete grasslands are 'degraded', and had been under forest in the past. By using the confused CDM "afforestation/reforestation" approach, GRL can justify its attempt to access climate change mitigation finance through the project. This distortion is taken further in calling the tree plantation a "forest" when alien pine or eucalyptus trees planted in biodiverse grassland are nothing more than industrial timber plantations with no biodiversity value.

It is significant that Green Resources Ltd submitted their CDM 'Reforestation' PDD for the Idete plantation in November 2008, although large-scale tree planting had already begun in 2006, bringing into doubt GRL's claim that the project was in need of CDM finance. Making a retrospective application for project registration indicates a lack of capacity within the Tanzanian authorities to monitor and enforce rules and regulations. This report highlights inaccuracies in the Idete PDD, as they help form part of the context within which foreign capital abuses African resources and systems. Such unethical practices undermine other projects that would benefit local economies and protect the environment.

Information on existing tree plantations, including those of GRL and others in southern Africa, was used to compare and assess the likely ecological, social, and climate change implications of the tree plantations planned (and already planted) at Idete, as well as of other planned projects in the East African region (e.g. northern Moçambique). The land at Idete being converted to timber plantations is grassland, and if the CDM application submitted by Green Resources Ltd for registration as a 'reforestation' project is approved, this will create a precedent for the further deliberate destruction of invaluable grassland habitat. While still waiting for a 'forest definition' for Tanzania, the CDM Executive Board (CDM-EB) decision in respect of the Idete project will have far-reaching implications for the biodiversity of, and ecosystem services rendered by grasslands everywhere.

> See Ecoregion: Southern Rift montane forest-grassland mosaic - http://www.worldwildlife.org/wildworld/profiles/terrestrial/at/at1015_full.html

Globally, there have been several attempts to establish carbon sink projects using tree plantations. The stated goal of these projects is to reduce atmospheric CO_2, the major cause of global warming and climate change. Although tree plantations have been included in the Kyoto Protocol's CDM, for a number of reasons it has not been feasible to generate carbon credits through the establishment of plantations to date. The most obvious obstacle is that most tree plantations are timber crops, intended to be cut down for pulp or saw-wood within a relatively short time. They are prone to fire and their monocultural, even-aged, single species composition also makes them vulnerable to high levels of damage through disease, wind and drought. Therefore, few tree plantations are likely to store carbon for periods long enough to mitigate meaningfully against climate change, and only qualify for temporary CERs (tCERs).

> For further background information on problems with CDM tree plantations see: http://www.wrm.org.uy/bulletin/125/Carbon_sink_plantations.html
>
> Also see: ***The Carbon Neutral Myth – Offset Indulgences for your Climate Sins*** http://www.carbontradewatch.org/pubs/carbon_neutral_myth.pdf

Despite this flaw, stakeholders such as the World Bank and the timber industry have lobbied for the rules for carbon sink plantations (through the weak definitions) to be simplified so as to make it easier for fast-growing short-rotation pulp and saw-wood industrial tree plantations to be registered as CDM projects. As most of the Idete plantation project has yet to be established, it may still be possible to save most of the grassland, and prevent a disastrous precedent that has been driven by economic interests that could benefit from the project, without taking responsibility for its negative consequences. From studies in the KwaZulu-Natal, Mpumalanga and the Eastern Cape provinces of South Africa, and Swaziland, it is clear that monoculture tree plantations have severe economic, cultural and environmental impacts on communities living around them and beyond. Instead of genuinely storing carbon, they are likely to become a net source of greenhouse gas emissions during their full cycle of habitat destruction, timber production, wood processing, transportation, consumption and disposal.

In contrast to GRL's claims and promises, research and analysis show that the social and environmental costs of plantations such as those at Idete far exceed their benefits. This study also aims to show whether local communities were engaged on the basis of full and free prior informed consent (FPIC), in agreeing to the change in land-use, and to exchanging their existing cultural and social benefits for the promised economic ones.

Ibi Batéké, another CDM propaganda exercise

The Ibi Batéké "afforestation" project in the DRC has also applied for registration under the CDM. The World Bank Biocarbon fund has agreed to purchase 500 000 tCERs (temporary certified emission reductions), supposedly derived from converting 4 000 ha of grassland to tree plantations. As this project is similar to the proposed Idete project, findings from this exercise could be used to test other similar carbon projects. Ibi Batéké is widely promoted as a success despite not yet being registered by the CDM EB.

In the Democratic Republic of Congo, Planting Trees for a Better Environment and Healthier Citizens

"This is the first project in DRC to benefit from global trade in emission reductions under the Clean Development Mechanism—a market-based approach that allows countries which have ratified the Kyoto Protocol to purchase carbon credits from each other, reducing greenhouse gases in the atmosphere to slow global warming. The World Bank's BioCarbon Fund will purchase 500,000 tons of emission reductions (so-called carbon credits) to be generated by the project until 2017 from a private company called NOVACEL, founded and headed by locals from Bateke, including the Mushiete brothers Olivier and Thierry."
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22266092~pagePK

A section on the Ibi Batéké project in a UNEP report shows the agency's starry-eyed support for CDM, in addition to its confusion of 'afforestation' with 'reforestation'.

'And yet it Moves - Success stories and drivers of CDM project development in sub-Saharan Africa' 6. *Ibi Batéké* carbon sink plantation in Democratic Republic of Congo [PDF] http://116.12.48.151/fetchfile.aspx?fileID=160

Excerpt - Ibi Batéké case study, (plus overall report conclusions and recommendations) http://www.unepfi.org/fileadmin/documents/and_yet_it_moves.pdf

However, a 2006 case study describes how the Batwa people in the DRC were exploited and excluded from consultation**: *The Impacts of the "Carbon Sinks of Ibi-Batéké" Project on the Indigenous Pygmies of the Democratic Republic of the Congo*** *by Sinafasi Makelo Adrien.* Study is available on request as a pdf file by e-mail from timberwatch@iafrica.com.

More World Bank exaggeration can be found in the article: “Africa Eyes Carbon Market”

Value Beyond Carbon Offsets
The multiple benefits of the project give it a value beyond its carbon offsets, says Ellysar Baroudy, World Bank Senior Carbon Specialist and head of the BioCarbon Fund. “You’re improving environmental conditions, and you’re improving people’s standard of living,” she says. The World Bank has a diverse portfolio of carbon projects in Africa, but many have commonalities, says Baroudy. “[There are] huge social and environmental co-benefits, and the environmental benefits go beyond the CO2. The other benefits aren’t paid for, but the communities recognize them more than we do.”
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22591615~pagePK:64257043~piPK:437376~theSitePK:4607,00.html

However in a presentation to NORAD, in Oslo, in November, 2010, she paints a less optimistic picture, whilst revealing ignorance of the harmful realities of tree plantations.

The BioCarbon Fund & Land Use, Land-Use Change and Forestry (LULUCF)
www.norad.no%2FOm%2BNorad%2FArrangementskalender%2F_attachment%2F207515%3F_download%3Dtrue%26_ts%3D12c98355010&ei=WegaTYPuA4G0lQf646jbCw&usg=AFQjCNHSGprkKaBWRudKjbmktcbQYGNxvQ&sig2=jVh931uGkTR3wpduLxtIhg

This press release from the International Finance Corporation (IFC), part of the World Bank Group, enthused about the GRL Idete project’s job creation potential:

IFC Investment in Green Resources Supports Reforestation, Environment in Tanzania: New Power Plant and Plantations to Create More Than 5,000 Jobs by 2011
Dar es Salaam, Tanzania, June 10, 2009 — “IFC, a member of the World Bank Group, announced today it will invest $18 million to help Green Resources plant 8,000 hectares of forest in Tanzania, implement international environmental standards, and increase productivity and energy efficiency.” “Green Resources will also obtain certification from the Forest Stewardship Council that its plantations in Mozambique, Tanzania, and Uganda are environmentally and socially sustainable, offer favourable working conditions, and adhere to the highest international standards.”
http://www.ifc.org/ifcext/media.nsf/content/SelectedPressRelease?OpenDocument&UNID=4AB39481551E6F93852575D10051368C

The statements made in the IFC press release above are inaccurate and misleading:

- Green Resources Ltd will not be planting a “forest in Tanzania”. Instead it will destroy part of a grassland ecosystem, by imposing onto it an industrial timber production system to supply GRL’s’ wood factory and new wood-burning electricity generator.
- The present work-creation potential of the GRL projects is most unlikely to create more than 5000 full-time jobs by 2011. Timber plantations offer less employment than in agriculture, as with mixed farming. (Karumbidza 2001; 2007).
- The claim that GRL will “obtain certification from the Forest Stewardship Council that its plantations .....are environmentally and socially sustainable, offer favourable working conditions, and adhere to the highest international standards” is equally misleading. FSC merely provides a voluntary system for plantation managers to improve their management. This makes little difference because plantation owners will not spend money if they can use the FSC logo on their products before complying with FSC standards and criteria.

Coming a decade after the commencement of the Green Resources Ltd operations in Tanzania, this research will evaluate experiences on the ground against promises made by the company in establishment documents, the company website, and advertisements. The results of this exercise will be shared with affected local communities to increase knowledge about how their rights and livelihoods could be prejudiced by this and other tree plantation projects.

The final motivation to take on this investigation was when Green Resources Ltd issued a press statement saying that they would be "reforesting degraded grasslands" and employs over 3000 staff in Africa". It seems the statement can no longer be accessed at the Green Resources Ltd website so it is reproduced below. Although not the focus of this study, the GRL plantations at Uchindile and Mapanda can be used to illustrate what could happen at Idete in the future. The public summary document for the FSC certification of those plantations by SGS, seen together with the VCS AFOLU validation by TÜV Süd, paint a very different picture from the GRL press release.

Green Resources awarded world's first VCS AFOLU validation by TÜV Süd
The Uchindile and Mapanda Forest Projects in Tanzania have today been validated under the Voluntary Carbon Standard (VCS) following the AFOLU guidelines for Afforestation and Reforestation Projects. The validation was carried out by TÜV Süd. The VCS is largely recognised as the benchmark and most demanding standard for the voluntary carbon market.

The project will **reforest** 10,814 hectares **of degraded land** located in the Southern Highlands of Tanzania and put 7,565 hectares into conservation to protect local biodiversity. The project will generate permanent VERs over a 99-year crediting period guaranteed by a reserve buffer. From 2002 to 2008 the project has generated an estimated 611,418 tCO2 already and from 2008 to 2020 anticipates a future 2,873,417 tCO2. The projects were certified under the Forest Stewardship Council (FSC) standard in 2008 - the world's leading standard for sustainable forest management.

The projects have relied on the revenues from carbon financing, in addition to timber revenues, to make the projects commercially viable. The projects offer significant employment in a poor rural region where few other job opportunities exist - namely 50 permanent and more than 1,000 temporary people employed in Mapanda and Uchindile. As a company Green Resources employs and provides training to over 3000 staff in Africa. The company is committed to supporting local communities through investment in schools, health facilities and provision of safe water. Green Resources also promotes community tree planting by giving away seedlings and providing necessary training in silviculture. All carbon revenues will be re-invested in Tanzania and 10% of the carbon revenues will be spent on additional community projects.

The Uchindile and Mapanda Forest Projects applied an approved Clean Development Mechanism methodology for afforestation/reforestation, and has carried out supplementary analysis in line with the VCS requirements to determine the size of the risk buffer. The project hopes to achieve verification of the carbon credits generated from tree growth from 2002 to 2008 later this year.

Green Resources AS is a plantation, carbon offset, forest products and renewable energy company. The company was established in 1995 and is a private Norwegian company with 60 shareholders. It employs more than 3,000 people and has invested NOK 350 million (USD 50 million) in its African operations since its inception. Green Resources operates in Tanzania, Uganda and Mozambique.

For more information please visit our website at www.greenresources.no.
For further details please contact: Jenny Henman, jenny.henman@greenresources.no

The Norway-Tanzania carbon deal

In June 2009 Norwatch reported that GRL had been offered a funding deal by the Norwegian government through the purchase of CERs.

> http://www.norwatch.no/200906051306/english/other/climate-project-on-cheap-ground.html

As though trying to demonstrate that it could comply with the CDM rules and to legitimise tree plantation carbon credits, GRL embarked on a campaign to validate the CDM based methodologies used at its Uchindile and Mapanda (U&M) plantations, and in 2009 obtained verification for the (U&M) project under the Voluntary Carbon Standard (VCS).

> See http://www.carbonneutral.com/project-portfolio/uchindile-mapanda-reforestation/ and www.climate-standards.org/projects/files/tanzania/ufp_mfp_combined_validation_VCS_PDD-1.pdf

GRL plans to establish more pine and eucalyptus plantations in similar natural areas within Uganda, Sudan, Tanzania and Moçambique. According to a source in Moçambique, GRL used outdated satellite images that do not show present houses or farming activities, to identify land for new plantations. The land being procured is in well watered and fertile regions of the respective countries, where it has long been utilised by communities for grazing, hunting and gathering, and seasonal cropping. In the case of Tanzania, the land being targeted for tree plantations includes montane grassland, a scarce habitat type that is home to endangered species such as Blue Swallow. These grasslands have been utilised by the local communities for generations, and may therefore not be described as pristine, but they are rapidly being eliminated by tree plantation companies such as GRL and MPM. As indicated in the section on the environment below, this land use could be the single greatest threat to bio-diversity in the area, and undermines traditional access to resources such as medicinal plants.

Two main factors in combination made it easy for the company to easily obtain leases for land: on one hand low awareness of the potential social and environmental impacts of such plantations, and on the other, the Tanzanian government's desire for foreign direct investment. Such government-company deals are reminiscent of the colonial arrangements between African kings and concessionaire companies, although circumstances that prevailed then were different in that treaties were signed under duress because it was believed that giving land to colonists would protect them from direct attack from the better-equipped foreigners. In the post-colonial era, African governments continue to parcel out whatever remains of African natural resources under the guise of acquiring foreign direct investment and reducing poverty.

The exclusive use of community land has been acquired with 99 year leases at extremely low cost, but with limited obligations in terms of environmental management and conservation, and no undertaking to rehabilitate the site to its original usage at the end of the lease period. In contrast to the lucrative benefits and many advantages to GRL, there appear to be few obligations for the company to protect or restore the area held under their control. Land previously productive for grazing livestock and conservation of both water and biodiversity would become degraded and rendered far less valuable in the future, while in the immediate instance, communities are deprived of their citizen's (constitutional and human) right of access to their traditional land. As elaborated later in this report, the leasing of land for such long periods, ending beyond the lifetimes of the leasing generation, borders on theft from future generations of affected local communities.

It is therefore vital that the technical conditions and guarantees agreed to by Green Resources Ltd as part of the lease should be fully investigated to ensure that the land

resource is fully protected long into the future. The Idete project is driven primarily by Norwegian interests in both carbon credits and access to African land and water resources. There is little doubt that the potential income from carbon credits has provided an incentive to the company, but by all accounts this project would have happened in any event. The Norwegian Government and GRL have triggered irreversible land-use change in the area, while ignoring the opportunity cost of not leaving it as it was. The company claimed that its plantations would be in "degraded grasslands" and would improve the local environment by halting degradation. Industrial plantation activities involving hi-tech nurseries that convert the natural landscape will result in increased GHG emissions from the area in the short term at least, and net carbon leakage from the long-term project activities once all resulting emissions from related activities such as shipping, processing and disposal are taken into account. In the end this will negate the carbon sequestration argument for the project.

A number of concerns have led to questions being asked about the GRL plantation projects in Tanzania, as well as about the carbon sequestration and social benefits claimed by the company to justify CDM registration. The FSC certification awarded to the Green Resources Ltd plantations at Uchindile and Mapanda also needs to be investigated, as discussions with those affected communities point to inadequate consultation. By definition, adequate consultation presupposes that sufficient time has been allocated to consult a sizeable and representative majority of the community structures, and most importantly that the communities consulted understand fully what they are discussing and being asked to commit to. Promises of jobs have in many circumstances cajoled communities to think no further and to see no harm in any project, given the pervasive ideology that suggests that formal employment based livelihoods is the only way to 'develop'. The desire by the local communities to benefit from jobs and infrastructure has led to some communities accepting projects that otherwise have no long term benefit to them.

Analysts and observers have warned that tree plantations could be used as a form of land appropriation in the South. Much land has been alienated from traditional use to supply carbon, agrofuel and wood biomass markets. According to reports, after signing the aid agreement in Dar es Salaam, Norwegian Prime Minister Jens Stoltenberg said the deal would make Tanzania an example to other countries in terms of incorporating forests into fighting climate change: "How to do it, and how to combine the idea of rural development with creating new sinks for carbon dioxide by planting new trees is exactly what we are going to do in Tanzania".

See article: ***Norway gives Tanzania $100 million for forests***
http://www.enn.com/top_stories/article/35044

Green Resources Ltd's reaction to criticism

In response to the Timberwatch critique of their activities, GRL has avoided specific criticisms and made broad claims about land acquired, trees planted and jobs created. In addition to the written response given to our researcher, two other documents were produced. A statement titled "A forestry CDM/VCS case study from Tanzania" on 23rd January 2010 makes no specific reference to the Timberwatch preliminary report, however the language used to argue for GRL's projects and future plans suggests that it is a response to the critical writings of Norwatch, the World Rainforest Movement and Timberwatch. The second document took the form of an advertisement in the Guardian newspaper in Tanzania.

See GRL report: ***A forestry CDM/VCS case study from Tanzania***
http://natureandpoverty.net/uploads/media/carbon_forestry_in_tanzania.pdf

GRL's response to the Timberwatch preliminary report

(A print copy was given to Blessing Karumbidza at Sao Hill on 6th January 2010)

In response to the sweeping and unjustified report by Timberwatch loaded onto the email listserve of forest-I Wednesday 9th December please find enclosed a brief response from Green Resources, the project developer of the Idete Forest Project (IFP), Tanzania.

- It is unfortunate that the authors have taken a priori negative views on the impacts of the Idete Forest project without having visited the project nor read the corporate governance rules of the company.

- The Prime Minister of Norway did not participate in the launch of the project and has not visited any of Green Resources projects

- Green Resources aim to achieve both FSC and CCB certification on this project as it does with all other projects. Currently the project has successfully undergone pre-assessment for FSC, and is in the later stages of CCBA validation.

- Land rights and community consent: Mainland Tanzania is divided into 22 regions. Each region is administered under districts, responsible for developing a District Investment Profile, which is made available to investors. The District is in charge of managing the Wards and Villages within its district boundaries. All land is owned by the villages, divided into two main categories: 'general village land' which is land that can be transferred for investment and 'village land' for the communities own use. Each village is required by the government to have its own Land Use Plan to ensure that all activities are allocated enough area and to ensure security of land tenure.
General Village Land can be given out for investment but should not be more than 33% of the total village land area. This is the land that the IFP is based on.

- Land tenure: The Idete project land has been leased from the surrounding communities following a fully informed, free and consentual consultation process for a period of 99 years. The objective of Green Resources is to manage the previously degraded land, and restore it to forest cover sustainably over the long term through sustainable reforestation and harvesting, providing a vital supply of timber for the region. The project will bring employment and increased infrastructure, schools and health clinics in the area, in line with the priorities of the local communities. With the longevity of the project in mind it seems unsubstantiated and inappropriate to suggest that the project is a short-term project. Forests are a long-term store of carbon. They covered vast area of the Earth's surface for millennia and contain 60% of the carbon stored n terrestrial ecosystems. Their duration exceeds that of any industrial facility.

- CDM rules, and other standards being applied by the project
    - The CDM rules require project developers to document and analyze environmental impacts associated with a project. This has been carried out.
    - Environmental and Social Assessments at the Idete Project have been carried out by independently nominated government accredited organisations, in accordance with and following Tanzanian Law. Approval for these studies and the implementation of the Idete Forest Project has been received by the National Environmental Management Council (NEMC, Tanzania) In addition to supplement this Green Resources had additional ecological survey carried out by a leading national ecologist and professor at Sokoine University of

Agriculture. The results of this study have ensured best practise environmental planning and biodiversity conservation for this project.

- Green Resources has gone beyond the requirements of the CDM, and is applying the more stringent additional requirements for community and biodiversity considerations of the Climate, Community Biodiversity Alliance Standard (CCBS), as well as those of the Forest Stewardship Council (FSC) which ensure sustainable forest management
- For the upcoming Timberwatch report we advise the authors to study the definition of A/R projects within CDM to gain an understanding of the definitions of CDM. As an example, reforestation is misunderstood in the article. CDM defines it as:" Reforestation is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989 (16/CMP.1, Annex, paragraph 1(c))." Consequently, areal maps of Idete – and of most of Africa- were not found prior to 1989, which is why the project is called a reforestation project. Furthermore, CDM methodology 5 for A/R defines that only areas of degraded grasslands can be accepted for reforestation. Thus, the soil is too poor for agricultural use.
- CDM rules also require that changes in carbon stocks over time within the project boundary be accounted for in the project's monitoring system. As a result, credits can only be issued for ex-post verified carbon sequestration above an established baseline, based on scientifically accepted monitoring techniques

- Timber demand and supply: Demand for fuelwood and charcoal is continuously increasing in Africa due to population growth and increased urbanization. The total global forest area in 2005 was estimated at 3.95 billion, just over 30% of the world's land area. Deforestation however, is concentrated in the world's poorest areas along the tropical and subtropical belts. Net forest annual loss globally 1990-2000 was estimated at 8.9 million hectares. Of this, South America and Africa have shown the largest loss so far on an annual basis of 4.3 and 4 million respectively. Although forest plantations are being planted at an increasing rate, mainly in China, Russia and the U.S., current productive plantations stand at 109 million hectares or 2.8% of the world's forest area. Projected world demand of timber can for the near future only be partially met by plantation forests (mainly in the Northern hemisphere). The balance of timber supply, together with the increasing need for fuel wood on the whole of the African continent, will continue to be met by destruction of natural forests, unless forestry carbon projects such as Idete are incentivized.

- The company and the local villages are joint project participants in the carbon project. The local communities will receive 10% of any carbon revenues and the remaining revenues will be reinvested into new local carbon projects. All carbon revenues will be audited and publicly available on www.greenresources.no

On a more general note about carbon emission reductions, climate research has shown that to avoid catastrophic changes to the global climate and large-scale irreversible systemic disruption, temperatures must not increase to a threshold of 2 degrees Celsius above those

in pre-industrial times. A stabilisation at around 450 ppm would imply a medium likelihood of staying below this threshold. Stabilizing atmospheric concentration at 450ppm would allow cumulative emissions of close to 2100 Gt CO_2e between 2000 and 2100. Recent analysis has shown to get on track for long-term stabilization, by 2030, emissions should not exceed 32 Gt CO_2e/yr To achieve this target requires significant emission cuts against the business as usual scenario.

Reductions on this scale require the inclusion of emissions reductions from the forestry sector. Offsets from the forestry sector account for a larger share of potential reduction abatement than any other sector, including potential reductions from the power sector over that period. A recent study by McKinsey examined potential abatement scenarios for achieving the necessary emission reductions at a cost below €40/tCO2e. Forestry accounts for 25% of the additional reduction potential in emissions required to achieve this target. It is clear that to achieve stabilisation at 450 ppm by 2030 requires both avoided deforestation and reforestation. The potential 2030 abatement from reducing deforestation is ~3.3 Gt CO_2e /year, and from afforestation/reforestation a further 3.5 Gt CO_2e/year. Without the inclusion of forestry offsets, achieving these emissions reductions targets are considered impossible. In other words, the alternative to achieving forest based emissions abatement is the likely onset of irreversible climate change by 2030.

The recently finished negotiations at the Climate Summit in Copenhagen have recognized the vital importance of protection of forests, and enhancement of biotic carbon sinks in climate change mitigation.

"Forests and trees cover nearly one third of the Earth's surface. Sustainable forest management of both natural and planted forests and for timber and non-timber products is essential to achieving sustainable development as well as a critical means to eradicate poverty, significantly reduce deforestation, halt the loss of forest biodiversity and land and resource degradation and improve food security and access to safe drinking water and affordable energy; in addition, it highlights the multiple benefits of both natural and planted forests and trees and contributes to the well-being of the planet and humanity." (World Summit on Sustainable Development of Johannesburg)

"Carbon forestry and agriculture are the only meaningful methods of offering sustainable livelihoods to the rural poor and the only way they can participate and benefit from the carbon market." (Wangari Maathai)

The text above was re-typed from the document supplied by Green Resources Ltd, and can be e-mailed on request. Write to timberwatch@iafrica.com to request a copy.

GRL advert in the Guardian (Tanzania)

The second response documented is the advert below, published in the Tanzanian ***Guardian*** newspaper on 1 March 2010. GRL's view that "CDM has failed Africa" comes from a narrow selfish perspective where companies expect modest investments in developing countries to deliver very handsome returns. GRL feels aggrieved. However GRL's Mads Asprem has hyped the potential value of GRL, and he now owns 26% of the company's shares through his ownership of 'New Africa'. The advert also states: "Forest investments have a unique developmental effect, benefitting the poorest areas of the countries because this is where new forests can be established."

What this really means is that the cheapest land is to be found in the "poorest areas" where local communities are unaware of the negative environmental impacts of alien tree plantations in the guise of "new forests".

GREEN RESOURCES LIMITED

AFRICAN CARBON CREDITS NEEDS REFORESTATION

CDM has failed Africa

Africa has only received minor benefits from the Clean Development Mechanism (CDM) which was created by the UN climate organisations so that developing countries can participate in the combat against climate change. The CDM was anchored in the Kyoto protocol, and looked very promising but the management of the CDM system has been an unquestionable failure for Africa.

Less than 2% of registered CDM projects are located in Africa. Of this limited number of African projects, nearly half have been undertaken in South Africa, and more than a quarter in North Africa. Only 4 out of 2,022 registered CDM projects have been registered in Sub-Sahara Africa outside of South Africa despite the fact that the clean development mechanisms were put in place in order to facilitate carbon projects in developing countries. The financial benefits of the CDM projects in Africa are negligible. Thus, Africa has for all practical purposes had no benefits from CDM.

CDM has primarily been a carbon mechanism benefiting Asia, taking 75% of the projects, followed by Latin America, with 22% of the projects. If we look at the volumes of CDM carbon credits generated, the situation is even more skewed, with 85% of the volume in 2008 supplied by China. There are 28 East African projects in the CDM pipeline (of which 4 are Tanzanian), but the bureaucratic process of the CDM board makes it time consuming and difficult to push the projects through. Thus, it is unfortunate that some people in the climate and developing industry are hostile to the few new African CDM projects that are being developed. They make Africa stay even further behind in carbon development.

Forestry is Africa's main hope for Carbon Mitigation and Finance

Forestry is the one sector within the CDM mechanisms where Africa could become a major beneficiary of carbon finance. Forestry accounts for less than 0.5% of all CDM projects. The Afforestation /Reforestation CDM projects which have been approved are all small, insignificant overall and generally non-commercial. This limits their immediate reliability as they still remain dependent on philanthropic funds for implementation. In contrast Green Resources is developing projects which have a larger impact in terms of climate change mitigation, timber supply and social and economic development. We continue to believe our projects are economically viable, in spite of the fact that we have not had any return on investments during the first 14 years of our operation. Importantly, the projects are also replicable.

Forestation projects can bring large investments to Africa, with the principle benefits going to rural areas where new forests can be established. Forest investments have a unique developmental effect, benefiting the poorest areas of the countries because this is where new forests can be established. Often these are areas which have limited alternative opportunities in terms of employment and rural development/industrialization. The largest part of investments in forestry goes on wages and salaries, therefore benefiting local people.

Carbon Finance Reforestation Projects in Tanzania

In order to address these issues, Green Resources is developing a VCS project in Mapanda/Uchindele and a CDM project in Idete, Kilombero and Mufindi districts. The VCS project because the first reforestation project in the world to be validated and registered according to the VCS standard. The PDD for the CDM project is about to be submitted. This study describes the project and some of the advantages, opportunities and pitfalls around reforestation projects. Reforestation is critical to the future of CDM in Africa and to the success of REDD and this is discussed in detail in the study.

Forest plantations account for a smaller share of the land area in Africa than any other place on Earth. Green Resources (www.greenresources.no) believes high quality reforestation creates development and combats climate change. Reforestation is also a fundamental requirement of any successful REDD project, which is explained at length in this article. We are proud of being the leading reforestation company in East and Southern Africa and want to set the record straight.

Green Resources started planting trees for carbon sequestration and wood material in Tanzania's Southern Highlands and Jinja, Uganda in 1997, just as the Kyoto protocol had been signed. We are a long term investor in East and Southern Africa and have established a company employing more than 3,000 people, managed primarily by East and Southern Africans. The company continues to invest in carbon and forestry projects, despite not being able to generate any return on the investment to the shareholders since we started up.

Since the start, Green Resources has planted more than 7,500 ha of new forest in Tanzania's Southern Highlands, sequestering over 500,000 tons of CO2e to date. The company has in total planted 15,000 ha new forest in East and Southern Africa. We forecast that the Mapanda/Uchindile projects will create over 3.5mn VCUs over their lifetime while at Idete more than 1.8mn tCERs will have been generated by 2020. This is a significant contribution to the fight against climate change.

The operations in the Southern Highlands received certification as a carbon project based on a methodology developed by SGS in 2000. It was one of the four first projects in the world to receive this certification and we are immensely proud of this early achievement, by our own Tanzanian staff. Since then, we have obtained Forest Stewardship Council (FSC) certification, Voluntary Carbon Standard (VCS) certification and Carbon, Community and Biodiversity Association (CCBA) certification of the Uchindile and Mapanda Projects.

Green Resources exposes itself to independent certification by world leading professional companies using the worlds' leading standards. We have started a new business in one of Tanzania's least developed areas, and are faced with a lot of difficult issues. We are striving to steadily improve and to meet the most rigorous international standards for business practises, community and environmental management.

Carbon Revenues from 2010

In 2009, Mapanda/Uchindile, Tanzania was the first reforestation project in the world to be validated and registered according to the Voluntary Carbon Standard. We believe this is the most demanding carbon standard for voluntary carbon credits.

Furthermore, the Idete project which has been developed as a CDM project, signed a sales contract for the credits in 2009. It has been a time consuming and difficult task to develop the project and sell the carbon, with the first revenues arriving only 10 years after the project started.

The projects together are expected to raise USD 1.5 million of revenues in early 2010. 10% of this will go to community projects. 90% will be re-invested in further forest investments in the Southern Highlands of Tanzania. All revenues paid by the customers will be paid to Green Resources' operating company in Tanzania, and all proceeds from the sale will be ploughed back into the rural Tanzanian economy.

Forestry is a long term investment. Green Resources has invested USD 80 million in Africa since it made its first investment in East Africa in 1995. It has still not taken out dividends or received interest payments from the investment.

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A local NGO perspective from Envirocare

Impacts of timber plantations on community livelihoods and biodiversity at Idete, Mafinga District, Iringa Region, TANZANIA

by Abdallah Mkindi, Elisaria (Masai) Nassari and Yohana Kadiva

Acknowledgement
Our participation in the two Timberwatch research trips to Idete facilitated Envirocare's increased understanding of issues relating to the timber plantation model. During the second research trip, Envirocare was also able to carry out additional research on land with the communities in Mufindi and Idete. There were a lot of things to learn in the field regarding the modalities of timber plantation project investments. We wish to thank the Idete community and Green Resources Ltd for their cooperation, which was vital to this project. We would also like to thank the various NGOs that specialise in Forestry like the TFCG, the Tanzania Wildlife Conservation Society, and others for attending and sharing their understanding at the inception workshop at Envirocare's office in Dar es Salaam. Thanks must also go to the CBOs in Iringa and the Iringa Forestry and Land department for their contributions at the Iringa workshop.

Introduction
In 2010, Envirocare and the Timberwatch Coalition, an NGO based in South Africa, joined forces in a project to assess the impacts of timber plantations on communities' livelihoods and biodiversity in the Southern Highlands of Tanzania. The project is supported by the Siemenpuu Foundation in Finland, with Envirocare playing a crucial role in organising field trip activities.

A first field trip took place in early January, with Dr Blessing Karumbidza (then Timberwatch Chair) and Abdallah Mkindi (Envirocare) travelling to the area on a preliminary study visit to survey the area. Interviews with key stakeholders including community members, and company officials were held to establish the key issues. The visit also focussed on the Sao Hill plantations associated with Green Resources Ltd (GRL) and Mufindi Paper Mills (former state plantations). A follow up trip took place in May, this time including Elisaria (Masai) Nassari and Yohana Kadiva from Envirocare, and Wally Menne, Timberwatch project co-ordinator and biodiversity specialist, to study the impacts of the Idete CDM plantations of GRL on grasslands, as well as the socio-economic status and livelihoods of local people.

This trip started with a one-day awareness raising workshop on timber plantations which was held at the Envirocare offices in Dar es Salaam on the 2nd of May. During the workshop Wally and Blessing treated the audience to a video and presentations based on the experiences from southern Africa of plantations. This was an important workshop for Envirocare also as it enriched our clarity on the plantation model and how it impacts on social, economic, environmental and cultural aspects of sustainability. Participants included CSOs working in forestry, wildlife, agriculture, policy advocacy, as well as media representatives. After the workshop, the team consisting of two Timberwatch researchers and three Envirocare staff, travelled to the study area at Idete village, about 700km from Dar es Salaam. The five day field trip provided opportunities to meet the Idete community, local government officials, leaders from other affected villages, as well as people from like-minded organizations in the Iringa region. During the research trip, awareness raising workshops were held with the various groups on impacts of plantations, and participants were invited to share their experiences. One of the workshops was held in Iringa where officials there and participants from the NGO and CBO sector asked for a longer workshop with more stakeholders invited. Timberwatch committed to return to such a workshop on the invitation of the NGO/CBO network in Iringa. Another workshop was held at the District offices at Mafinga and another at Idete.

Observations

Timber plantations, consisting mainly of *Eucalyptus spp* and *Pinus spp,* occupy more than 50,000 hectares in the Iringa region of Tanzania. (GRL Report, Feb 2009) These plantations have been established within the high-rainfall belt of the Southern Highlands, mainly in areas with deep fertile soils. Currently, little has been done to assess the long or short term impacts of these plantations.

The Timberwatch study aims to assess the status of this industrial activity, and its direct and secondary impacts on communities' livelihoods; including cultural aspects, land access rights, food security and biodiversity, together with impacts on water and soil fertility. Some plantations are seen as potentially capable of mitigating against climate change, and are being proposed as carbon sequestration/offset projects. These include those being established around the Makungu, Uchindile and Idete villages in the Mufindi area, as well as in other parts of the Southern Highlands such as at Mapanda and Mnyera, by GRL. An application has been made to register the Idete plantations as a CDM project.

This report is mainly concerned with the "Idete Forest Project", which covers an area more than 14,000 hectares of Idete village land. The project belongs to Green Resources Ltd, a Norwegian company operating in East Africa, which is also aiming to extend its tree plantation activities into other parts of southern Africa. The company expects to acquire more than 170 000 hectares in the Southern Highlands. The new timber plantations are also supposed to serve as carbon sinks, consuming and storing atmospheric carbon in order to offset industrial emissions caused by polluting industries in the North, and thereby earning tradable carbon credits for their owners.

Land grabbing vs. corporate social responsibility

Land is central to livelihoods and food security, and that is the natural result of the direct dependence of communities on agriculture and natural resources in Tanzania. Depending on the way land development investments are structured, they can either create new opportunities to improve local living standards, or further marginalise poor communities. Currently, over 640,000ha of land have been grabbed or are in the processes of being grabbed by the investors for biofuels and timber plantation (Envirocare, 2010). This land grabbing is displacing communities in Kilwa, Rufiji, Kisarawe and Mufindi districts. The loss of land means that these communities cannot access this land again for the rest of their lives.

Some observations made on the field trip to Idete included that the land described as marginal by the timber company wishing to convert it to monoculture tree plantations, was actually full of potential, with high fertility, and very interesting flowers and other herbaceous plants. This made it easier for us to analyse and identify the different best land use alternatives.

There is very little knowledge about climate change and carbon sequestration among local people. During the 1970s, indigenous people in rural areas of Tanzania had to move from the areas which are now termed marginal, due to the governments' Ujamaa Villagisation Scheme (M JENNINGS - 2002) which is the only reason why people are not found living in these areas - not because the land does not belong to anyone. Community land can be leased to a timber company and other investors interested in acquiring a big chunk of land for 99 years.

Those Tanzanians who grew up during Mwalimu Nyerere's era, enjoyed all the social benefits (free education and medical services, cheap and accessible clean water, guaranteed employment etc) his policies offered and which many people can attest the fact that his policies benefitted majority of Tanzanians as far as education, medical services, access to clean water in towns and villages and many other social services concerned and that was the aim of Ujamaa Villagisation Scheme.

To obtain leases on community land, the company must first approach the Tanzania Investment Centre (TIC), which then directs them to respective District office where land seem available for negotiation. Then the district officials send the Investors to the village councils to sign agreements, although the land lease is with the Tanzania government. (Sulle, E. and Nelson, F., 2009) It is a completely top-down approach and it doesn't respect the local population's priorities for their land use, nor their ownership rights. A land use feasibility study is normally a must do activity prior to any kind of investment on land which should be conducted by the government of Tanzania according to National Environmental Management Council. Surprisingly these studies have been done by the respective investing company which is too likely to come out with biased information from that kind of study specifically for the case of Green resources and other companies like Africa Green Oil in Idete and Rufiji.

Employment

Plantation workers are paid 2500 Tshs (Tanzania shillings) per day, for only those days an employee is present. (According to Plantation Workers Union leader) .It requires not less than one hundred thousand to sustain a rural setting family in Tanzania only for food, leave apart education, clothes and other needs, for instance, health services. The amount offered by Green Resources Ltd can only suffice for paying for a single high school child's tuition fees, yet 200 Tshs has to be deducted for the National Social Security Fund (NSSF). Green Resources Ltd has both casual and permanent employees; where the amount mentioned above is strictly for casual workers. If employees wake up around 10:00am, and get back home from the job at around 8:00pm, this indicates that people are working overtime, and are paid very little.

Possibilities of HIV/AIDS

Some workers stay in camps and others in their homes, usually meaning they are isolated from social services and entertainment, and it is likely that such conditions could expose them to sexual conduct that spreads HIV/AIDS. The living arrangements are that men and women stay in the same camp though not necessarily in same rooms but the same isolated building. The generation mix does not regard age, or the youth of the camps residents after tiresome work with no limited number of working hours. The fact is that there are no family quarters, and alcohol is consumed and sold at the camp. There is no health worker and condoms not distributed. Then considering gender, and respect for women and women's bodies, etc – These conditions are likely to establish an environment for social threat from HIV, TB without forgetting possibility of spreading cholera and other health related diseases due to a lack of sanitation and poor social matters handling by GRL to the Idete community.

Impacts of plantations on water availability and biodiversity

Tree plantations have implications for water availability and biodiversity. When land is cleared for planting tree crops the effect can be harmful to the environment (Raswant *et al*, 2008). This is due to the fact that such expansions of export oriented timber production in Tanzania will displace other crops or threaten ecosystem integrity by shifting from biodiverse ecosystem and farming systems to industrial monoculture. (Madoffe, 2008) Replacing natural grassland with *Eucalyptus* and *Pinus species* not only leads to the loss of soil fertility, but also destroys its productivity in the long run. (H Rangan - 2010) Grasslands are complex ecosystems, supporting large numbers of birds, insects, and plant species. When tree plantations are established, all the natural plant species are subjected to extremely harmful altered conditions, and vanish at the end of the day. For instance according to the responses from Makungu and Idete villagers, animals like "Digidigi" (*Dik dik*) and "Mbawala" (*Bushbuck*) together with food plants like "Mikusu" (*Uapaca kirkiana*) and "Misaula"= Musawula (*Parinari curatellifolia*) are becoming extinct in their areas.

Although Green Resources Ltd claims not to be disturbing catchment areas and stream runoff zones, because they supposedly only plant their eucalyptus and pine seedlings on

slopes and on hill tops, they still use poisonous chemicals for suppressing the growth of weeds, and controlling insect pests. Due to the nature of the terrain, where much of the land is sloping, when it rains it is very likely that the chemicals used will find their way to the adjacent valley bottoms, affecting non-target species and contaminating streams as well. In the dry season, the plantation trees continue using water from the soil, and this will decrease seepage that would normally supply water to the streams.

The farming communities in the identified timber plantations potential areas have already established their territories and it is within these territories that they have been practicing small scale agriculture, cultures and traditions since time immemorial. Introduction of large scale timber plantations will force them out of their territories plunging them into economic and cultural exploitation. This will undermine their culture, pride, dignity and their ability to remain self sufficient through wise use of natural resources (Madoffe, 2008). For instance the use of chemicals in the timber plantations has lead to a lot of complaints. Due to Mufindi paper mills, water poisoning which has impacted on fish survival, reducing water quality and killing of fish. This will have an overall impact on human population in this particular area as people are the end user of the resources in their environment

Access to shrines and graveyards

When people were moved from their traditional homes, due to the Ujamaa Villagisation Scheme, their houses and graveyards were left behind as they relocated in organised and centralised villages for improved access to social services. Under this situation, people still had access to their grave sites at the homes they had abandoned. This new trend of company control of land as in the case of Green Resources Ltd in Idete means local communities now have difficulties freely visiting these shrines and family graves. It is claimed that there are security reasons pertaining to the outbreak of fire, the biggest risk, in a plantation set up. If these people really like the plantations, why should they burn the planted trees to ashes? Denying people access to graveyards to visit their loved ones graves and their shrines will keep creating animosity towards the plantations being grown, and it is very likely they will be burnt every now and then. It goes against the human right to worship and pray to their god. This is a sign of lack of respect for free access to shrines.

Type of Investment

The real purpose of the Green Resources Ltd investment in plantations on Idete land is to make profit from their timber business, and not to improve local people's livelihoods. Corporate Social Responsibility commitments that Green Resources promised at the time they were acquiring land from the Idete community included improving the status of education, where according to members of the community, Mr Sondi, who has been a forester at Green Resources Ltd, and the Idete secondary school Head Teacher, the response has been merely to help renovate two existing classrooms and assist in the construction of a kindergarten classroom which is not equivalent to the 16,000 ha of land that was taken from the village. Moreover, this seems to be the responsibility of the government to its people, so cannot be equated to this massive production of timber.

Green Resources Ltd also committed to improving infrastructure, whereas nothing has been done besides renovating the roads to their plantations. Their effort to improve health services has been by offering 8 beds with mattresses to Idete clinic. These are the indicators that the CSR investment made by Green Resources Ltd after acquiring more than 50,000 ha (Green Resources, CDM project Report, 2010) in the region does not recognise the value of the land resource acquired by the investor, or the losses to the affected communities.

The benefit to the Idete community is far less when compared to the value being obtained from their land by Green Resources Ltd. The community facilities maintained or offered by this company are of poor quality, which in reality even the community members themselves could afford if mobilised, instead of giving up their land to an investor to get things that

should really be provided by the government. The land leased by Green Resources Ltd could be utilised as cropland (mixed farming), and for grazing as a large part of it is grassland. A simple calculation done by the 30 community members at the workshop facilitated by Envirocare in Idete indicates that with mixed cropping, one acre could yield 8-10 bags of beans, and 12-15 bags of maize in one season. One casual labourer working for Green Resources Ltd will likely get close to 750,000 Tshs annually, which is equivalent to 10 bags of beans at a good price.

Social and cultural Impacts

As far as human communities are concerned, not only do they not inhabit commercial plantations but they are in many cases not even allowed access to the plantation area. At best, they are perceived as a source of cheap labor during planting and later on, when the trees are harvested. The great loss of land area that used to have varieties of animal, bird and plants species has a critical social and cultural impact to Idete community. During an interview conducted by Dr Karumbidza with two elders in Idete, strong links could be sensed when these people said they remember songs about white elephant horns (tusks) in connection with hunting parties: things with strong cultural links which brought people together communally.

In Tanzania, as in other developing countries, there are significant gender gaps, particularly in land ownership (UNICEF, 2007; Rossi and Lambrou, 2008) where most of the land is owned by men. Due to the impossibility of using land as a collateral, women generally lack access to formal credit schemes (FAO, 2004) thus being limited in their ability to acquire agricultural production inputs such as water, fertilizers and pesticides.

Conclusions

More research is required to explore different examples of this kind of project to clarify how useful such foreign investments can be to all beneficiaries. Without considering alternative land holding structures such as village land trusts or equity-based joint ventures, definitely it will be subjecting the communities to a future food crisis and hunger. The end result is likely to be extreme poverty and a distortion of remaining moral values in the community.

These alternative development models may not be widely understood or sufficiently well recognised as credible alternatives, particularly when it comes to external investors seeking credit from financial institutions using the newly acquired land as collateral. Making these more promising models work will require innovative thinking and collaboration between villagers, district councils, investors and civil society organizations, as well as flexibility from national government and financial institutions.

If the principle of free prior informed consent (FPIC) were applied to ensure the meaningful inclusion of local people in decision-making processes about land-use projects, it would also demonstrate that villagers can be most effective negotiators on their own behalf. However they must first be given full access to information on the relevant legal and economic issues.

About Envirocare

ENVIRONMENTAL, HUMAN RIGHTS CARE AND GENDER ORGANISATION

Contact Person: Loyce Lema, Executive Director

Envirocare, P.O.Box 9824, Dar es Salaam, Tanzania

Email: Envirocare@bol.co.tz, Phone: +255222701407 Fax: +255222701407

What is Envirocare and what do we do?

Envirocare is a non-profit, non-partisan, non-governmental organisation founded in 1993, registered under a trust deed with registration No.3060 in Tanzania. We envisage a society with a clean and safe environment that can benefit all citizens equally and in a sustainable way. Our mission is to promote and support environmental conservation and improved livelihoods with a gender, human rights based and participatory approach through advocacy, capacity building and action research.

Envirocare has a track record of implementing development projects aimed at improving environmental conservation and enhancing equitable sharing of the natural resources most people in Tanzania depend on for their livelihoods. The focus has been to integrate human rights, particularly in those issues with a gender perspective, as land and inheritance rights are critical for women to benefit equally, and participate fully in community affairs. Envirocare has played a significant role in educating children and youth on HIV/Aids and to advocate for removal of communication barriers between children and parents, students and teachers. Finally, Envirocare has been outspoken in advocating for women's rights and agricultural policies favourable to the environment.

Our organisation enjoys good working relations with a number of development partners as well as with government bodies at national and local level. We value collaboration with like-minded organizations and have joined local, national and international networks as a means to increase and to share our achievements.

The Envirocare team on the second field trip

Participants at the workshop at Envirocare

www.envirocaretz.com

The CDM and Climate Change

The Clean Development Mechanism (CDM) was established under Article 12 of the Kyoto Protocol adopted by the Third Conference of the Parties to the Framework Convention on Climate Change on December 11, 1997.

"The dual goals of the CDM are to promote sustainable development in developing countries and to allow industrialized countries to earn emissions credits from their investments in emission-reducing projects in developing countries. To earn credits under the CDM, the project proponent must prove and have verified that the greenhouse gas emissions reductions are real, measurable and additional to what would have occurred in the absence of the project."

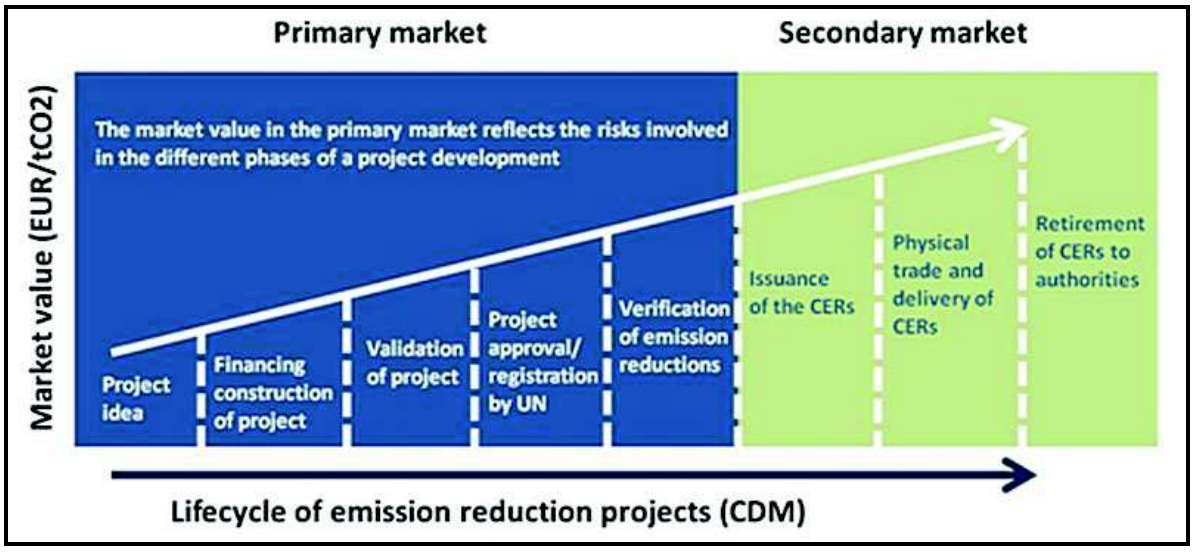
Source: http://www.iisd.org/climate/global/cdm.asp

Is the CDM effective?

How effective the CDM has been, if at all, is the subject of an ongoing debate. For polluting industries in Annex 1 (industrialised) countries, the CDM is a useful escape clause that allows them to ostensibly meet their GHG emission reduction targets under the Kyoto Protocol. CDM project offsets are generally cheaper than renewable energy technology or actual emissions reduction, and this makes them attractive to big emitters.

Together with Annex 1 governments is an array of lobbyists, consultants and brokers that represent the carbon trading industry. These feed on the reluctance of industrialised nations to engage in meaningful domestic emission reduction activities, and rather buying offset-generated credits from developing countries. Theoretical emissions reductions generated by CDM projects can be offset against Kyoto commitments with developing nations benefiting from income and 'sustainable development' that CDM projects are supposed to deliver.

A virtual army of advisors and carbon brokers (usually from or funded by Annex1 countries) has established itself in the developing world. The communities whose land and livelihoods are on the line and under-resourced civil society organisations that oppose carbon trading and CDM/REDD are at a huge disadvantage against the power of the EU, the World Bank, the United Nations, big business and international NGOs like The Nature Conservancy.



How the CDM works in theory is different from how it has performed on the ground
Few projects result in a genuine net reduction in greenhouse gas emissions

The role of the United Nations (UN) and its agencies

CDM tree plantation (afforestation/reforestation) projects are informed by a number of UN or FAO protocols, objectives, definitions and procedures. Such projects are subject to UNFCCC initiatives such as: the Kyoto Protocol (especially article 12), Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords), and COP/MOP decisions with reference to CDM. Decisions of the core decision-making body, the CDM Executive Board (EB) and the approved baseline methodology AR-AM0005 are also relevant. CDM projects must be registered and approved by the CDM EB before they can generate and sell CERs. See (http://cdm.unfccc.int)

While the Kyoto Protocol is generally considered to be of some value due to its legally-binding status, other more recent developments such as the Copenhagen Accord (COP15) and the Cancun outcomes are increasingly being seen as weak and likely to encourage even greater GHG emissions as long as access to relatively cheap fossil fuels is possible. New dirty energy sources such as oil from tar-sands, fossil gas from shale-beds and methane-hydrate from under-ocean deposits, in combination with dubious market-based carbon offset deals under the CDM and REDD, appear likely to undermine any genuine shift towards substantially reducing the level of atmospheric CO_2.

Another area of concern is that UN agencies such as the FAO, UNFF, UNEP, UNCTAD, and UNIDO are going along with the UNFCCC to encourage ineffectual CDM-type offset solutions that obscure the urgent need for the serious pursuit of GHG emission reductions at source.

It seems that the next UNFCCC COP that will be held in South Africa this year is unlikely to deliver anything substantial either. The outcomes are already written on the wall, with a kind of blanket 'REDD for all seasons' agreement that will open the floodgates to allow more money-grubbing resource-grabbers financed by the World Bank to pour into the developing world.

Sub-national CDM contradictions

In developing countries, CDM is ineffective against climate change because national emission reductions by CDM projects are neutralised by increases in emissions from other sources.

Several CDM projects In China ostensibly reduce millions of tonnes of CO_2 and CO_2 equivalent emissions through methane capture in coalmines and HFC 23 gas conversion activities. However many new coal power stations are being built and millions of new vehicles put on the road. Their emissions will far exceed the reductions claimed by the country's CDM projects.

In India, the second largest producer of CDM carbon credits, new and expanding industries that are heavy GHG emitters, such as the steelworks of TATA and POSCO, would wipe out any reductions made through CDM projects, or even 6 million hectares of carbon 'forests' (eucalyptus plantations), that the government plans to plant on community farm land.

CDM projects in Indonesia have replaced coal or mineral oil with fossil gas with the intention of reducing GHG emissions. Meanwhile, forest destruction and transport emissions have grown out of all proportion to the minimal GHG reductions made with fuel-switching. The clearing of forests for oil palm plantations, linked to fires that penetrate and destroy peat beds, releases far more CO_2 than CDM could offset in that country. Similarly, methane to electricity CDM projects in Brasil do little compared to GHG emissions from logging and industrial agriculture.

Such environmentally destructive activities help keep luxury vehicles on the road, and satisfy excessive demand for meat and paper products in the industrialised world.

Will the CDM be different in Tanzania?

Norway is the home of GRL's parent company, Green Resources AS, as well as a major cement producer, Scancem International AS, which owns Tanzania's largest cement factory, Tanzania Portland Cement (TPCC). Both companies exploit Tanzania's natural resources for a profit, and both are appropriating land and displacing its occupants. Also, both projects are owned and controlled by non-Tanzanians from a distance. Cement production has the highest GHG emissions of all industrial activities. If GRL's tree plantation projects really do offset GHG emissions, it might be more logical, and ethical, to use them locally to compensate for the TPCC cement factory emissions, instead of exporting carbon credits to Norway.

> See the Norwatch report - Norway's Scancem in Bitter Land Conflict. www.norwatch.no/20080225620/english/industry/norway-s-scancem-in-bitter-land-conflict.html

Norwegian involvement in developing countries is often perceived as benevolent, even charitable. However when considering the way in which GRL has conducted its business in Tanzania, there is doubt that their activities have benefited local communities, and their promises of social upliftment and economic development must be viewed with suspicion. This raises the question of what GRL's true intentions are, and whether there is another agenda behind its plans to expand its plantations into Africa using climate change as justification. In the final analysis, local people remain poor, while Northern investors control their natural capital.

Norway's foray into promoting REDD in Tanzania appears to be based on good intentions, but there may be other motives, such as oil and gas reserves along the coast of Tanzania. See www.statoil.com/en/About/Worldwide/tanzania/Pages/default.aspx.

The good work done by Norwegian individuals and organisations in the fields of environment and social development in Africa should not be confused with Norwegian corporate ambitions and activities.

The CDM and energy politics

In almost every country's development plans, scenarios for increased energy consumption are the norm in the short-term at least. Whether energy is from renewable sources or not, it will inevitably result in more energy-intensive development, maintaining 'business-as-usual' production and consumption scenarios. Under such circumstances, it is likely that the over-exploitation of all types of natural resources will continue to increase, resulting in greater habitat loss and pollution. Unless global growth in consumption is reversed, there will be ever-increasing demand for energy from all possible sources, inevitably resulting in more of the type of unsustainable industrial expansion that led to the present climate crisis in the first place. 'Unlimited growth' will thwart conservation efforts, causing greater damage to ecosystems, and further degrading water, soil and air.

Biofuels have been hailed as an energy-source that results in lower CO_2 emissions in transport than petroleum. From a production perspective, some biofuels, such as ethanol from sugarcane, are more energy-efficient. However in the context of the overall fuel mix, percentage-based biofuel targets, such as those of the EU, merely disguise plans for increased fossil-fuel consumption. Making biofuel crops eligible for the CDM will only add to the problem.

These issues are echoed at many CDM projects around the world. Increased fossil fuel use is overtaking the much slower uptake of renewable energy projects such as solar, wind, and geothermal, the only sources of 'clean energy' that can genuinely reduce GHG emissions. More coal is being burned with the justification of 'claiming a historical right to development

space'. In South Africa – Africa's highest per capita emitter - cheap coal generated electricity is used to sustain energy-guzzling smelters and the minerals extraction and processing industry. "Clean coal" technology is considered justification for business as usual.

While much hot air is being generated in climate talks, and political posturing continues to delay real action, consumption of coal, petroleum and gas continues to grow. Much of it now comes from developing countries where fossil fuels have been exploited at lower rates than in the US and Europe, where easily accessible reserves have been depleted. This has increased demand from sources like tar sands in Canada, and fossil gas in Eastern Europe.

The long term geological effects of extracting coal, oil and gas from the Earth's mantle are not known, yet ever-more invasive and damaging technologies are employed to extract every last bit of fossil fuel from the planet. Countries guilty of high CO_2 emissions are pursuing carbon capture and storage (CCS) to enable further over consumption of dirty energy. In addition to the huge costs and delays associated with research and development for CCS, it can only make things worse by delaying a real move to energy efficiency and low-carbon renewables.

Norway is promoting CCS it seems in anticipation of being able to pump carbon into old oil wells. This is not only intended as a means to prevent CO_2 from accumulating in the atmosphere, but also to help extract oil and gas from declining wells. Should CCS be included as a CDM-type mechanism in a post 2012 climate agreement, it could provide an incentive for Norway to pump even more oil from its wells in the Barents Sea, and potentially the Indian Ocean off Tanzania too. It seems it is only a matter of time before even more dubious methodologies such as CCS and biochar are incorporated into Kyoto-type mechanisms, legitimising more false solutions to climate change.

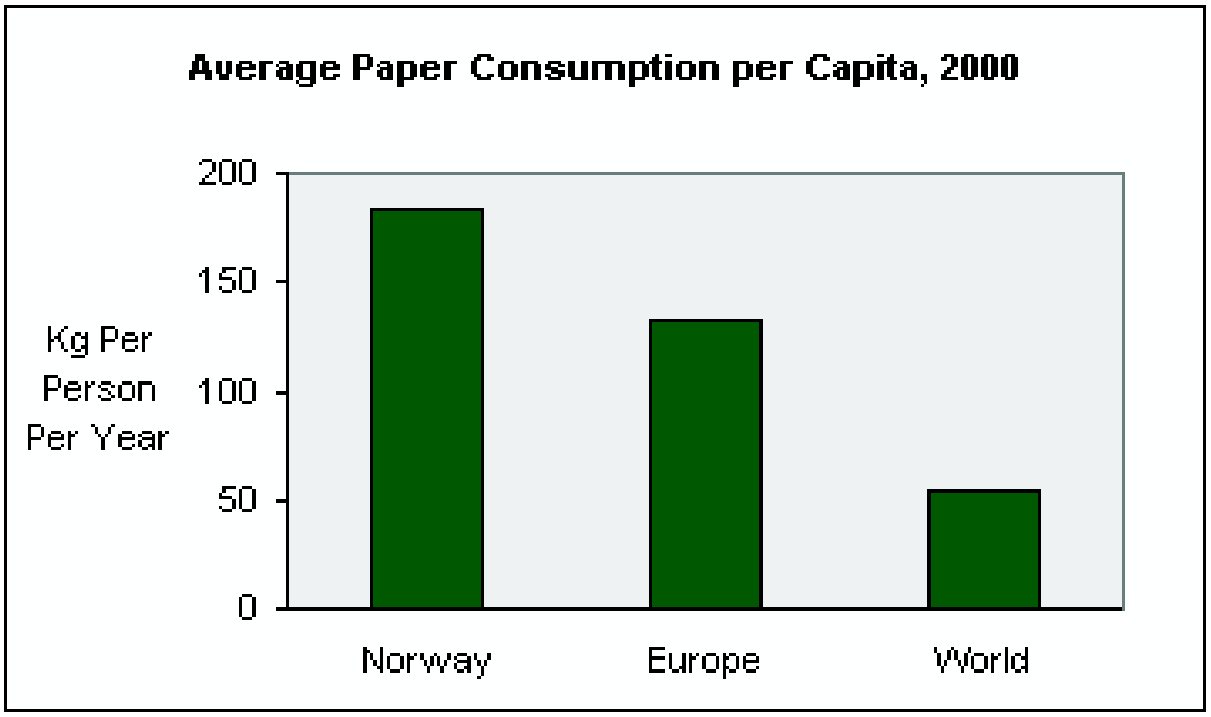
Barents Sea oil boom announced by Norway - www.neftegaz.ru/en/news/view/95494

For more info on CCS – FOE Denmark/NOAH Energy and Climate at http://ccs-info.org

Norway says it hopes to become carbon-neutral by 2030, focusing mainly on controversial quick fixes rather than energy efficiency and reductions in fossil-fuel production and consumption. One such fix could be to reduce logging in Norway while increasing the use of imported biomass, such as wood chips, as an alternative to coal in power plants. Biomass fuels are said to be carbon neutral but this would overlook transportation emissions if shipped from East Africa or other distant regions, not to forget the emissions from plantation establishment.

Norway is not short of trees, especially considering its population of less than 5 million that could easily fit into an African city. According to the 2005 FAO State of the World's Forests report, Norway's forests cover 9 million hectares, a fair portion of which is under plantations. In temperate regions, the difference between plantations and forests is not as distinct as in Africa, and vast areas of northern Europe are under 'planted forests' that were established after being cleared during times of war, as in the case of Germany. Such 'managed forests' are better described as timber plantations, as they consist of even-aged stands of one or two species.

The majority of Norwegian plantations appear to consist of tree species that occur naturally in the region, such as Norway Spruce, but this is not the case in African countries with invasive alien pine and eucalyptus species being most commonly used in plantations. In Tanzania there has at least been some effort to promote the growing of indigenous trees such as African Blackwood or Mpingo (*Dalbergia melanoxylon*), which have been overexploited in the past.



High paper consumption is an indicator of overall economic trends in Norway, which imports timber products equal to 65% of its exports by value
Source: http://earthtrends.wri.org/text/forests-grasslands-drylands/country-profile-138.html

What hope for the CDM?

It seems the measure of a CDM project's potential success lies mainly in its ability to create an illusion that it will in some mysterious manner actually reduce emissions and thereby negate some impacts of climate change. To maintain this illusion it needs to be continuously reinforced by the UNFCCC and its other proponents with a continuous stream of hype.

See ***CDM international photo contest*** : "Whether you are a professional or an amateur photographer, send us your best photos on the theme "CDM Changing Lives" and help the world learn about the value of the CDM". (http://cdm.unfccc.int/contest/index.html)

The deeper one delves, the clearer it becomes that the GHG emissions trading system upon which CDM depends is merely a charade, a totally false climate change solution, as many non-corporate environmental NGOs and IPOs have claimed. The determination of concerned and conscientious individuals to expose the flawed carbon markets has often taken the form of creative educational media such as these:

The Story of Cap & Trade – a fast-paced fact-filled look at emissions-trading, which is still the leading climate-change solution on the table at the UNFCCC negotiations!

Annie Leonard introduces the energy traders and Wall Street financiers at the heart of this scheme and reveals the "devils in the details" in cap & trade proposals: free permits to big polluters, fake offsets and distraction from what's really required to tackle the climate crisis. Go to www.storyofcapandtrade.org

and
Don't know about carbon trading? Don't care? Here, have a copy of my latest comic. You will. www.cartoonkate.co.uk – ***The CARBON SUPER MARKET***
Click on the image to download the pdf - read and enjoy. [3.6MB]

Will CDM plantations become part of REDD?

The UNFCCC programme for Reducing Emissions from Deforestation and Forest Degradation (REDD) could become a major offset mechanism by which carbon finance could flow to the forest logging and plantation ("afforestation/reforestation") sectors. At the Conference of Parties held in Bali in 2007 the UNFCCC's scientific body reported on how REDD (previously described as 'Avoided Deforestation') is key to mitigating climate change. The proponents of this investment tool suggest that it is possible to operate on the basis of an equitable benefit sharing mechanism targeting the poorest (Luttell, Schreckenberg and Peskett, 2007). Other 'add-ons' include so called 'sustainable forest management' (SFM) and 'enhancement of forest carbon stocks' both of which can generally be taken to mean more tree plantations.

Another confusing term used in the world of carbon colonialism is that old favourite of the FAO, "forest cover", which can be misinterpreted at the convenience of whichever country or organisation wants to manipulate data for 'forest carbon stocks', 'reduced net forest loss' or 'increased forest cover'. As we have found in the case of Green Resources Ltd, words such as 'reforestation' and 'degraded' can be used distortedly, in this case to deliberately misrepresent the condition of the Idete grasslands as 'degraded' and to misrepresent invasive alien pine and eucalyptus plantations as 'forests'. Regretfully, this departure from the truth is supported by powerful international organisations that are responsible for perpetuating such injustices through weak and often contradictory definitions that encourage the destruction of habitat and biodiversity, by defining industrial tree monocultures as a "type of forest".

The World Rainforest Movement (WRM) Bulletin # 159 describes the problem thus:

What the FAO defines as "afforestation" in fact implies the destruction of the native vegetation (usually grasslands or savannas) and its substitution by a plantation of a (usually alien) tree species. However, instead of classifying this as the process of establishing an "agricultural tree crop" (from which only wood is harvested), it raises it to the category of "forest". Why? Simply because such plantations produce wood which, according to the FAO, is what a forest produces.

In the case of what the FAO terms as "reforestation", most people would assume that through this process forests are being restored by planting native species. They would be wrong. In the vast majority of cases, "reforestation" implies the planting of monocultures of alien tree species (pines, eucalyptus, acacia, gmelina, teak, etc.) in forest areas. This means that a diverse tropical forest area can be totally bulldozed and replaced by a single tree species –alien or native- and nothing will have changed for the FAO. In its own words: "Where part of a forest is cut down but replanted (reforestation) … there is no change in forest area."

While such narrow approach clearly serves the interest of the pulp/paper and wood industries –which are portrayed as "planting forests"- it runs counter to the interests of local communities whose means of livelihoods –dependent on forests and grasslands- are destroyed under the guise of "planting forests".

This means that one of the biggest challenges to successful negotiations on REDD and LULUCF, and a post 2012 scheme to extend or to replace the Kyoto Protocol, including the CDM, is the need for clear, honest and unambiguous, and separate, definitions for forests and tree plantations. This simple issue has wasted years of time at negotiations, and cost many millions of Euros thanks to the timber industry supporters that drafted and defended those perverted definitions. This travesty of common sense and justice has been perpetuated mainly by the FAO, but the CBD (Convention on Biodiversity), the UNFF (United Nations

Forum on Forests), UNEP (United Nations Environmental Programme), the World Bank, and of course the UNFCCC have helped things along. Alongside the FSC and other groups, they must take responsibility for the resultant damage to ecosystems and communities. Even if an agreement on REDD is reached, the problem posed by this shortcoming will hinder if not prevent effective implementation.

CDM/REDD and Indigenous People's Rights

A Global Forest Coalition workshop held in the Nanyuki District of Kenya (September, 2009) and attended by 35 representatives of NGOs and IPOs from Cameroon, Kenya, Moçambique, South Africa, Tanzania and Uganda, deliberated on the potential impacts of REDD-type projects. A field visit to the Yiaku community in Dol Dol, Laikipia North District illustrated the double pressure that communities are subjected to. Along the 60 km drive, participants witnessed how a severe drought had affected the area. Rivers had dried up, animals had died, no grass remained; and humans, their livestock, and wildlife competed for the little vegetation still found in the desert-like landscape. The Yiaku community's access to the forest which they have used for generations has been restricted because it is now earmarked for REDD.

Experiences throughout the world show that industrial tree plantations usually have deleterious effects on the rights and livelihoods of local communities, and REDD is unlikely to be different. The rapid expansion of project activity in line with CDM/REDD financing for offsets could have a number of impacts on community rights, access and livelihoods, which include, but are not limited to the following:

- Increased state control over forests, and restriction of local communities' access to non-timber forest products that they depend on.
- Government support for anti-community and exclusionary models of tree plantations and forest conservation that may include evictions and land expropriations once forests become REDD carbon banks.
- The loss of community cropland and grasslands due to the expansion of plantations to establish carbon related fake-forest investments.
- The unjust targeting of indigenous and marginal communities as being responsible for deforestation and damage to grassland. This usually precedes displacement.
- State and business interests zoning forest lands without the fully informed participation of forest dwellers or affected local communities
- Unfair and abusive contracts imposed on communities who have limited understanding and experience of legal agreements or national laws.
- Embezzlement/misappropriation of monies intended for affected local communities.

Although REDD should be based on community-based forest management (CBFM) principles that benefit communities, it could still affect communities negatively. If REDD is correctly formalised, communities could plant fruit and indigenous trees that produce food and other benefits for households. Without guarantees that human, customary and economic rights of indigenous and marginal communities will be protected and respected, forest conservation and restoration programmes will remain but re-colonisation and the final phase of commodifying spaces of Africa left in indigenous hands after the first round of formal colonialism.

See article by Dennis Martinez: ***The Missing Delegate at Cancún: Indigenous Peoples***
http://blogs.nationalgeographic.com/blogs/news/chiefeditor/2010/12/the-invisible-delegate-at-cancun-indigenous-peoples.html

The myth of plantation carbon sinks

Shortly before the UNFCCC COP16 in 2010, approval for HFC 23 conversion projects was briefly suspended by the CDM EB. This might have been good news were it not for the later decision of the EB to approve carbon credits for several HFC projects. What does this say about CDM methodologies? Would the HFC 23 projects that are in development object to being denied huge financial gains? Would they have legal grounds to claim damages from the UNFCCC, because technically they had followed the rules? See: www.carbonretirement.com/content/doubt-over-integrity-half-offset-credits-ever-produced

Now we know that there are at least two things that can go wrong with CDM project proposals. Firstly, mistakes are made in calculating their GHG reduction potential. Secondly, they can be rejected when dishonest claims are revealed. The CDM A/R methodology is reputedly one of the more stringent, requiring substantial investments of time and money in order to comply with all aspects of the application process, yet only yielding temporary CERs (tCERs) which have far lesser value than the 'permanent' CERs.

Why then are Green Resources Ltd, the Government of Norway and the IFC pushing so hard to have to the Idete plantation registered under the CDM? Is there a danger that the CDM methodologies for plantations could also be suspended, perhaps permanently?

A previous version of the CDM A/R methodology included an interesting phrase that has been excluded from the current version:

> "AR-AMS0005: Simplified baseline and monitoring methodology for small-scale afforestation and reforestation project activities under the clean development mechanism **implemented on lands having low inherent potential to support living biomass**."

Had this clause remained, it is likely that it would have prevented registration of CDM plantation projects and the transfer of fertile well-watered land in developing countries into the ownership or control of over-consuming developed nations.

It is also necessary to question GRL's claim that CDM registration is necessary to make their plantations financially viable. Its projects have already received large grants and investments. It has in any case committed to use any proceeds from carbon credits to fund its own future expansion, which would indicate that CDM registration and carbon credit income are not needed to ensure the viability of the existing project.

Now tree plantations are promoted as 'climate mitigation', 'sustainable development', 'forest conservation' and of course 'technology transfer'. In the case of Green Resources Ltd and its partners, these promises are much like the propaganda used by the Apartheid government in South Africa; where we had "separate development", "homeland autonomy" and "mother-tongue education" as the justification for pushing poor black people into over-crowded "independent states" where they would provide a labour pool to industrial corporations such as Anglo American, Mondi, Sappi and of course other mostly white-owned farms and businesses.

The current CDM A/R methodology relies on the nonsensical interpretation of the word 'reforestation' and that alone should be sufficient reason to reject all of GRL's claims relating to their plantation projects. It is dishonest to present plantations as 'forests', but more so to claim that their tree plantings are 'reforestation', when there is little doubt that the grassland being converted has been grassland for thousands of years.

To quantify the direct GHG emissions caused by this 'land use change' will require a thorough assessment of not only the above and below ground biomass losses, but also the ongoing emissions of CO_2 and methane from erosion and decomposition of soil organic material. It would not be difficult (based on other examples) to project how much carbon would be lost from the soil in a typical short rotation tree plantation similar to GRL's at Idete.

The Uruguayan study mentioned below has strong implications for what is likely to happen in Tanzania. Loss of soil carbon, nutrient depletion, erosion and compaction would contribute to leakages that should be accounted for in calculating net CO_2 sequestered over the full crediting period. Finally, the emissions from the activities required to effect restoration of the grassland at the end of the Idete lease 90 years from now will need to be estimated.

See: ***Preliminary study of prairies forested with Eucalyptus sp. at the northwestern Uruguayan soils*** - *www.chasque.net/guayubira/plantaciones/**prairies**.pdf*

The following study raises further doubts about the high sequestration tonnages calculated by the authors of the VCS PDD for Uchindile and the CDM PDD for Idete. Both are premised on questionably low baseline tonnages (between 0.5 and 1.0 tons per hectare, and very low or no leakages. Recently 2,000 hectares of the plantations at Uchindile were burned and at the same time GRL received USD 900,000 for the sale of carbon credits through Carbon Neutral. Does the loss of biomass due to the fire not constitute leakage?

Ecosystem Carbon Stock Influenced by Plantation Practice: Implications for Planting Forests as a Measure of Climate Change Mitigation - Chengzhang Liao, Yiqi Luo, Changming Fang, Bo Li
www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010867

Abstract
"Uncertainties remain in the potential of forest plantations to sequestrate carbon (C). We synthesized 86 experimental studies with paired-site design, using a meta-analysis approach, to quantify the differences in ecosystem C pools between plantations and their corresponding adjacent primary and secondary forests (natural forests). Totaled ecosystem C stock in plant and soil pools was 284 Mg C ha^{-1} in natural forests and decreased by 28% in plantations. In comparison with natural forests, plantations decreased aboveground net primary production, litterfall, and rate of soil respiration by 11, 34, and 32%, respectively. Fine root biomass, soil C concentration, and soil microbial C concentration decreased respectively by 66, 32, and 29% in plantations relative to natural forests. Soil available N, P and K concentrations were lower by 22, 20 and 26%, respectively, in plantations than in natural forests. The general pattern of decreased ecosystem C pools did not change between two different groups in relation to various factors: stand age (<25 years vs. ≥25 years), stand types (broadleaved vs. coniferous and deciduous vs. evergreen), tree species origin (native vs. exotic) of plantations, land-use history (afforestation vs. reforestation) and site preparation for plantations (unburnt vs. burnt), and study regions (tropic vs. temperate).

The pattern also held true across geographic regions. Our findings argued against the replacement of natural forests by the plantations as a measure of climate change mitigation."

While there may be limited correlation between carbon stored in forests and grassland, what is absolutely certain is that with each plantation rotation, trees will be cut and converted into consumable products that will soon release the CO_2 temporarily stored by the trees as they grew. This could be considered a break-even situation at best, but when adding in the other

GHG emissions resulting from fossil-fuel inputs, emissions by workers and other sources such as air travel between Norway and Tanzania, and methane and carbon loss from the soil which have been ignored in the Idete CDM PDD, it raises the possibility that there may indeed be a net emission of carbon from the project.

How then would one trade in carbon 'debits'?

Negative Impacts of Carbon Sequestration Strategies
Source: Jackson R.B et al (2005) "Trading Water for Carbon with Biological Carbon Sequestration", Science 310(23):1944-1947.
Contact: jackson@duke.edu www.biology.duke.edu/jackson/science05.pdf

"Most experts agree that the current warming trend is mainly due to the rapid increase in atmospheric CO2 from anthropogenic sources. In order to reduce and/or mitigate the potential adverse effects of increasing temperature on ecosystems and human well-being, a variety of strategies are needed to reduce CO2 emissions and remove carbon from the atmosphere. One way to manage carbon is to use energy more efficiently and to reduce fossil fuel combustion. Another way is to increase the use of environmentally friendly fuels and technologies. The third and the most recent way implies the so called biological carbon sequestration.

One of the most prominent tools for biological carbon sequestration is the plantation of trees, known to store carbon from CO2 during the photosynthesis process. Although the plantations provide a tool to manage the Earth's carbon cycle, the existent sequestration strategies do not seem to account for their full environmental consequences.

A group of international scientists have explored the trade-offs and benefits of carbon sequestration by existing tree plantations worldwide. After combining field research, synthesis of more than 600 observations and climate and economic modelling, the results of the study show that afforestation of grasslands, shrublands, and croplands for carbon sequestration may indeed cause several environmental problems that could outweigh the benefits.

In particular, the global analysis has shown that trees of all ages have larger water demands than crops or pastures. Consequently, the existing plantations dramatically decrease stream flow causing reductions of 38% in water supply with losses increasing as the trees aged and 13% of streams drying up completely for at least one year.

The study also shows that plantations not only have greater water demands, but they typically have higher nutrient demands as well. These demands may change soil chemistry in ways that affect its fertility and sustainability leading to soil salinisation and acidification in some cases. However, these general trends in water use and soil chemistry must be adjusted to include local factors, viz. site history, soil texture, and the availability and quality of the groundwater.

The study cited cases where conversion of croplands to forest might improve water quality through the reduction of nutrient, pesticide, and erosion runoff from crop production. Reforestation [with forests] of floodplains could also be beneficial for maintaining biodiversity, reducing erosion, and controlling groundwater discharge. Based on their findings, the authors argue that the evaluation of the benefits and trade-offs of tree plantations will be crucial for the development and implementation of sustainable sequestration policies worldwide. They suggest that one way to do this is by comparing the value of other ecosystem services gained or lost with those of (plantation) carbon sequestration."

EDF - Soil Carbon Sequestration in U.S. Rangelands
http://www.edf.org/documents/10673_Soil_Carbon_Sequestration_white_paper.pdf

"Around 90% of carbon in rangeland systems is located in the soil (Schuman et al. 2001), as opposed to aboveground biomass."

"Soils hold over three times as much carbon as the atmosphere (Lehmann & Joseph 2009)"

"Each ton of carbon stored in soil removes or retains 3.67 tons of CO2 from the atmosphere"
"Soil organic carbon makes up approximately 50% of all soil organic matter (Wilke 2005, Nelson and Sommers 1982)"

Establishing tree plantations in grasslands where soils are prone to erosion has severe negative consequences. Throughout Idete one can see evidence of old landslips (erosion), possibly triggered by clearing for food gardens. If merely removing small patches of grassland vegetation can have such consequences in the area, it is probable that large tree plantations would cause far greater damage, especially when logging and extraction takes place, and hundreds of hectares are left completely devoid of vegetation cover. However the risk appears to be highest quite soon after the initial disturbance as the delicate balance between slope, moisture and soil weight needs only be slightly disturbed to trigger soil movement.

A sinkhole in grassland below recently planted eucalyptus trees. Idete, Tanzania 2010.

30 years after this area was planted to eucalyptus. Sabie, South Africa 2004.

Unpacking the Idete plantation CDM PDD

UNFCCC/CCNUCC

CDM – Executive Board

PROJECT DESIGN DOCUMENT FORM
FOR AFFORESTATION AND REFORESTATION PROJECT ACTIVITIES (CDM-AR-PDD) -
Version 04

SECTION A. General description of the proposed A/R CDM project activity:

A.1. Title of the proposed A/R CDM project activity:

Reforestation at the Idete Forest Project in the Southern Highlands of Tanzania

Version number: 01

Date of the document: November 23rd , 2008

A.2. Description of the proposed A/R CDM project activity:

The proposed A/R CDM project activity described in this document is for a single area project referred to as the Idete Forest Project (IFP) with multiple "discrete areas of land" in which planting of trees will take place. It is located in the Southern Highlands of Tanzania in Mufindi District, Iringa Region.

Dated 23rd November 2008, this document was submitted to the CDM EB as the basis for GRL's application for the Idete plantations to be registered as a CDM project. See: http://cdm.unfccc.int/Projects/Validation/DB/U8X9GK2B480JL11FFZYY4569RLALS5/view.html

Quite coincidentally it seems, the Perspectives/ Point Carbon Due Diligence report prepared for the Norwegian Finance Ministry was completed only a day later, on November 24th 2008. Throughout the Idete CDM PDD there are claims and statements that can be shown not to be true. Some of these are discussed below:

> "The top soils have been exposed to excessive annual traditional/accidental fires in most parts, and therefore largely devoid of humus hence prone to erosion and occasional landslides" (Idete CDM PDD)

During our fieldwork in the area there were no obvious signs of excessive burning such as blackened tree trunks and exposed soil. There was little evidence of erosion apart from where poor road drainage had caused loosened road material to wash into the adjacent grassland, and a few old landslips were observed. However the slump pictured later in this report appears to have been triggered by the establishment of a eucalyptus plantation on the upper side of the slope. Pitting could have increased the flow of rainwater into the ground, and this in turn to produce a channelling effect beneath the soil surface.

If anything, the general condition of the Idete grasslands was indicative of the need for fire as there were signs in parts of an excessive build-up of dead grasses, and of increasing recruitment of forbs and woody shrubs. The Green Resources Ltd plantation manager informed us that the grasslands in the project area had not been burned since 2005, but controlled burns were planned for September 2010.

"Grazing in the project site was not being practiced prior to project implementation, firstly because the land terrain does not favour the practice due to its undulating nature with steep slopes posing danger for animals and secondly, apart from long distances they may have to cover to graze animals in the project area, there is also no shortage of grazing land, as most of the community land is grassland as well and open for grazing by all. Hence the proposed A/R CDM project activity will not result in displacement of grazing activities to land outside the project boundary." (Idete CDM PDD)

Local land users would not burn the grasslands if there was no grazing of cattle in the area. The terrain within the plantation project area might be undulating but steep slopes that could pose a "danger for animals" were not evident. Areas where cattle are grazed is determined by seasonal changes and grazing quality which necessitates movement over the whole area.

"The land use activities in nearby villages (outside the project boundary) comprise of small scale farming, at a subsistence level with limited livestock grazing close to the villages where cattle is kept mainly in kraals. Most of the crops grown are annuals such as maize, beans, peas, potatoes and vegetables (cabbages). Bananas are also grown in the area. Maize is grown as both a food and cash crop. Due to low productivity of soil in the project site and distance from human settlements, very small areas of land (less than 100ha) has ever been under arable cropping by local communities." (Idete CDM PDD)

This statement attempts to show that local communities neither need nor utilise more than a tiny portion of their land. It completely ignores the importance to local people of hunting for animals and birds for food, gathering plants for food and medicine, collecting fuel wood and building materials, and grazing livestock. Soils in the area are fertile and people are therefore able to produce good crops without irrigation on relatively small plots.

"The present vegetation in the plantable area is grassland, which is in the final stage of a fire regime which has overtime led to the degradation and decline of the original miombo forest with some montane forest species. Remnant isolated trees of the dominant species remain....." (Idete CDM PDD)

Grasslands are dynamic ecosystems, constantly in flux, changing between seasons and climatic variations induced by variable rainfall and drought. If the Idete grasslands are in the final stage of a fire regime, it suggests that they are at or approaching a state of climax. Trees are intruders by nature, being spread into grasslands through the droppings of animals and birds that eat their fruits in adjacent forests and woodlands. Without fire to control this intrusion, grassland may well develop woodland characteristics as an unnatural consequence.

"None of the softwood or hardwood exotic species to be planted has been officially reported invasive in Tanzania or in the region. However, Eucalyptus may be invasive in some parts of Tanzania if it is improperly managed. At IFP, Eucalyptus is managed in a way that inhibits its uncontrolled spread, hence will not be invasive." (Idete CDM PDD)

Hillsides and wetlands around Sao Hill have become infested with pine trees which could only have been spread from the Sao Hill plantations. Eucalyptus is also showing signs of invasiveness in other parts of Iringa Province, and it is highly unlikely that the future situation at Idete will be any different, given the inadequate manner in which Green Resources Ltd manages its plantations at present.

"Currently there is one permanent nursery, but temporary nurseries are sometimes established close to the next planting site within the project to minimize transportation time and cost, and also as community nursery. The operations that are conducted at the nursery include soil mixing, pot filling, preparation of seed and transplanting bed, watering, fertilizer application, weeding, root pruning and sanitary activities. Seedlings are raised in polythene tubes and the mixture comprises of 7 parts of forest top soil, 1 part cow manure, 1 part sand and 1 part mycorrhiza." (Idete CDM PDD)

The temporary nurseries are apparently situated in sensitive riparian zones or on wetland soils. This facilitates access to water for irrigation and organic-rich peat-like wetland soil ("forest top soil") which can be mined to provide planting medium for the plantation tree seedlings. This has implications for wetland areas becoming infested with weeds and polluted by waste.

"In addition the carbon in soil, dead wood and litter is not expected to increase in the baseline compared to the project scenario when the grassland is planted with trees than in the baseline, and as such can be conservatively neglected in monitoring." (Idete CDM PDD)

Certainly it is unlikely that "dead wood and litter" will represent additional carbon as it will simply be replacing some of the soil carbon that will be lost as acidity levels increase. However the branches and other plantation debris represent a real danger in terms of increasing the fuel load and therefore an increased risk of wildfires spreading through the plantations.

"No natural regeneration potential for trees or shrubs is identified within the project activity boundary. This is principally because of the continuous fire regimes which stop trees from regenerating, coupled with the degraded nature of the soil, and aggressive grasses which prevent trees from growing. As such the sum of net carbon stock change in the biomass/carbon pools within the stratum is set as zero." (Idete CDM PDD)

The trees and shrubs within the grassland are not likely to "regenerate" while an adequate fire regime is in place. However it is not true to say "the degraded nature of the soil, and aggressive grasses" because the soils are not degraded and the grasses are dominant but not aggressive. There is evidence that undisturbed, i.e. not ploughed, grassland soils are a stable repository of carbon, and it is therefore not acceptable to maintain that carbon stock change in grasslands can be "set as zero".

".....lands to be reforested within the project boundary are unmanaged grasslands occupied by scattered trees and shrubs. As elaborated in section C.5, due to the barriers in finance, technique and institutional, the only realistic and credible alternative available to the project is to continue the current land use as grassland. In this scenario, natural regeneration is not expected to occur, because the lands have poor soils and there are few seed sources and the tall grass cover prevents seeds from landing on the soil and out compete young seedlings. This is demonstrated by the failure of tree-growth." (Idete CDM PDD)

"Natural regeneration" in a grassland context means for the land to remain as grassland, and the "failure of tree growth" is therefore perfectly normal and should be welcomed. An ambition to steer the succession of the Idete grasslands towards some Norwegian notion of "forest" is ill-conceived and disrespectful of African landscapes, people and cultural values.

"Afforestation activities at Idete Forest Project are done in grassland areas. Planting in most parts of Idete is done in pure grassland areas and pitting is the only type of site preparation needed. Prior to transplanting, planting spots are marked out in the field where holes of diameter 20-30 cm and depth 30-40 cm are dug at a spacing of 2.5 x 2.5 m. The activity is carried out manually. At IFP beating up is done two weeks after planting by replanting seedlings which died or are in a weak states." (Idete CDM PDD)

Here the GRL language changes to "afforestation" although it is just as misleading to use this word to describe tree plantations as it is "reforestation". Industrial timber plantations are part of a wood production process that is anything but compatible with nature. GRL has failed to list the many toxic chemicals that are a part of this process. Pesticides and herbicides sprayed on or around young trees dissolve in run-off and end up in people's drinking water and the aquatic ecosystem where they can cause numerous problems.

"Both manual and chemical weeding is done at IFP as a way to control weeds. Spot weeding is done manually by clearing the area in a 1 metre radius immediately surrounding the seedling. One of the plantation operations at IFP is slashing of tall grasses. Slashing is done manually at IFP using bush knife where tall grasses and other herbaceous weeds compete with the seedlings. Chemical weeding is used to a minimal extent, usually with roundup (Glyphosate) by spraying in the plantation site. The chemical is highly effective as it completely kills all weeds/grasses leaving the site void of weeds for a whole season." (Idete CDM PDD)

The weeds referred to here are indigenous grassland plants. A one-metre radius equals an area of approximately 3 m^2 and at a spacing of 2,5 metres between centres this represents slightly more than 4800 m^2 per hectare (10,000 m^2) or 48% of the land area within the plantation. The question of how much chemical herbicide is applied is difficult to answer because it depends on a number of factors, including wastage and the level of proficiency or training given to the workers involved, but if applied repeatedly over several thousand hectares it could run into hundreds of thousands of litres of herbicide concentrate during the plantation establishment phase at Idete.

"The only leakage is from fuel use (excluding transportation). This is quite limited, but includes fuel use by pumps at the nursery, fuel for burning the fire breaks and for powering chain saws for silvicultural activities and harvesting." (Idete CDM PDD)

From the above it would seem Green Resources Ltd has a unique understanding of GHG leakage. All the herbicides and insecticides (pesticides) it uses are derived from fossil fuels and if any chemical fertilisers are used, those too come with a carbon footprint. Fuel used for transportation should also count as leakage.

Every worker has a carbon price tag that should be included too. One of the major contributors to leakage is through those people displaced from the area who will need to re-establish homes and gardens at new sites, where it will mean digging up more grassland, cutting more trees to build homes (to bake bricks). What about the carbon-heavy "forest top soil" mined for their nursery operations?

At every turn there is evidence of carbon leakage, which means that the amount of sequestered carbon estimated by GRL is too low. Another major contributor to leakage is that the biomass related goods and services previously obtained from the grasslands now under GRL's control (grazing, hunting, gathering, etc.) will be displaced to other areas, which means that the baseline information provided in the PDD cannot be considered reliable.

"It is assumed, in line with the management plan that all vegetation will be cleared during site preparation (by cutting down the trees and shrubs manually), and so emissions from biomass loss due to conversion of grassland to forests are calculated applying equation B.28. Since there are no pre-project A/R activities (Section II.5 (2)), the carbon stock changes in living biomass for this category are neglected."

"Carbon stocks in the living biomass of unmanaged grasslands have been estimated assuming maintenance of the grassland in its present state. The land use under the baseline scenario as elaborated in Section C.4 of the PDD falls under one stratum; namely 'grassland with scattered shrubs and isolated trees'. The carbon stock change in aboveground and belowground biomass for the grassland is estimated based on vegetation data collected from temporary sample plots for trees and shrubs. In accordance with guidance contained in paragraph 35 of EB 42 meeting report, GHG emissions due to removal (loss) of herbaceous vegetation as a component of non-tree biomass are neglected in this methodology. **As such herbaceous vegetation was not sampled or included in emissions**. It is assumed that both trees and shrubs are in a steady state. This is evidenced by the fact that the area has been in grassland with scattered shrubs and isolated trees for over three decades. No annual changes in the carbon stocks of the living biomass have been noted." (Idete CDM PDD)

It appears that some innovative thinking has come into play by not taking into account pre-project carbon accumulation. This approach assumes that had there been plantations on the site previously, they would have contributed to increasing the 'estimated living biomass' carbon stock. Too bad, though, that it will only include a few woody shrubs and trees. Everything else in the grassland; the grasses, sedges, bulbs, orchids, ferns, succulents, herbs, fungi, insects, mammals, crustaceans, molluscs, earthworms, bacteria, and people, has been disregarded so that a conveniently low baseline for 'living biomass' can be established. It seems that the fact that it is grassland, and not a forest, is beside the point. The calculating corporate mind can only think in terms of tons of wood, on the assumption that below ground biomass can be estimated using a root-shoot ratio of .25 (1:4). Above-ground portions of trees and shrubs that can be easily cut, dried and weighed are then allocated 80% of the baseline carbon. Trees and shrubs in fire-dominated grasslands are known to develop large underground stem and root-systems that allow trees to survive frequent fires. So perhaps it should be 80% below ground?

"In accordance with methodology 5 only **trees** and **shrubs** need to be sampled for the carbon baseline *(soil, deadwood, grass, other herbaceous and leaves DO NOT NEED TO BE SAMPLED* for carbon baseline purposes.)"

"The baseline emissions are calculated by applying a baseline value of 0.961 t C/ha. It is assume all biomass will be lost during site preparation."

"The baseline data was collected in September and October 2008". (Idete CDM PDD)

So according to the Idete PDD, biomass scores 0.961 tons of carbon per hectare. Converted back to trees and woody shrubs this represents about two tons of wood. Non-wood living biomass has been disregarded together with soil organic carbon (humus/detritus), and no attempt has been made to estimate carbon embedded in the soil. There is clearly something wrong if a baseline of less than 1 ton per hectare is allocated to the Idete grasslands, and as a result the amount of CO_2 that the PDD states for the Idete plantations is questionable at best. If the true organic carbon content of the Idete grasslands is higher, it will reduce the amount of CO_2 the project can claim to reduce, and this explains the amazingly low baseline tonnage.

The Due Diligence report confirms that Green Resources Ltd did not supply soil carbon data with its CDM application: "At the time of publication, the soil analysis for the Idete project area was not yet available". It also identifies a number of other issues of concern:

"The analysis of risks for the Idete reforestation project activity as currently set up shows risks in many areas that are key for successful CDM registration. Many of these issues can be addressed by improving project design. However, some may pose significant threats to the project's success if not mitigated immediately. They are listed below:

- unconfirmed additionality due to inconsistent financial information
- unconfirmed early CDM consideration due to unclear start date of project activity
- potential gap in methodology applicability due to unclear degradation state of soil
- incomplete monitoring plan
- missing host country forest threshold definitions
- title deeds for leased land have not yet been issued and carbon rights are unclear
- with regard to community investment there are significant discrepancies between budgeted investments and actual investments realized on site

Because of these threats the project is overall rated as "high risk" and the issues listed need to be resolved before Green Resources submits the required documents for validation."

The Due Diligence report also states, "CO_2 emissions from biomass burning do not have to be accounted for since changes in the loss of carbon stock in the grassland in the living biomass are already included in the calculated part of the emissions from biomass loss". Presumably this includes the two tons of woody biomass alluded to in the PDD, but most CO_2 emissions, which would be from other biomass and soil organic carbon have been disregarded.

"Fire has been assessed to be one of the main threats to the Idete Forest Project, but there are established strategies for preventing fire and fighting fire in plantations which have been applied elsewhere in the Southern Highlands in Green Resources Ltd's operations. The fire season extends from July to December which is the dry period of the year." (Idete CDM PDD)

GRL's policy is to avoid burning the grassland prior to planting, and this means that the labour intensive and more expensive method of pitting is employed. Whether the grassland is burned or not, there will still be a similar loss of GHG to the atmosphere after the natural vegetation dies and decomposes. Again according to the Due Diligence report when fire lines are burned "this causes a large amount of greenhouse gas emissions and represents a major problem", which clearly contradicts the notion that the GHG emission potential of the herbaceous biomass in these grasslands can simply be ignored.

It is our belief that the Idete CDM PDD is missing vital information and also contains much that is incorrect. The CDM EB will need to be provided with all the missing or corrected information during the validation process for the application to proceed, however this is an unacceptable situation and it is our view that the original GRL CDM application should have been rejected outright. The same pattern of missing or incorrect information can be found in the Voluntary Carbon Standard (VCS) PDD for GRL's Uchindile and Mapanda (U&M) plantations (below).

"The DBH of most trees estimated was below 5cm. The allometric equation linking above-ground biomass to mean diameter at breast height uses dominant trees to determine biomass. **The formula is applicable and suits the conditions for tropical forests with scattered trees."**
"In accordance to the approved methodology, monitoring of the baseline is not required; therefore no data is collected during the crediting period. The baseline situation is frozen and shall again be assessed in the run-up to the second crediting period. Since the plausible and most likely land use is continuation of grassland in the state before the project started, the assessment of the baseline biomass on the vegetation cover obtained an average of **0.04 tC/ha of above ground biomass**. To estimate the belowground biomass a root-to-shoot ratio (R) a higher and conservative value for grassland categories i.e. in semi-arid area with R= 2.8 from Table 3a.1.8: Average below-ground to above-ground biomass ratio (root-shoot ratio, R) in natural regeneration for the tropical grassland category (tonnes dry matter/tonne dry matter) has been used. **According to equation B.10 of the approved methodology the baseline carbon stock before the project activity started was found to be 0.557 C/ha.** (See also Annex 3 for a detailed description of the calculations of the baseline)."
"The total biomass carbon stocks from grassland obtained based on the above ground biomass estimated is 0.557 tC/ha. To determine the below ground biomass the root-to-shoot ratio of 2.8 was selected from the GPG 2003. Estimation of baseline net GHG removals by sinks Total (tonnes of CO2 e) 21,140.19"
"D.2. Estimate of the *ex ante* leakage: The project does not anticipate any leakage."

These figures are hard to believe. A hectare of grassland must surely contain more than 40 kg of carbon in above-ground biomass. It may not be a simple task to measure soil carbon and soil biomass carbon, but the Uchindile-Mapanda verification report by TÜV Süd confirms the unbelievably low base-line carbon tonnage submitted by GRL, which is even lower than the estimate for the Idete CDM project design. This is of concern as the VCS credits from Uchindile-Mapanda have been sold by GRL, and paid for by Carbon Neutral, on the basis that those carbon credits represent actual removals of carbon from the atmosphere.

It will set a bad precedent if more projects like this are allowed, and we believe urgent action needs to be taken by the CDM EB to stop organisations like CCBA using the CDM A/R methodology and stationery to encourage polluters to buy so-called voluntary emission reductions. This is particularly urgent since a large part of the Uchindile plantation (2 000 ha.) was recently destroyed by a fire allegedly started by disgruntled workers. When taken together with the following item, the assertion that there would be no leakage is quite ridiculous, and the claimed U&M carbon sequestration must surely be grossly exaggerated.

Project Description Template for the Voluntary Carbon Standard ARR project activity: Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania, July 7th 2009
"CO2 emissions from burning (AR-AM0005 Section III.5.b.1):

No associated emissions from the loss of biomass due to site preparation and conversion of grassland (Section II.5.b.2) are envisaged as the site preparation is not performed mechanically or by burning. Burning for preparation of fire lines does occur, but is expected to be negligible, however the monitoring parameters for this are described below. **However, this is monitored and in case they do occur estimates will be adjusted using the procedure outlined in the methodology. (Equations M.21 and M.22)."**
www.climate-standards.org/projects/files/tanzania/ufp_mfp_combined_validation_VCS_PDD-1.pdf

Other issues and actors

The contribution of Norwatch

The efforts of Norwatch to challenge GRL have been extremely important in helping to expose problems with Norwegian involvement in promoting the spread of tree plantations. The NGO has published critical reports and articles on Green Resources Ltd's activities in East Africa, and these have provided an incentive to pursue the matter, and to undertake the present research. Their latest report on the topic provides comprehensive information and links to relevant information on the Internet, and is reproduced in full below. See www.norwatch.no.

Climate Project on Cheap Ground

When Norwatch examined Green Resources' tree-planting project in Tanzania more closely in 2000, one of the objections was that Tanzania leased out the ground at a bargain price. Nine years later the leasing price has sunk to a third of that.

By Pia A. Gaarder
Norwatch 05.06.09 *The English translation of this story was published on 12 June 2009*.

Photo: Jørn Stave/Norwatch

The Ministry of Finance has recently signed contracts for the purchase of about 400,000 quotas from the reforestation project Idete in Tanzania. The seller is Green Resources Limited, previously known as Tree Farms.

In 2000 Norwatch visited, among others, the mentioned Idete project in Tanzania, which at that point was in its initial phase, and wrote the report Carbon Upsets – Norwegian 'Carbon Plantations' in Tanzania (http://www.norwatch.no/rapporter/reports-in-english/43-carbon-upsets-norwegian-carbon-plantations-in-tanzania/download.html) Today the company is leasing a 7330-hectare savannah area in Idete from the Tanzanian government for 99 years. The emission reduction is to be achieved by storing carbon in the biomass at the plantation. The project is under evaluation – that is, independent control of the project's contribution to reduced emission. The prerequisite for the government's purchase of quotas from Green Resources is that the project is approved by the UN and by Tanzania.

The decision to purchase quotas from the Norwegian company was made even though the project has been criticised on the basis of several fundamental points by the consultancy firms Point Carbon and Perspectives. They were appointed by the Ministry of Finance, which has now published the report "CDM Due Diligence. Idete Reforestation Project in Tanzania" and made it available on Internet.
www.regjeringen.no/upload/FIN/okonomiavdelingen/Idete%20CDM%20due%20diligence.pdf

State Secretary Geir Axelsen has told the Norwegian newspaper VG that he knows that the company has been criticised previously and that the Ministry therefore chose to obtain a new, independent report on the project before signing the sales contract. On a series of decisive points the Idete project is characterised by the report as a "high-risk project", and the analysts question whether the quotas will be approved by the UN at all.

Reduced Leasing Price
The Point Carbon/Perspectives report examines the project with regard to the possibility of being qualified to sell quotas. However, it also examines a series of other conditions. Among other things, it appears that the lease that Green Resources pays to Tanzania today is 2.3 Norwegian kroners a hectare, or 500 Tanzanian shillings yearly (26 euro-cents).
When Norwatch visited the area in 2000, however, the lease was 1500 shillings a hectare yearly. Nine years later, in other words, the yearly leasing earnings for Tanzania have decreased by two thirds. Mr. Odd Ivar Løvhaugen, the managing director of Tree Farms at that time, told Norwatch in 2000 that the company wanted the leasing price of the Tanzania project to be further reduced in order that the project risk would be as low as possible. Tree Farms' subsidiary, Escarpment Forestry Company Ltd. (EFC), stated at the time that it was actively trying to reduce the leasing prices. The managing director of EFC, John P. Haule, told Norwatch that the authorities ought to stimulate private investments by reducing the yearly leasing charges by 50%, to 750 shillings. The leasing price is now down to 500 shillings a hectare. In Norwegian currency the lease has thus decreased from 16 to 2.3 Norwegian kroners (1.8 to 0.26 euro-cents) in 9 years.

Ground Prices Too High
Green Resources now believes that this price development indicates that the land price has been too high in Tanzania. "The land price is determined by Tanzanian authorities and not by us. But it is interesting to note that the demand for land in Tanzania is very low and that there is little development within forestry and agriculture."
"The conclusion can only be that the price of land is too high," Mr. Mads Asprem, administrative director and chief owner of Green Resources, wrote to Norwatch. Asprem was absent and answered by e-mail with regard to queries about the price development. He said that the company has still not earned any money on the project. "Unfortunately, we have not earned anything on our operation, and carbon financing is necessary to make this function," Asprem wrote.

Disagrees
The company's administrative director moreover does not like Norwatch's and Point Carbon's reports. "The report you wrote 9 years ago was an extremely biased and incorrect report. And I was shocked at how you related to reality and ignored our help and comments," Asprem said, but he has still not clarified what he meant. "With regard to the price of land and the profitability of our project, Point Carbon's analysis was completely incorrect. It was carried out by someone who lacks elementary economic insight and who had 1 year's experience in this kind of work," he added. Asprem confirmed, nevertheless, the leasing price of 1500 shillings a hectare in 2000 and 500 shillings a hectare in 2009.

Tanzanian Authorities on the Board
In Point Carbon and Perspectives' report it is also evident that, according to the Tanzanian investor guide for quota projects, Tanzanian authorities must be on the board of all companies that apply to have CDM projects approved. "This may possibly entail a large intervention in the company's ownership structure and may affect how great a share of the quotas the project company will receive if the project is implemented successfully," the report stated. Asprem has still not commented on how the company will solve this problem.

NEW:
The revised Project Design Document (version 4 - written by Green Resources after the Point Carbon-Perspective-Due Diligence-report) is now found on the UNFCCC website: Reforestation at the Idete Forest Project in the Southern Highlands of Tanzania - Project Design Document Form for Afforestation and reforestation project activities (CDM-AR_PDD)

http://cdm.unfccc.int/Projects/Validation/DB/U8X9GK2B480JL11FFZYY4569RLALS5/view.html

Facts
Green Resources AS was established in 1995 and was previously known by the company names Fjordgløtt AS (until March 2000) and Tree Farms AS (until August 2007). It is a privately owned Norwegian company. Mads Asprem is, according to the Norwegian Registry of Business Enterprises, the largest shareholder, with 30% of the shares; the next largest is Verbena Investment Holdings with 10.3%. According to http://www.greenresources.no , it employs more than 3000 persons and has since the upstart invested 250 million kroners (28.2 million euros) in its African projects. Green Resources is present in Tanzania, Uganda and Mozambique. The Norwegian Ministry of Finance has recently signed contracts for the purchase of 6 million quotas. In addition to Green Resources' reforestation project in Tanzania, the quotas come from a series of wind farm projects in China, a composting project in Chile and a biomass power plant in South Africa. See the Ministry of Finance's media release of 22 May this year.

CDM – Clean Development Mechanism
These projects are included in what is called CDM (Clean Development Mechanism) or "the green development mechanism". This is to be a stamp of quality for on official quota that will both guarantee a reduction of emissions and support sustainable development in developing countries.

CER – Certified Emission Reduction
The official name of the quotas is CER (Certified Emission Reduction). CER means that the reduction in the emission of greenhouse gases has occurred when the quota is issued and the effect has been documented. This entails that a reduction in the emission of greenhouse gases equivalent to 1 ton CO2 has been carried out in an approved CDM project.

TCER and LCER – Temporary and Long-Term Certified Emission Reduction
Tree-planting projects fall into another category of quotas. Carbon binding in wood is only temporary, and the risk is great, among other things because of the danger of fire, which would emit large amounts of CO2. Time-limited certificates are therefore issued; these have to be renewed after a certain number of years. These are called either TCER or LCER and have different periods of validity.

http://www.norwatch.no/200906051306/english/other/climate-project-on-cheap-ground.html

Tanzania's role

The project host government is an important part of the CDM equation. Where the host country's risk rating is considered high, a CER certificate may not be issued. The risk rating is a complex indicator of political stability, crime, corruption, and other indicators used by investors and easily manipulated to produce a positive reading. The Kyoto Protocol requires that the host government establish a Designated National Authority (DNA) to manage CDM projects. This often implies increasing the bureaucratic burden on already pressurised low-income countries. At a long term cost to its fiscus, the Tanzanian government facilitated this transaction despite the lack of capacity to monitor and ensure that benefits accrue from such a project. This can only be understood as a desire to promote foreign direct investment in the primary economic sector, with all the related promises of employment creation and improvement of the local economy.

To illustrate the lack of capacity in Tanzania, consultants Point Carbon and Perspectives pointed out that, while the country was rated as low risk, it still had a number of issues outstanding. The Tanzanian DNA had not yet defined forest threshold values (required to distinguish forest and non-forest in both the current and historical environment) for CDM/AR purposes, while available satellite imagery was dated 1990. The interpretation of 1990 satellite image patterns had been based on 2007/2008 ground reference data which resulted in unreliable mapping of 1990 vegetation cover. Consequently there was no evidence for the land cover at the project start year provided, and land eligibility had not been checked for each discrete parcel of land (Point Carbon and Perspectives, 2008).

The lack of initiative and the low capacity of African regimes to create local national development pathways exposes African resources to being undervalued by foreign investors. These investors come with the thinking that they are saviours who are putting 'neglected' resources to use that would otherwise have no value. Foreign Direct Investment (FDI) creates investment nests in Africa and the third world in general within this context. Therefore, when considering new investment proposals such as for CDM tree plantations, the potential costs and benefits need to be articulated clearly in order to establish whether the venture is simply a land grab, or an act of economic imperialism by which African resources continue to be siphoned off the continent at a price of a song.

Tracking the money

To better understand the game being played at Idete, we need to reflect on the events that have led to GRL suddenly becoming the "largest forestation company in Africa".

From the following, it would appear that in one of its previous lives, Green Resources Ltd became the proud owner of the Sao Hill sawmill for fifty thousand USD. It is not clear whether this was paid for upfront or out of the timely 1.3 million USD loan that NORAD provided to help get the mill operational again.

www.diis.dk/graphics/CDR_Publications/cdr_publications/working_papers/wp-99-1.htm#2

"100% of Sao Hill Saw Mill (part of the parastatal TWICO) sold to Escarpment Forestry Co Ltd (ultimate owners Fjordgløtt (Norway)) for US$ 0.05m. NORAD (the designers, financers, and implementers of the project since its inception in the early 1970s) apparently forced the Tanzanian government to reject an earlier bid from CDC, and after the sale granted the new owners a rehabilitation loan of US$ 1.3m. Escarpment Forestry already had some mobile saw mill activity in the area and owns saw mills in Uganda and Malawi. According to *Development Today* (No 15, 1998) 'the important aspect of Fjordgløtt's involvement in East Africa is to position itself for future trade in CO_2 quotas'."

More than ten years later, Green Resources AS has accumulated income from loans, grants and share deals totalling an estimated USD 100 million, underwritten with land and water belonging to communities in the affected areas. It seems there are no African shareholders, least of all the governments of the countries targeted for tree plantation land.

According to writer Khadija Sharife, the company's major shareholder structure includes: "Phaunos Timber Fund (26 per cent), New Africa (26 per cent), Steinerud (ten per cent), Macama (eight per cent), Storebrand ASA (eight per cent), Verbene Investment Ltd (seven per cent), TRG (four per cent), Preben Invest AS (three per cent)."

See ***Pulp fact or fiction?*** http://pambazuka.org/en/category/features/67534.

Also see
http://www.ccafrica.ca/businessinvestmentforum/presentations/Mutuma%20Marangu%20-%20Sao%20Hill%20Energy.pdf

GRL founder Mads Asprem in his latest incarnation as "New Africa" (www.newafrica.com) seems to have acquired 26% of GRAS shares, on a par with Phaunos, but it is not clear how much money he has actually invested in the company. Below is a breakdown of known payments totaling over 70 million USD to Green Resources AS, the Norwegian holding company that appears to be about to create a 40 million USD fortune for Mads Asprem.

- NORAD 1998 onwards US$ 1.3 million +???
- Norfund 2003 & 2010 – NOK 50 million (US$ 10 million)
  www.norfund.no/index.php?option=com_content&task=view&id=299&Itemid=37
  http://norfund.no/index.php?option=com_content&view=article&id=344%3Aindustrielle-partnerskap&catid=94%3AIndustrielle+partnerskap&Itemid=179&lang=en
- Phaunos Timber Fund (PTF) 2008/9 NOK 279m US$ 40 million) loaned to Green Resources AS via Phaunos Norge SA, a wholly owned subsidiary. It is not clear who owns PTF though. www.newenergyworldnetwork.com/renewable-energy-news/by-technology/energy-efficiency/phaunos-timber-fund-acquires-79m-shares-in-renewable-energy-company-green-resources.html
- IFC (World Bank Group) 2009 USD 18 million
  www.bioenergy-business.com/index.cfm?section=lead&action=view&id=12156
  www.ifc.org/ifcext/media.nsf/content/SelectedPressRelease?OpenDocument&UNID=4AB39481551E6F93852575D10051368C
- Norwegian Embassy in Tanzania
  Grants for CDM energy CDM projects reports – Much money for little work!
- EU renewable energy grant of €2.4 million for farmer's woodlots and bio-carbon
- www.greenresources.no/News/tabid/127/articleType/ArticleView/articleId/53/EU-renewable-energy-grant-of-24-million-for-farmers-woodlots-and-bio-carbon.aspx

The website of the Norwegian Embassy in Tanzania claims that large companies such as Statoil Tanzania AS, Yara and Green Resources Ltd have a well established Corporate Social Responsibility program with Ethics Code of Conduct or Integrated Social Responsibility (ISR): http://www.norway.go.tz/PageFiles/364144/30%2010%2009%20-%20Tanzania%20Paper%20on%20CSR%20(3).doc

From this assessment of the Idete plantation project Green Resources Ltd's performance does not support what this implies. If anything GRL's behaviour should be a source of embarrassment to Norway, not justification for giving further state financial support.

Norway's involvement

There appear to be links between agreements and aid transfer between Norway and Tanzania, and the Green Resources Ltd's activities in the country. Norway has supported many Norwegian businesses in Tanzania, several of which have developed problems and created controversy. Norway recently suspended direct bilateral aid to Tanzania due to mismanagement of aid monies for conservation projects, which resulted in Tanzania having to repay some funds to Norway.

> See: ***Norway to receive Tanzanian aid refund***
> http://theforeigner.no/pages/news/norway-to-receive-tanzanian-aid-refund/
> and ***Tanzania forced to refund embezzled funds to Norway***
> http://www.theeastafrican.co.ke/news/Tanzania%20forced%20to%20refund%20embezzled%20funds%20to%20Norway/-/2558/1063182/-/edvvsg/-/index.html.

Corruption concerns was a possible reason for the funding for the 5-year USD 100 million Norwegian programme to support REDD development in Tanzania not being given directly to the government, but rather to a number of NGOs, research institutions and universities.

> See table with details of Norway-Tanzania ***Agreements and Contracts***
> http://www.norway.go.tz/News_and_events/agreements_and_contracts/

The Sao Hill sawmill was originally established with Norwegian funding in the 1970s, and the involvement of Green Resources Ltd as the present owner of the mill can be seen as a 'rescue operation' to demonstrate that the original project has not been a failure. The cheap acquisition (for 50,000 USD) of Sao Hill Sawmill in 1998 came about soon after the report by Thorvald Gran highlighted problems with the business. Till then NORAD had spent a fortune trying to make it function effectively, with poor results. Green Resources Ltd (Fjordgløtt / Tree Farms) was at that time already in Uganda where it received NORAD grants.

Recently the Norwegian Embassy in Dar es Salaam gave Green Resources Ltd grants to produce reports on possible CDM energy from waste biomass at Sao Hill. The case of the Scancem cement factory was mentioned earlier in this report, and there are the large offshore oil exploration concessions that Tanzania has awarded to Statoil (Norway government owned). From the situation at GRL it would appear Norway has not learned from its previous mistakes. GRL claims to be a private company, but beneath this disguise it is heavily supported or underwritten by Norwegian government institutions, and must be seen as an extension of the Norwegian government, and in pursuit of its policies. Therefore, its engagement in a land use that destroys biodiversity and soil fertility implies a critical lack of knowledge and a poor understanding of the ecological importance and economic value of grassland. In view of this deficiency, will Norwegian government efforts to impose REDD on Tanzania fare any better?

> A NORAD funded report by Thorvald Gran, ***Aid and Entrepreneurship in Tanzania*** (Dar Es Salaam University Press, 1993), which includes a chapter on the Sao Hill Sawmill, gives a history of failed attempts to impose a Norwegian industrial model and corporate culture onto Tanzania. It concludes: "To sum up, these data support the idea of a power-wielding, control-oriented NORAD organization, working on a basis of Norwegian industrial and administrative rationality. If this is the case, the respondents should say that NORAD aid is poorly adjusted to social and cultural realities in Tanzania, and perhaps that Tanzanians find the Norwegians relatively difficult to work with. Both of these predictions are brought out in the data." See the full report at:
> http://www.greenstone.org/greenstone3/nzdl?a=d&c=cdl&d=HASH01ae27224cfb908f58377374.3&sib=1&p.a=q&p.sa=&p.s=TextQuery&p.c=cdl

The roles of the Norwegian government and Green Resources Ltd might be compared to the relationship of European (imperial) governments with concessionaire companies during the age of empire. A risk assessment by consultancy firms, Perspectives (www.perspectives.cc) and Point Carbon (www.pointcarbon.com), name both the government of Norway and Green Resources Ltd as equal partners and players in the Idete tree plantation project. The Norwegian government's interest in the project is to access carbon credits; however its involvement makes it easier for GRL to access land and other concessions in Tanzania. This relationship between government and investor requires further analysis, especially as it is unfolding within a country with limited capacity in negotiating the best deal. It is important to monitor that GRL remains committed to all promises and obligations in the agreement.

The financial support of the Government of Norway to Green Resources Ltd is essential. In the tree plantation business there are often delays and prolonged periods of low income before profits are generated. These might come after the hurdles of upfront finance for land leases, seed capital and establishing technical capacity have been covered.

Norway is supporting GRL's investments in the timber sector in Tanzania, and seeks to obtain 400 000 of its targeted 6 million climate quotas from tree plantation projects there. The Norway Ministry of Finance is interested in buying CERs from GRL's Idete 'reforestation' project (Point Carbon and Perspectives, 2008: 5). The Norwegian government would have to guarantee the funding from the World Bank under the funding mechanisms agreed for this type of investment. The accumulation of carbon credits also means that the Norwegian government increases its capacity for business as usual in terms of environmentally harmful carbon intensive investment at home.

The Norwegian government has reportedly announced various vague pledges to contribute various amounts in support of various projects in various countries, including Tanzania (USD 100 million over 5 years). The amounts reportedly committed range from millions of US dollars, up to a billion US dollars in the cases of Indonesia and Brasil. From this point of view, and at face value, it would seem that Norway is at the cutting edge of real commitment to action on climate change. However, the substance of the projects being supported could point to what the analyst Harald Eraker (2000) has called "CO_2lonialism" – carbon colonialism. Under such circumstances it would not be too farfetched to consider Green Resources Ltd as a resource extraction arm of the Norwegian Ministry of Finance.

Eraker - *Norwegian Tree Plantations, Carbon Credits and Land Conflicts in Uganda*
http://www.norwatch.no/200005151191/english/other/co2lonialism-in-uganda.html

Therefore the decision by the Ministry to obtain the services of consultancies Point Carbon and Perspectives to investigate the Idete carbon credit scheme of GRL came as a surprise to many, and was certainly not well received by GRL. Norwatch quotes GRL's Mads Asprem: "With regard to the price of land and the profitability of our project, Point Carbon's analysis was completely incorrect. It was carried out by someone who lacks elementary economic insight and who had 1 year's experience in this kind of work," The Due Diligence report clearly demonstrated that the proposed Idete CDM project did not compare well with what GRL had claimed in the PDD, yet in the end still gave the project qualified approval.

Approval of CERs is a complex process that requires involvement of the host country, investing country and other stakeholders such as the UNFCCC, the World Bank, the investor and some token NGO and community participation. A CDM project starts with tests and monitoring plans (the PDD stage), followed by host country DNA approval. Projects require validation before CERs can be registered by the CDM Executive Board. There is more monitoring before verification and issuance of the CER certificate. The Idete project is now at the validation stage and there is still a need for more information and possible intervention.

The Perspectives website provides insight to mainstream thinking in carbon trading circles. The question they should be asking is 'Can't see the GRASSLAND for the trees?'

Can't see the Wood for the Trees? www.perspectives.cc/Forest-Carbon.861.0.html

Perspectives – your partner for high quality forest carbon services

Many side benefits – many winners. Forest carbon projects are highly attractive projects providing many services and valuable side benefits if compared to standard carbon projects. Among those are environmental and social benefits, sustainable forest management as well as a renewable end product. Forest carbon projects not only generate carbon stocks and greenhouse gas (GHG) removals by sinks, they also reduce pressure on natural forests.

Perspectives sees the trees and the wood. We help you manage your forest carbon project by providing a wide range of high-quality forest carbon services for REDD (Reducing Emissions from Deforestation and Degradation) and AR (afforestation/reforestation) projects:

- Forest carbon capacity-building
- Risk assessment of forest carbon projects offered to you for t-CERs/l-CERs/VCSs purchase
- Feasibility assessment of your forest carbon project idea
- Project management of your forest carbon project from conception phase over PDD-development to issuance of t-CERs/l-CERs ERUs/ VCSs
- Development of sound and robust forest carbon methodologies

We offer you the outstanding technical, ecological, and economic competence and market knowledge that you need for your specific forest carbon project requirements. Matthias Krey, Managing Director Switzerland and Dr. Axel Michaelowa, member of the Registration and Issuance Team (RIT) of the CDM Executive Board, provides the perfect knowledge match for your forest carbon needs.

The views stated above represent a rather one-sided understanding of 'forest carbon' (tree plantations) which ignores the sequestration potential of grasslands as expressed below:

An Assessment of the Potential of Carbon Finance in Rangelands
by Timm Tennigkeit and Andreas Wilkes - ICRAF-SE Asia Working Paper No 68

"Globally there are more than 120 million pastoralists who are custodians of more than 5000 M ha of rangelands, which store up to 30% of the world's soil carbon. Many pastoralists are poor. Estimates suggest that improved rangeland management has a technical potential to sequester 1300-2000 MtCO2e worldwide up to 2030. This study examines the role that rangeland management can play in the sequestration of carbon, and assesses the feasibility of accessing carbon markets to support sustainable resource use and livelihood development among pastoralists."
The working paper can be accessed at http://www.chinaagroforestry.org or http://www.chinaagroforestry.org/CorpsData/icrafc3e35ca1-8beb-48ab-b7fa-82837dae4ca8/Product_en.aspx?GUID=fa4093cd-172f-4c25-8ec8-f1c09e154f56

In a related e-mail communication Andreas Wilkes commented: "Indeed, a potential 'mismatch' between the requirements of carbon finance institutions and the tenure and customary grazing arrangements of indigenous pastoralists, as well as the potential 'land grab' effect arising from the afforestation of rangelands, were highlighted in the report as being worthy of attention and continued monitoring by organizations such as Timberwatch and others."

How the FSC (Forest Stewardship Council) helps things along

A certified plantation clear cut in Mpumalanga, South Africa

It appears that FSC certification of the Idete plantation project was a pre-requisite for the Norwegian government to purchase CERs from GRL. GRL stated that the Idete project was not certified, but would be in due course as had the Mapanda and Uchindile (M&U) plantations. GRL's claim that Idete was only pre-assessed is confusing because it appears that Idete was certified together with Mapanda and Uchindile in 2008. Two certificates available on the SGS website bear the same date and number, but with different information. Despite the SGS public summary for M&U listing numerous non-compliances, the certificate was still issued. It would be interesting to know the full story! See below:

http://www.forestry.sgs.com/documents/7948-tz-grl-ma2007-10-ad36a-gm-psummary.pdf

Certificate Nr.	SGS-FM/COC-005066	Certificate Type:	Forest Management
Date of Issue	08 Aug 2008	Date of expiry:	07 Aug 2013
Forest Zone:	Tropical		
Total Certified Area	18 379 ha		
Scope:	Forest Management of plantations in the Iringa and Morogoro Regions of Tanzania– Mapanda & Uchindile Project Areas		

www.forestry.sgs.com/documents/sgs-forest-management-certification-report-tanzania-en-10.pdf

Certificate Nr.	SGS-FM/COC-005066	Certificate Type:	Forest Management
Date of Issue	08 Aug 2008	Date of expiry:	07 Aug 2013
Forest Zone:	Tropical		
Total Certified Area	30042ha		
Scope:	Forest Management of plantations in the Iringa and Morogoro Regions of Tanzania– Mapanda Uchindile and Idete Project Areas		

The FSC system is supposed to ensure that forests are managed sustainably, but the same principles are also applied when certifying tree plantations, which threaten real forests. In theory it responds to the social, cultural, and environmental and sustainability concerns about the timber industry in general. If applied correctly, the FSC system can protect forests, for example by helping to determine whether wood or wood-products originated in a 'FOREST' that is managed responsibly. But the FSC system cannot protect forests or grasslands that have been converted to tree plantations. Therefore, where forests or grasslands have been destroyed and replaced with alien tree plantations, as is usually the case in Africa, it is dishonest and inappropriate to apply FSC principles and criteria. Doing so undermines those principles.

Our experiences, and evidence from case studies in South Africa and Swaziland, is that the FSC principles are often applied in a selective manner, and/or misinterpreted to suit the needs of the client. Timberwatch holds the position that tree plantations are not forests. The misconception that plantations can be considered a 'type of forest' is the key problem with the application of FSC principles to tree monocultures planted on farmland or in natural habitat.

FSC certification promises high standards, yet it certifies some of the worst forests and tree plantations, which makes FSC certification virtually fraudulent. It assumes that merely aiming for "continuous improvement" in "forest management" should permit companies like GRL to use the FSC logo on products from destructive plantations. If at all, use of the FSC logo should only be allowed where the certificate has been awarded in recognition of a forest actually meeting or surpassing the relevant standards, and by the same token, certificates should be withdrawn when forests deteriorate and fail to meet the standards.

Tree plantations are part of an industrial wood production process. As such they should rather be certified under an appropriate ISO standard that recognises their environmental harm, and the dangerous working conditions associated with them. Many relevant issues are described in the following report:

Life as Commerce – Research and report on FSC Certification in South Africa
This study was undertaken by Timberwatch in 2007- 2008 as part of the Global Forest Coalition "Life as Commerce" campaign focusing on the negative effects of market-based conservation measures. See http://www.globalforestcoalition.org/paginas/view/30

The final report, ***Life as Commerce: Certification in South Africa***, released in November 2008, includes a case study on certified timber company Hans Merensky Holdings.
http://www.globalforestcoalition.org/img/userpics/File/LifeAsCommerce/LIFEASCOMMERCE-CERTIFICATION.pdf

For more on FSC certification of plantations see FSC-Watch – www.fsc-watch.org

WRM Plantations Campaign - www.wrm.**org**.uy/actors/**FSC**/index.html

FSC Forest Certification: Promises or Pretences?
http://www.etfrn.org/etfrn/newsletter/news51/Chapters/5.3Menne.pdf

Greenpeace report on FSC in Sweden:
www.greenpeace.org/raw/content/france/presse/dossiers-documents/underthecoverofforestcertification.pdf

FSC certification of the Uchindile and Mapanda plantations

Green Resources Ltd has repeatedly stated that the Idete plantations will be certified by FSC. Yet it now appears that the Idete plantation project has been certified by SGS retrospectively to November 2008 as part of a combined FM ('Forest Management') certificate. It needs to be clarified why this has been done and whether it is acceptable practice to backdate the certification of the Idete plantations.

1. **SCOPE OF CERTIFICATE**

The scope of the certificate falls within the Tropical Forest Zone and includes one Forest Management Unit (FMUs) as described below.

Description of FMUs:

Description	Ownership	Area (ha)	Longitude E/W	Latitude N/S
Uchindile	Green Resources Ltd	12,121	35°28'13"E	8°42'11"S
Mapanda	Green Resources Ltd	6,258	35°39'49"E to 35°44'52"E	8°24'30"S to 8°33'19"S
Idete	Green resources	11,663	35°11'28"E to 35°22'06"E	8°51'17"S to 9°16'16"S
TOTAL		30,042		

SGS uses a very confusing system of adding new information to old documents, so in this case a new/old public summary document has been released following an audit in February 2010. It now appears/does not appear that Idete is also/not certified and if you choose the first option, it means that the Idete plantation will receive certification together with Uchindile and Mapanda. The latest (we believe) version of the SGS public summary reads as follows (see yellow highlighted text):

http://www.forestry.sgs.com/documents/sgs-forest-management-certification-report-tanzania-en-10.pdf

2.5 Ownership and Use Rights

The company has already acquired a 99 year lease of land from the Government of Tanzania at Chogo and Mapanda villages Mapanda Ward, Kibengu Division, Mufindi District and at Uchindile village, Uchindile Ward Kilombero district. GRL has a title of ownership for this area for a period of 99 years from 1/4/2000.

SA2010 - Idete FMU has been added to the scope of the certificate

2.6 Other Land Uses

The surrounding land use is either forestry, subsistence agriculture and community villages.

2.7 Non-certified Forests

The organisation has three other forest project areas that are not within the current scope of the forest management assessment within Tanzania. These are Idete forest project, Masagati forest project and Kitete forest project. These forest project areas will in future be included in the scope for forest management but currently land acquisition process is being followed. These project areas are managed under the same management system as Uchindile and Mapanda.

The Mapanda and Idete EIA

To establish whether an environmental impact assessment (EIA) had been conducted prior to GRL planting trees at Idete, and to evaluate the EIA report was also an objective of this study. There was an earlier EIA by the Orgut Consultancy in 1998, but the more recent one prepared by ENATA (the Environmental Association of Tanzania) in late 2007 is applicable in this case, even though tree planting had already commenced by that time.

Not finding the Idete EIA on the GRL website, we requested it directly from the GRL's Sangito Sumari during a meeting in his office at Sao Hill in May 2010. He responded that there were neither print nor digital copies available at the GRL office, and we should request a copy from the NEMC (National Environment Management Council). The EIA report eventually came to us via a Tanzanian NGO that had received a copy from the Finnish Embassy in Dar es Salaam.

A confusing aspect of this EIA report is that it actually covers two of GRL's plantation projects. This is unusual as the two plantation areas in question, Mapanda and Idete, are separate, in fact quite far apart, with different communities and different lease agreements.

The Idete CDM PDD has summarized a part of the Idete portion of the EIA as follows:

> ***Potential negative impacts***
> The assessment of impacts for the proposed tree plantation projects of Idete has taken into consideration concerns from the stakeholders, local community on the potential loss of catchments and the disappearance of the local species, influx of migrant workers and burden on social services.
> The potential negative socio-economic impacts are moving of agricultural activities taking place on the area where reforestation will take place, change of land use, mushrooming of economic activities, conflicts over shared resources, impact on the communities by immigrants, increase of traffic accidents, and impact on cultural sites.
> The mitigation measures will cover the following: to offer employment first to people from the local communities, workers will be provided with appropriate safety gear as necessary, provision of training to works, to provide compensation to the few villagers who have moved their agricultural activities off the lands which will be planted as part of the reforestation project, assist in the enforcement of strict development control of unplanned settlements, to not plant near water sources, to improve road networks and bridges in the project area and protect the ritual ceremonies and cultural sites of local people. In addition, the project will have its own dispensary and transport for non-resident workers.
>
> The alternative or 'business as usual' option of not doing the project would mean leaving the areas as they are, which is not favoured given the government poverty alleviation policy and the envisaged benefits, which would not be realized without the project.
> Implementation of the project will indeed create employment for local communities, generate revenues for the government, and contribute numerous socio-economic and environmental benefits as well as technology transfer to the country and the local community."

Most of the EIA report reads like a plantation management manual, and it has neglected to identify the worst impacts of the plantations at Idete, including the destruction of grassland biodiversity, and the damaging impacts of plantation clear cutting (see page 61). It appears no environmental organisation stakeholders were consulted, and from the sparse information contained in the report, it would seem that the "detailed ecological study" that supposedly "identified threatened rare species of fauna and flora which require special conservation" may not have been carried out at all. In our opinion many of the assumptions made in the report are unsubstantiated, and the EIA therefore has little legitimacy. As a consequence its recommendation that the Idete plantation project be approved by the government of Tanzania should not be considered a valid or reliable conclusion.

Lessons from South Africa

Social and economic impacts of tree plantations on communities

The timber industry in South Africa has an overbearing presence that has led to the uncritical perception that it is a mainstay of the economy. Its contribution is, however, undermined by the numerous negative impacts it has on society and on the environment. Ironically, even as these negative consequences become apparent to the timber industry and society in general, more land is being converted to plantations of alien timber trees. This expansion happens without adequate regional land-use plans, but critics are dismissed as obstacles to development, and their evidence refuted without engagement. At the same time, government's weak licensing and monitoring regimes allow large-scale timber production to continue expanding.

A December 2005 study of selected plantation areas in KZN, South Africa by Timberwatch, commissioned by the World Rainforest Movement, endorses the argument that these large-scale tree plantations have a permanent destructive effect on the natural environment that they are imposed on, and this in turn has harsh negative impacts for communities, ***A Study of the Social and Economic Impacts of Industrial Tree Plantations in the KwaZulu - Natal Province of South Africa*** http://www.wrm.org.uy/countries/SouthAfrica/book.pdf

An obvious impact of tree plantations is the un-easy co-existence between the community and the 'sea' of timber plantations that reduces their access to land for crops and grazing, while there is also little direct advantage in terms of jobs and other social and economic benefits. Local communities feel an intense alienation from these timber plantations. The ongoing loss of the region's flora and fauna due to plantations has social, cultural and economic implications for society in general, and continuing encroachment of timber plantations has other negative effects including:

- The irreversible destruction of natural vegetation, principally grasslands, in areas planted to timber plantations;
- Associated losses of indigenous taxa (plant and animal species) that reduces local species availability;
- The irreversible change in scenic values and environmental quality, with associated impacts on tourism and outdoor recreation;
- Reduction in stream-flow, groundwater recharge and water quality, with associated impacts on indigenous aquatic fauna;
- Far-reaching effects on rural livelihoods, for instance: due to loss of grasslands it has become difficult for farmers to raise livestock for meat and milk for sale or own use.
- Grasses used for thatching roofs of homes and other buildings, and for making baskets are no longer freely available
- Reeds needed for making mats or cords used for roofing or trays have become scarce after plantations have caused small water-courses and wetlands to dry up
- Conversion of food farms to plantations has led to job losses and reduced local access to healthy food, leading to poverty and malnutrition.
- Workers from farms converted to plantations have lost their housing and now occupy squatter settlements and slums, scavenging for a living.
- Runaway fires in timber plantations have increasingly threatened the lives and livelihoods of local inhabitants.
- Plantations close to people's homes have increased community safety and security concerns – rape and theft is more frequent and thieves conceal loot in plantations.
- A lack of adequate land. and the close proximity of plantations, undermines the culture and identity of rural people.

In a nutshell, industrial timber plantations have very little to offer to nearby communities:
Socially – they are a harbinger of crime, a hideaway for thugs, a theatre of rape and violence;
Economically – they inflict poverty through the alienation of land and jobs;
Culturally – they disrupt the traditional way of life and undermine knowledge systems;
Health wise – they reduce and deny access to traditional medicinal plant products and
Politically – they pose an obstacle to community regeneration and development.

Issues for Consideration in Tanzania

From these lessons learnt in the southern African case studies, it is clear that any evaluation of large-scale industrial timber plantations and related activities should be viewed in the context of Africa's economic, political, social and cultural sustainability. The concerns arising from the proliferation of the plantation model transcends all these aspects of life and thus require a holistic approach that involves major changes to existing policies that are promoting plantation expansion into community land (often of high conservation value).

The plight of rural communities affected negatively by industrial tree plantations needs be addressed and solutions to their problems sought and implemented. Timberwatch proposes that no new industrial timber plantations are allowed to be planted on agricultural land or natural areas, and that the social and environmental impacts of existing ones are fully and adequately addressed.

General awareness of the impacts of tree plantations is at a relatively advanced stage in South Africa, where Timberwatch and sister NGO, GeaSphere (www.geasphere.co.za), that also work on tree plantation related issues in Moçambique and Swaziland are active. Tree plantations have been a problem in South Africa for more than a hundred years, and as a result there is now a substantial body of information available from research undertaken over many years.

However the focus of the studies undertaken in the past has been mostly on the water related impacts of tree plantations and their invasiveness, and it is only recently that their negative social and economic impacts have come under scrutiny. Timberwatch has also investigated the social and environmental impacts of the pulp and paper and wood processing sectors, which are major energy and water consumers, polluters of water bodies and the air, and sources of greenhouse gases. When this is considered in combination with the land, soil, water, biodiversity and human impacts of the tree plantations that produce the raw material, the negative effects of the industry as a whole have a far greater cumulative impact on people and the environment.

The negative effects of the timber industry plantations in South Africa are generally greater than might otherwise have been the case due to a suite of direct and indirect subsidies and incentives that have not been accessible for other land-uses, especially agriculture and rural communities that occupy land in communally owned tribal areas. Direct subsidies to the industry come in the form of free or very cheap water, cheap electricity, government loans and grants, cheap labour and tax-based export incentives. Indirect subsidies include the opportunity costs to other sectors such as food farming, increased water production costs to society in general; health care costs, especially those linked to poor air quality near pulp mills, and dangerous work in plantations. Increased road maintenance and higher accident rates due to overloaded trucks carrying timber and related products on public roads, also represent a major burden on the state.

Tanzania can learn from the South African experience and avoid making the same expensive mistakes that will drain its national economy and further impoverish affected communities.

Environmental impacts of tree plantations

Misuse of the term 'degraded grassland'

The word 'degraded' has been used repeatedly in documentation and publicity material pertaining to GRL's tree plantation projects in East Africa to describe the grasslands there. But is its use appropriate for the Uchindile, Mapanda and Idete grassland areas?

Degrade: Reduce (a land surface) by erosion or down-cutting (Collins English Dictionary)

Degraded: characterized by degeneration of structure or function
Source: www.merriam-webster.com/dictionary

Subclimax: a stage or community in an ecological succession immediately preceding a climax; especially one held in relative stability throughout by edaphic or biotic influences or by fire. Source: www.merriam-webster.com/dictionary

The information below, from the SGS public summary of the GRL FSC certification report provides a fairly accurate description of the condition of the vegetation being converted to plantations at Idete:

"The Southern Rift Montane Forest Grassland-Mosaic ecoregion is composed of several structurally and compositionally distinct vegetation communities, the most dominant of which is grassland (White 1983)."

"Several other vegetation types are set within the grassland matrix, the most prominent of which is Afromontane forest, although this constitutes less than 5 percent of the landscape, and is confined to fire-sheltered pockets, moist escarpments, valleys and watercourses (Chapman and White 1970; Kerfoot 1963-64a, Dowsett-Lemaire 1989)."

"High biodiversity is found throughout the different vegetation types which have different species richness each one representing a unique ecosystem. Blue swallows, a species of global concern and listed as endangered in East Africa are found on the FMU (Forest Management Unit)."

Source: ***FOREST MANAGEMENT CERTIFICATION REPORT: PUBLIC SUMMARY 24 May 2007 Doc. Number: AD 36-A-05*** - Forest Management of plantations in the Iringa and Morogoro Regions of Tanzania– Mapanda Uchindile and Idete Project Areas. Total Certified Area 30042ha. Certificate Nr. SGS-FM/COC-005066. Date of Issue 8 Aug 2008

It should however be added that the Blue Swallow (*Hirundo atrocaerulea*) can be seen as an indicator of healthy montane grassland. These birds are dependent on healthy grassland for feeding, and the destruction of their habitat by tree plantations will guarantee their local extinction. The conservation of a minor portion of the project site as a reserve for the Blue Swallow cannot prevent other negative impacts of plantations, in particular the effect of insecticides on insects that the swallows feed on. The problem is that too little is known.

For more information see: ***A survey of the Blue Swallow in the Southern Highlands***
http://tanzaniabirdatlas.com/A%20survey%20of%20the%20Blue%20Swallow%20in%20the%20Southern%20Highlands.pdf
Also see: www.bcb.uwc.ac.za/envfacts/facts/swallow.htm
and www.arkive.org/blue-swallow/hirundo-atrocaerulea/

From the above it should be clear that the meaning of 'degraded' as intended by GRL is not applicable to the Idete grasslands. Words like 'subclimax', 'recovering', or 'disturbed' could better describe those grasslands. Healthy grassland requires seasonal fire, and without periodic burning can deteriorate due to the build up of dead plant material that suppresses seed germination and leads to a moribund state (insufficient regrowth). This has happened at Idete as a result of GRL's efforts to exclude fire from the areas under their control since 2005.

Disturbance (as opposed to degradation) of grassland can result from grazing and shifting cultivation, and this can cause a localised reduction of biodiversity. However, temporarily disturbed grassland soon recovers and remains productive in both ecological and agricultural terms.

Our Idete field trips confirmed the view that Green Resources Ltd has misrepresented the general state of the grassland there. It must therefore be asked whether the company has misled the Tanzanian and Norwegian governments, local communities, the CDM EB, and potential buyers of carbon credits. If anything, planting invasive alien trees at Idete amounts to deliberately degrading the grassland, and it might therefore be correct to call GRL's tree plantations 'degraded grasslands' in keeping with their having 'degenerate structure and function' as per the Merriam-Webster definition.

Natural landscapes can be wholly or partially transformed, but land degradation is something different. It implies a degree of change that includes damage and transformation well beyond the kind of disturbance that has occurred at Idete.

Morning mist lifts off the grassland. Idete 2010

No fire, no biodiversity, no wild food

Impacts on water resources

Plantation trees grow rapidly, taking up nutrients and water from the soil. Through transpiration they may contribute to locally increased air moisture levels. This may in turn result in more precipitation, but not necessarily at the plantation site. Most plantation trees are evergreen (*Pinus* and *Eucalyptus spp*) and grow throughout the year, including during dry seasons and droughts.

As tree plantations age, hydrological conditions can be altered in a number of ways:

- Reduced soil moisture in the immediate vicinity (root-zone)
- Progressively incremental uptake of ground water via the tap-root
- Gradual increases in local temperatures due to reduced wind-chill
- Increased local temperatures due to decomposing grassland plants
- Increased local temperatures due to the albedo effect (pale-coloured grasses reflect sunlight while evergreen trees absorb light and may increase ambient temperatures). See http://woodlandstewardship.com/Albedo%20Effect.pdf

All of these factors can contribute to increased evapotranspiration and the loss of soil moisture. As trees get older, other factors such as rainfall interception come into play. Plantation trees with greater leaf surface areas, especially conifers, can hold rainwater caught by their foliage long enough for it to evaporate before it can reach the soil. The same applies to the litter layer which is usually sterile (e.g. pine needles) and takes many years to decompose. When water does reach the litter layer, it can be held in sponge-like fashion and also not reach the soil, thereby reducing aquifer recharge. Under these conditions the surface soil layer can develop a condition known as hydrophobicity, which results from a combination of factors including the emergence of certain soil fungi that can deposit water-resistant residues on soil particles. Hydrophobicity can be aggravated by the compaction caused by heavy equipment such as trucks, tractors and loaders used in plantations; and scorching by wildfires can temporarily increase the effect by burning soil organic material in the upper few centimetres.

Established plantation trees are able to tap directly into groundwater so that even during dry seasons or droughts they can grow continuously by consuming water that would otherwise be retained in the soil or flow into streams and rivers. This is especially significant during the dry season, as it prevents water from reaching downstream ecosystems and human communities.

The Idete grasslands fall into the Kilombero River catchment of the Great Ruaha River, and the extra water used by each plantation tree is lost to the local tributaries, thereby reducing water availability downstream for towns and cities and irrigation agriculture needs that the river normally supplies. One must ask whether the uncertain benefits of tree plantations such as those planted by GRL can justify their negative consequences to the Tanzanian national economy. If all costs of both the direct and indirect losses to other existing and potential economic activities, and informal rural economies, caused by tree plantations were to be considered, there would likely be a significant loss to the local economy. In effect the local economy is being distorted by the perverse impacts of subsidies at multiple levels paid by society and the state, and in the case of GRL, with substantial Norwegian financial aid.

WWF Tanzania is involved in a project to find ways to preserve water flow in the Ruaha River system. It is not clear if the impacts of tree plantations have been considered.

> **"Threats:** Growth in the human population, largely through migration to the area, has led to increased pressures on natural resources - land and water - from agriculture, livestock keeping, deforestation, fishing and other economic activities. The Great Ruaha River used to flow throughout the year, but since the mid 1990s it has become seasonal, with the amount of water in the river declining increasingly during the dry season leading to low flows or complete drying. The drying of the river has had major impacts on biodiversity and people's lives and livelihoods within the Great Ruaha catchment."
> Source:
> http://www.wwf.org.uk/what_we_do/safeguarding_the_natural_world/rivers_and_lakes/wwf_s_freshwater_projects_around_the_world/the_great_ruaha_tanzania/

The project has recognised the negative water impacts of eucalyptus trees. In a power point presentation on the project given in November 2005, WWF's Petro Masolwa proposed the following activities:

> - Community tree nurseries for indigenous tree spp
> - Replacement of Water Thirsty Eucalyptus tree spp with Indigenous tree spp.
>
> ftp://ftp.fao.org/agl/agll/kageradocs/08case_studies/tz_ruaha_iwrm.pdf

This is encouraging, because WWF International is promoting "new generation" tree plantations on the false assumption that better plantations will reduce pressure on forests.

> WWF's Project report concludes: "The new generation plantations concept can make a positive contribution to sustainable development, with respect to maintaining ecosystem integrity, conserving high conservation value forests and protecting stakeholder interests." http://assets.panda.org/downloads/newgenerationplantationsreport2009.pdf

This suggests that any vegetation other than so-called 'high conservation value forests' can be sacrificed for more tree plantations to ensure that the interests of the timber industry are protected. Deep-rooted plantation trees, eucalyptus in particular, consume water on a continuous basis that only stops after logging. On average their water consumption is higher than the rainfall where they grow, and they also 'steal' groundwater from adjacent areas. This effect has been measured in many parts of the world where grassland has been replaced by plantations, and in the longest lasting studies at Jonkershoek, South Africa, comparisons of planted and unplanted catchments found consistent water losses over 70 years. Other studies have revealed substantial losses in South Africa's KwaZulu-Natal and Mpumalanga provinces, and indications are that under such typical conditions, similar effects will be experienced in Tanzania.

> The issue of plantation water use in South Africa is the subject of a report by Liane Greeff: ***Thirsty alien trees, no water left and climate confusion – what version of sustainable development are we leaving our children?*** www.geasphere.co.za/downloadable_docs/ThirstyTreesNoWaterClimateConfusion.pdf

Tree plantation impacts on soil

Tree plantations impact substantially on soil fertility, and carbon storage capacity:

- Decomposing pine needles and eucalyptus leaf litter are known to reduce soil pH
- An acidic environment increases nutrient solubility but increases potential for leaching.
- This also destroys soil organisms that cannot tolerate abnormal acidity.
- After the plantation canopy closes, grassland dies and groundcover is lost.
- Detritus dries/oxidises or decays/decomposes releasing CO_2 and methane.
- Altered soil pH creates conditions where alien invasive plants thrive – often spreading out of plantations as with bramble (*Rubus sp.*) and bugweed (*Solanum sp.*).

All of the above contribute to loss of soil carbon through biomass decomposition or soil erosion resulting from soil chemical changes as well as sheet erosion and scouring. The worst impacts on soils are caused by mechanical disturbance when plantations are clear-cut. Despite claims that good plantation management practices can help avoid soil losses, there is little evidence that this happens, thanks to the virtually unavoidable destructive impacts of heavy industrial equipment used to extract logs from plantations. The impacts of clear-cutting and log extraction are worsened by bad plantation design and road construction methods.
Other plantation-related causes of soil erosion are

- Using herbicides to destroy grassland vegetation that 'competes' with plantation trees
- Burned or chemically established fire belts (especially on steep slopes)
- Displacement of community cropping and livestock grazing onto marginal areas
- Shading induced vegetation loss in grassland or forest areas next to plantations
- Increased silt load in water courses from storm run-off after clear cuts

> In Uruguay a study of the effects of eucalyptus plantations showed severe impacts on soils and soil carbon. See**: *Eucalyptus plantations degrade soils and release carbon*** http://www.wrm.org.uy/bulletin/136/Uruguay.html

The South African plantation shown below is typical of what are called “responsibly managed forests”. The carbon in the soil and natural grassland vegetation that covered this site prior to plantation activities would have been far greater than what now remains in the form of dead roots, charred tree stumps, and some rejected logs. The logs that have been removed and taken to the pulp mill will be converted to pulp and low grade packaging paper which will all end up in landfills or flushed down toilets and into rivers and oceans around the globe. This is also an energy-intensive process that consumes vast amounts of coal and fuel-oil, contributing GHG emissions over and above the carbon lost from the plantation site and released from the products as they rot in garbage dumps or dissipate into water bodies.

The ecological cost of throw-away packaging, daily newspapers, disposable nappies and toilet tissue, multiplied by millions, and now also to provide power station fuel (FSC certified Sappi plantation near Ngodwana pulp mill, Mpumalanga, South Africa)

The monetary cost of restoring the site shown in the photograph above to its condition prior to the establishment of tree plantations would be difficult to quantify, and it is unlikely such a task has been undertaken before. Had the government of Norway considered the possibility of a future claim for social and ecological damages from the governments of Tanzania and others suffering losses due to tree plantations such as those of Green Resources Ltd, would it have supported GRL’s projects in Africa?

"Forests only contribute to net carbon emissions when biomass is harvested faster than it grows back. A sustainably managed forest is considered to be a net carbon sequester despite the removal of biomass during harvesting. At Sappi, logging is balanced with re-growth and twigs and stumps are left behind, leading to continuous enrichment of the soil."

http://www.na.sappi.com/c/document_library/get_file?uuid=fc0d70e2-0d75-4214-b76b-27ab1ea64154&groupId=10165

Fire and tree plantations in grasslands

Seasonal fire is a natural occurrence in African grasslands, where dead above-ground biomass needs to be burned in order to allow new grass growth to emerge and non-grasses to resprout or geminate after rains. Certain species depend on fire for their renewal, and even survival, and are stimulated by fire or exposure to sunlight when the layer of dead plant material is gone. Without fire, it can build up into a dense mulch 'carpet' that suffocates resprouters and seedlings, leading to the grassland deteriorating into a moribund state, as can be seen in areas where Green Resources Ltd has prevented fire in order to protect its trees.

This moribund condition leads to further deterioration where woody shrubs and small trees that would otherwise have been burned and kept under control start to colonise and eventually to dominate the grassland. Prolonged absence of fire can result in dramatic change, from climax grassland to shrub-land or even thicket. However clearing fire-breaks, building plantation roads and 'pitting' grassland to plant alien trees is completely unnatural, and can cause considerable erosion and carbon emissions from both above and below-ground biomass.

When plantation fires inevitably occur after a few years, the build-up of dead tree material (usually termed 'fuel load'), combined with the desiccating effects of fast-growing young plantation trees and the aerosols released by 'cooking' trees, often leads to extremely hot fires that scorch the earth, killing all life in and above the soil.

Biodiversity loss

When grasslands are destroyed by tree plantations there is an immediate impact on the plants mainly due to the pitting method of tree-planting used, and the later use of herbicides to eliminate natural grasses and herbs that are perceived as a threat to the survival of plantation trees. In addition, areas converted to roads, offices, nurseries, loading areas and fire-breaks also contribute to this direct destruction.

Once established, tree plantations block the light needed by grassland species, and as leaf litter and plantation prunings accumulate, surviving plants suffocate or fall victim to acidification and dehydration. This annihilates the original vegetation within the footprint of the plantation and those associated with roads, fire breaks, nurseries and service areas are also wiped out.

A wildfire waiting to happen in an FSC certified pine plantation. Jonkershoek, South Africa

FSC certified ex-grassland, showing scorched soil. Piggs Peak, Swaziland

GRL nursery at Idete sited in a wetland (Picture source: Jacovelli report, July 2007)

Alien pine seedlings invade an open area near to a plantation at Sao Hill

The SGS public summary states: "Permanent and "Flying" nurseries at Uchindile and the "Flying" nursery at Mapanda are all established in sensitive wetland areas, the water flow had been channelled and the natural vegetation had been removed from the site. Stream-crossings at Uchindile and Mapanda through the riparian forest on either side had been channelled with potential negative consequences."

Although the nurseries have supposedly been moved and the damaged areas 'restored' it is doubtful that the wetlands will recover fully. Excavating wetland soils for the tree nursery operations can penetrate critical peat layers or organic soils, and impair wetland functionality.

The hundreds of plant species that are destroyed in the process of converting grassland to tree plantations take with them an even greater range of mammals, birds, reptiles, amphibians, insects and other forms of life. At Idete this spectrum of creatures has simply been written off as non-existent thanks to GRL's false "degraded grassland" mantra.

'kitembwetembwe' *Aloe nuttii* flowering in Idete grassland

Spermacoce dibrachiata in Idete grassland

"Aloe Nuttii is used medicinally in Tanzania. The leaf sap is rubbed on the skin to treat ringworm. A decoction of the roots is drunk to cure kidney problems and as an aphrodisiac. A decoction of the leaves is drunk to cure diarrhoea. Mature flowers are boiled and eaten as a vegetable in Tanzania. *Aloe nuttii* is grown as a garden ornamental in the tropics and subtropics, and as a pot plant."
Source: http://www.prota4u.org/protav8.asp?g=pe&p=Aloe+nuttii+Baker

Another side-effect of tree plantation's heavy water-consumption is the dehydration of adjacent and downstream areas, with the inevitable outcome of more frequent wildfires. Apart from burning the plantation trees, wildfires also damage soils and cause further loss of biodiversity. Under normal circumstances forest edges can withstand the effects of grassland fires. However, the great heat generated by plantation wildfires causes the air to rise rapidly, creating wind that feeds the flames further. Where plantations have been established close to forests, the wind, heat and burning plantation debris can cause the fire to spread into forest that would otherwise not have been affected by a normal grassland burn. Plantation wildfires must be viewed as one of the harmful consequences of disrupting the natural fire cycle in grasslands by converting them into tree plantations.

Grasslands are 'fire-climax' ecosystems that evolved under the influence of lightning or human-induced fires. Fire clears old plant material and helps return nutrients to the soil, stimulating growth to provide grazing for livestock. This allows grasses and non-grasses to flower and seed, starting a new cycle of grassland life. Too frequent burning can lead to soil erosion and loss of biodiversity when overstocking has damaged grassland.

Aquatic organisms downstream of plantations are impacted by chemical usage and erosion. Water-bodies are also polluted with organic plantation waste which absorbs oxygen, creating anaerobic conditions not conducive to natural species in the aquatic environment. Together with nutrients from fertilisers this can cause outbreaks of algae and invasive water plants. Increased turbidity from suspended particles affects aquatic fauna and it has been shown that local impacts after logging can wipe out aquatic life within affected sections of streams or wetlands. Further harm to biodiversity can result from increased sedimentation in wetlands.

A clear cut in the Uchindile area with vehicle tracks down slopes which increase soil compaction, surface erosion, and sedimentation in adjacent wetlands and streams

Invasion by plantation trees

In view of GRL's apparently limited plantation management abilities there is a high probability of their alien invasive trees spreading into the landscape. At the present time the plantation trees at Idete are immature, but once they start producing seed there is likely to be a major problem. GRL claims that the tree species being planted at Idete are not invasive, or will be 'properly managed' and will therefore not become a problem. However this is wishful thinking. Already evident in the Idete area are volunteer pine seedlings, and areas around the Sao Hill plantations are heavily infested with pine and wattle (*Acacia* sp). The invasive tendencies of plantation trees in Tanzania have been well documented.

A 2002 report ***SOCIO-ECONOMIC ROOT CAUSES OF THE LOSS OF BIODIVERSITY IN THE RUAHA CATCHMENT AREA*** by H. Sosovele and J.J. Ngwale for WWF - Tanzania stated: "According to local views and perceptions in Makete District, tree plantations (especially various species of Cyprus [pine? Ed.] and eucalyptus) are associated with the environmental degradation that is taking place in this areas in that such trees, prevent undergrowth of other species and that due to excessive tree felling for timber, some of the areas have been cleared and exposed to erosion agents." http://assets.panda.org/downloads/rcareportruaha.pdf

Another report, titled: ***Southern Rift montane forest-grassland mosaic,*** prepared by Lyndon D. Estes states: "Alien organisms pose a threat to the ecoregion, chiefly in the form of exotic timber trees of the genera *Pinus* and *Eucalyptus,* which have been used in afforesting montane grasslands (McKone and Walzem 1994). *Pinus* is reported as being invasive in parts of the Southern Highlands (McKone and Walzem 1994)." http://www.worldwildlife.org/wildworld/profiles/terrestrial/at/at1015_full.html

Shading out of natural vegetation

As plantations grow taller, the shade cast along their edges extends further and for longer. When this happens it causes sun-loving grassland species to die out locally, and increases opportunities for invasive plant species to become established. The reduced exposure to direct sunlight causes affected areas to become cooler, and when it rains, they take longer to dry out.

The worst impacts are felt when streams and wetlands have trees planted on both sides with a nominal distance left unplanted as a buffer-zone. The stream or wetland can be deprived of both morning and afternoon sunlight as it becomes shaded over, leading to the disruption of ecological processes within the immediate area, and through the substitution of the natural vegetation by invasive alien weeds such as *Dahlia imperialis* (Tree Dahlia) that has proliferated in pine plantations at Sao Hill.

Dahlia imperialis in Sao Hill pine plantation

Feral pine trees invade Sao Hill wetland

Poor plantation practice

Green Resources Ltd contracted a consultant based in Uganda to undertake an assessment of GRL's plantations in Tanzania. Paul Jacovelli visited GRL plantation areas in July 2007 and identified numerous examples of poor plantation management and sivicultural practice. Specific issues highlighted in the report include:

- Emphasis on planting large areas is misplaced
- Poor species selection and poor quality plants
- Poor management of plantings with a high failure rate
- Inadequate training of plantation workers
- Inadequate fire protection measures
- Inadequate management and supervision

While not paying much attention to the relevant environmental issues, the Jacovelli report does identify problems within GR's operations, all of which impact negatively on the local ecosystem.

Paul Jacovelli - ***Report on a Visit to Green Resources Limited's Forest Plantation Projects in the Southern Highlands of Tanzania***
http://www.greenresources.no/Portals/1/Articales/GRLJacovelliReportJuly2007.pdf

> "not using the best seed sources and especially poor weeding, GRL's plantations are yielding well below their potential"
> "GRL need to make considerable efforts as soon as possible to improve their own internal standards, especially with regard to improving the quality of establishment."
> "At present, management is obsessed with planting targets at the expense of the quality of the planting"
> ".. without a radical change, the plantation yields - and thus the eventual profit – will not improve."
> "GRL... ...currently have virtually no staff with significant commercial plantation experience."

The Jacovelli report aims to improve GRL's management, which might marginally reduce plantation impacts, but its recommendations will have only a limited effect in terms of improving the overall situation. If the quality of plantation management standards in South Africa and Swaziland can be considered superior to those in Tanzania, then at the very best there will be a ruined landscape at Idete when the GRL 99-year land leases end early in the 22nd century.

Mr Jacovelli is clearly an expert in improving plantation productivity, but his report fails to deal with the negative environmental impacts of the GRL tree plantation projects. A really obvious problem, such as nurseries being established in a wetland zone and topsoil being mined (presumably from the same wetland) did not seem to strike him as being problematic.

Taken together with GRL's repeatedly stating that it is "Africa's leading forestation company", the information provided in the Jacovelli report, together with the SGS certification assessment public summary for the Uchindile & Mapanda (and now Idete) plantations, as well as the Point Carbon and Perspectives Due Diligence report, have helped to confirm what we had initially suspected would be the case.

From the numerous problems exposed it should be concluded that about the only real achievement of Green Resources Ltd in the Southern Highlands of Tanzania, has been to spread alien invasive trees over more than 30,000 hectares and counting of precious African grasslands.

Socio-economic and cultural impacts

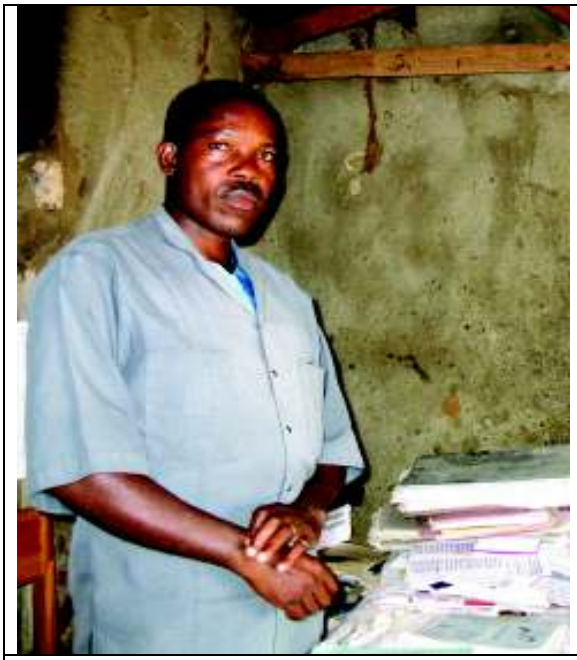
This section covers a number of themes: GRL's promises, the extent of its project, community impacts (social and economic), environmental impacts, and the impacts of the nearby Mufindi Paper Mill (MPM). It appraises Tanzanian government and NGO interest and capacity, and gives analysis and suggestions for further engagement.

Green Resources Ltd's activities

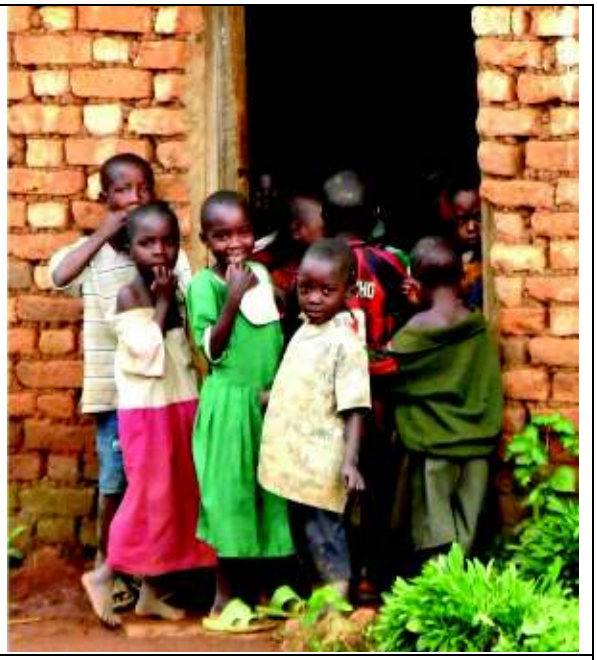
The CDM carbon credit aspect of GRL's projects in Tanzania is a small part of an array of tree plantation based activities and products. From discussions with GRL officials it appears there is no consensus on whether CDM carbon credits are the company's main interest in Tanzania, or what percentage of its overall activities carbon offsetting comprises. GRL owns and operates the Sao Hill saw mill where it produces transmission poles, planks, and various joinery items. The mill was previously owned by the Tanzanian government. According to the GRL Company Report of 2008/2009, the company is Africa's "leading forestation company" which is "growing trees to generate carbon credits and bioenergy and to manufacture wood products" priding itself in the claim that it has "probably planted more new trees than any other private company in Africa during the past ten years; a record 4 200 ha of new forest was planted in 2008". The report also indicates that the company "holds more than 200 000 ha of land for future planting and conservation and started the first harvest from its own forest in 2008".

Local community Impacts

Idete and Makungu villagers do not have the level of sophistication needed to negotiate with international land speculators, although Tanzanian land ownership systems do entitle local communities to make decisions relating to land transactions with business entities. However, foreign investment in Tanzania is organised through the Tanzania Investment Corporation (TIC) a government agency. The context in which the land impacts of the project should be considered is explained in the next section.



Idete village Executive Officer, Emanuel Mwilafi



Curious Idete children at their classroom door

Land administration and access to land in Tanzania

It is important to address the land question in relation to GRL's plantation projects (and other so-called development activities that require massive land transfers) for a number of reasons. Companies like Green Resources Ltd often claim that based on a cost-benefit analysis, their projects will directly benefit the recipient country as well as the affected local community.

Timber and agrofuel investors usually claim that the land they are hoping to acquire is marginal and was hitherto under-utilised; that watertight consultation processes were carried out, and that most community members accepted the project without reservation. They also claim that the project under-went independent environmental assessment which concluded beyond doubt that there would be minimal environmental impacts and that appropriate measures would be taken during the project to mitigate any such circumstantial negative impacts. For these reasons, one of the key questions asked during the fieldwork was around the land question. It was important to know from the community how they had participated in the decision to award GRL the lease on their land.

We also enquired about the level to which they understood and received consistent clarity on issues around the land leasing contract. These questions and our assessment of the claims made by investors (Green Resources Ltd) about these extensive land investments are addressed below. It should be emphasised that the land equation should form the basis upon which these investment programmes are either accepted or vetoed, taking into consideration the government of Tanzania's own admission that "Land is the engine for economic growth and population survival." 80% of Tanzania's GDP comes from agriculture, therefore any mismanagement and careless transfer of land could have severe consequences for people. Because the land is not owned as such but rather held in trust for future generations, there is an ethical concern about the ability of people in the present generation to commit land to a particular use for a period of time longer than they will be alive. On this basis, the 99 year leases offered to foreign investment companies are morally and ethically indefensible.

The UN Food and Agriculture Organisation (FAO), the International Fund for Agricultural Development (IFAD) and the International Institute for Environment and Development (IIED) published a report on agricultural investment and international land deals in Africa (Cotula, Vermeulen, Leonard and Keeley, 2009) posing the question, *Land grab or development opportunity?* In justifying the need to study the renewed rush for African land in the first decade of this 21st millenium, Cotula, et al (2009: 3) suggest that it is "rightly a hot issue because land is so central to identity, livelihoods and food security." The research provides significant background to this study as it contextualises "key trends and drivers in land acquisitions".

Some Tanzanian land-law history

In pre-colonial Tanzania, as in many parts of the continent, land belonged to the community as a whole. Under the 1923 Land Ordinance, the colonial administration transferred custodianship of annexed land to the Governor, who in turn granted individuals Right of Occupancy. African land remained under customary law, and this resulted in a dual land administration regime with both customary and freehold land. The Land Ordinance of 1923 only governed registered land that could be leased for periods of 33, 66 up to 99 years; while customary land had no title.

Following independence, Tanzania's political economic space has changed radically, with major changes in land administration and management. The Nyarubanja enfranchisement Act of 1968 prohibited certain traditional land systems. The villagisation programme of President Nyerere's acclaimed socialisation programme of 1971-1976 introduced planned villages that affected the clan system. The Village Act No. 22 of 1992 legalised ownership of

land granted to people during the implementation of the villagisation programme. This Act also led to a change of the mode of land ownership from a clan based system to an individual based system. One of the effects of this shift in land administration was the introduction of land markets, especially where land is suitable for agriculture.

After a Land Commission was appointed in 1991, a report published in 1993 proclaimed on land policy in Tanzania. Village Acts No. 4 and 5 consequently deal with the different typologies of land systems in Tanzania. Act No. 4 with Land other than village land while Act No. 5 concerns itself with Village Land. A study of these Acts reveals the complicated systems and procedures to be pursued for the transfer of such land. In terms of this land policy, Tanzanian land is public land vested in the President as trustee for all citizens. The recommendations were for all Tanzanian men and women above 18 years, to have rights to acquire and own land, while protecting and recognising existing rights, including customary titles. One requirement of this policy that is often cited by investors cajoling the Tanzanian government and local administrators for land is that "land should be used productively." The policy also requires that the amount of land to be granted any person or company be regulated. However, as discussed below, some companies and individuals find ways of acquiring more land than permitted in terms of Tanzanian land policy, which points to the lack of capacity to police and manage such regulation. An institution or agency of government had to be set up to facilitate the operation of a market in land as well as to provide an efficient, effective, economical and transparent system of land administration.

Land as a livelihood anchor

Tanzania is largely a rural economy and land is central to the livelihoods of the majority of the people. People must own, access and control land for them to derive livelihood benefits. As observed by Elizabeth Maro Minde (2006) in a paper presented at the XVI International Aids Conference in Toronto, "The majority of Tanzanians live in rural areas and the industrial base is very poor. Because of the heavy reliance on land by many people, issues of land are sensitive." Considerations for land ownership, control and access in Tanzania, as well as its possible transfer to business concerns, either local or international, must be made against social, economic and cultural factors that link back to livelihood systems.

Green Resources is clear about the land system and how the land market functions in Tanzania. Responding to suggestions that there are potential losses to communities through these kinds of projects, GRL reiterated how the land system in Tanzania operates:

> "- Land rights and community consent: Mainland Tanzania is divided into 22 regions. Each region is administered under districts, responsible for developing a District Investment Profile, which is made available to investors. The District is in charge of managing the Wards and Villages within its district boundaries. All land is owned by the villages, divided into two main categories: 'general village land' which is land that can be transferred for investment and 'village land' for the communities own use. Each village is required by the government to have its own Land Use Plan to ensure that all activities are allocated enough area and to ensure security of land tenure."
> (GRL response to TW preliminary report)

The authors of the GRL response also demonstrated their knowledge of the fact that:

> "General Village Land can be given out for investment but should not be more than 33% of the total village land area. This is the land that the IFP (Idete plantation project) is based on." (GRL response to TW preliminary report)

Also significant is that Tanzanian human and domestic animal populations have increased. This has reduced the average unit size of available land, as well as its quality. In a country where the majority of poorly resourced communities are still using traditional means of producing food, land quality and availability can be undermined. In the Southern Highlands, fragile grasslands can become stressed by over-grazing and activities such as harvesting food and non-timber products, as well as from ploughing. Traditional animal and crop husbandry can only maintain land quality if there is enough land to allow for resting, as when land is left fallow it recuperates and regains its ability to meet people's livelihood needs. However those who do not understand this agricultural practice can easily register this land as being idle and under-utilised and therefore approach communities for its acquisition. This clash of cultures and poor understanding of rural land management systems has led to communities being put under pressure by ill-informed land speculators.

Clearly GRL did not consider the negative impacts of expanding tree plantations into what they characterise as 'village land', which is not available for the market but for "community own use". The GRL General Manager suggested that the company is going all out to encourage individual community members to grow woodlots, which GRL would purchase at maturity for timber or carbon credits. The cumulative impacts of villagers each planting between a half and six hectares of timber woodlots in response to this demand will have a negative effect on the availability of land for food production and other community livelihoods to a form of land theft, as such land becomes practically unavailable. This should be contextualised in terms of the cost of de-stumping and restoring land after plantations, which is beyond the means of local communities.

"The Uchindile Project area population (Uchindile and Kitete) is sparse and stable (roughly 1500 people were counted in the 1994 EIA, compared to 1,274 in the 2006 Village Executive Committee count) due to out-migration as young people seek new cropland."

"Uchindile's population at the time of government census (2002) was approximately 2000 people, which includes what the government defines as "rural" Uchindile populations (including Lugala and Kitete)"

http://nomogaia.org/HRIA/Entries/2009/10/29_Green_Resources_-_HRIA_Sample_files/Green%20Resources%20HRIA.pdf

From the above it is evident that Green Resources' plantation activities have contributed to the displacement of at least 226 mostly young people from the Uchindile/Kitete communities. This pattern is likely to follow at Idete, and to continue at Uchindile as more village land is excised from community use by GRL and MPM. The young people seeking new cropland will be forced to take up land in less productive drier and steeper agriculturally marginal areas where natural forest and/or woodland will be cleared to make space for crops. This deforestation and/or soil disturbance will constitute further carbon leakage from the Uchindile and Idete tree plantation projects that has been overlooked or ignored in both project design documents. Studies in South Africa have documented similar displacements by tree plantations, with young people migrating to towns and cities to live under squalid conditions in informal 'squatter' settlements.

See the report : ***A Study of the Social and Economic Impacts of Industrial Tree Plantations in the KwaZulu - Natal Province of South Africa***
http://www.wrm.org.uy/countries/SouthAfrica/book.html

The Uchindile human rights impact assessment (HRIA) was requested by Green Resources Ltd, perhaps thinking it would show the company up in a more positive light than it eventually did. The Uchindile plantation has recently been damaged by another fire allegedly started by disenchanted plantation workers.

Nomogaia - Human Rights Impact Assessment monitoring report – GRL Uchindile

"10.3. Social License to Operate
Social License to Operate is not the same as respect for Human Rights. One is a matter of satisfying expectations; the other is a matter of not violating human dignity. However, in some cases the two overlap. Green Resources is not responsible for fulfilling the local Right to Education or Right to Health, but if the company promises to fill the void that government has left, it creates a rights vacuum.

Broken, deferred, and disregarded promises beget bitterness, and bitter communities become inhospitable hosts. There is little risk that communities surrounding GRL plantations will become violent, but there is significant risk that communities will feel entitled to take without asking when they are not being given what is promised. So far GRL has only had nonviolent confrontations with thieves. This cannot be assured in the future, if relations continue to be strained, as they have become in Uchindile. Company Community Development staff have suggested that relations with Uchindile are now stable and friendly.

This did not prove to be the case during assessment – bitterness remains strong while long-time labours retain their "temporary" status and promises of school and health facilities remain unfulfilled. The September 2009 arson validates this premise.

In recognition of this, the Company made significant changes to management and policy in 2010, eliminating several labor rights violations that were present in previous years. Changes include increasing wage rates, providing promised lunches to all workers, improving transportation to site, and increasing the flexibility of work schedules.

These changes have vastly improved the Project's social license to operate, but they have not remedied all human rights violations, and they are likely to result in renewed tensions with workers in the coming months and years. Nearly all of the Project's workers remain temporary" hires, denied benefits, sick pay and maternity leave. Workers are paid for the days they work – a sick or pregnant worker loses all income for the days missed. Job insecurity remains a major problem. Collective bargaining is not effective for a workforce that can be laid off at any time – and the union's recent reinstatement shows little sign of becoming a force for change.

Furthermore, promotion to "permanent employee" is not dictated by an established policy, leading many workers to believe it is arbitrary or corrupt. Laborers do not know how long they must work as "temporary" hires before they can enjoy the small benefits of permanent employment, including a steady income. Some have been working for 10 years as "temporary" hires. This holds true for watchmen, who have steady hours and designated schedules."
Source: http://nomogaia.org/HRIA/Entries/2009/10/29_Green_Resources_-_HRIA_Sample_files/Green%20Resources%20HRIA%20and%20Monitoring.pdf

The 2009 draft report:
http://nomogaia.org/HRIA/Entries/2009/10/29_Green_Resources_-_HRIA_Sample_files/Green%20Resources%20HRIA.pdf

GRL's agreement with the Idete community

The document below was shown to us by the Idete Village Executive Officer, Emanuel Mwilafi. The Green Resources' 'carbon credit agreement' with Idete village gives the impression that the project is purely to benefit the Idete community and Tanzania as a whole. It does not mention what GRL will get out of it.

GREEN RESOURCES LTD

AGREEMENT ON PROJECT PARTICIPATION IN IDETE REFORESTATION PROJECT

BETWEEN

GREEN RESOURCES LIMITED, GREEN RESOURCES AS OF NORWAY

AND

IDETE VILLAGE OF MUFINDI DISTRICT IRINGA REGION

In support of Tanzania development goals enshrined in the national strategy for growth and poverty reduction (MKUKUTA), the property and business formalization programme (MKURABITA), the millennium development goals and other government development policies, Green Resources Limited undertakes to partner with Idete Village to develop a CDM project within the Idete Forest Project on the following terms and conditions:

1. Green Resources Ltd has developed a carbon credit project based on Clean Development Mechanism methodology (CDM) within the UNFCCC frame work. The project located within the Idete Forest Project aims at reducing threats due to climate change by establishing a sustainably managed forest that will capture CO2 from the atmosphere.
2. The carbon credits will be generated from the 11,000 ha Idete Reforestation Project located in Kiyowela and Makungu Wards, of which 6,495 ha of the land is plantable.
3. While Idete Village will be a participant in the project, Green Resources Limited will take full responsibility for the development, communication and all costs related to the carbon credit project.
4. Idete Village as a participant in the project will benefit from capacity building in the establishment of farm forests and towards that end will receive technical support and seedlings for planting on individually owned plots.

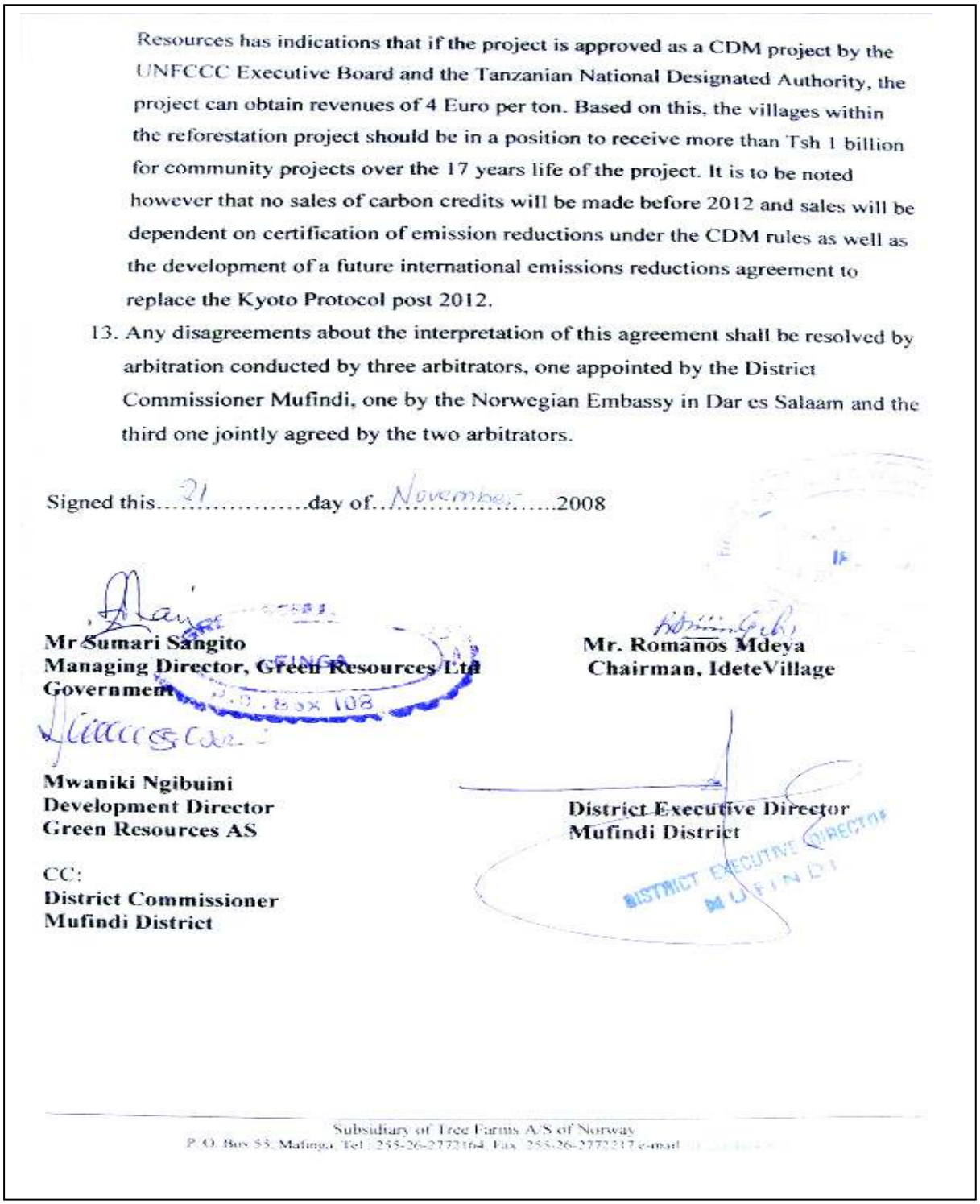
Subsidiary of Tree Farms A/S of Norway
P. O. Box 55, Mafinga. Tel: 255-26-2772164, Fax: 255-26-2772217 e-mail:

This agreement creates the expectation that the community will benefit from infrastructural improvements (Clauses 6-8). However no assurance is given by GRL as to when these will materialise, if at all, although community land and water resources have already been taken by the company. Responsibility for basic services has been transferred from the Tanzanian government to GRL, putting the company in a position to easily manipulate the community.

5. The village will receive 10% of the gross revenues generated from sale of carbon credits from the project less withholding tax and any other fees and levies that may be imposed by the government. The project will also create employment opportunities for the village.
6. The carbon revenues due to Idete village shall in particular benefit the village but also other villages located around the project. The funds shall be used for community projects and social infrastructure such as school buildings, dispensaries, village offices, roads, bridges and provision of clean drinking water.
7. The village government shall provide to the management of Green Resources Ltd a list of prioritized development projects to be undertaken using revenues from sale of carbon credits. Green Resources Ltd shall distribute funds directly to the project suppliers and contractors within the approved budgets and present audited accounts at the completion of each project.
8. Separately, Green Resources AS undertakes to re-invest all the revenues generated from sale of carbon credits within Tanzania and in particular the region around the project.
9. In return, Idete village shall be expected to support the CDM project in all reasonable ways including protection of the forest and especially fighting grass and forest fires that may threaten the project and obtaining the required regulatory approvals of the project.
10. There shall be quarterly meetings between Idete Reforestation Project and Idete Village Government to discuss important issues related to the development of the project.
11. Green Resources Ltd shall provide an annual report to the village, ward and district representatives covering project development and carbon credit revenues for the year. This report will be presented within three months of the close of every calendar year. The village government shall in the same meeting present their prioritized list of activities and the funds shall be distributed over the following nine months.
12. It is estimated that 161,000 tons of carbon credits will be generated by 2012 and that two million tons of carbon credits will be generated by 2025. Green

Subsidiary of Tree Farms A/S of Norway
P. O. Box 55, Mafinga. Tel: 255-26-2772164, Fax: 255-26-2772217, e-mail: [illegible]

Readers should draw their own conclusions as to whether this agreement is honest or fair, and likely or not to ensure an equitable outcome for the Idete community. The estimated "two million tons of carbon credits" by 2025 at an anticipated 4 Euro per ton cannot be taken as fact, and when translated to local benefits worth 1 billion Tanzanian shillings it sounds even more impressive, yet this amount of money could be quite meaningless in 2025.



Resources has indications that if the project is approved as a CDM project by the UNFCCC Executive Board and the Tanzanian National Designated Authority, the project can obtain revenues of 4 Euro per ton. Based on this, the villages within the reforestation project should be in a position to receive more than Tsh 1 billion for community projects over the 17 years life of the project. It is to be noted however that no sales of carbon credits will be made before 2012 and sales will be dependent on certification of emission reductions under the CDM rules as well as the development of a future international emissions reductions agreement to replace the Kyoto Protocol post 2012.

13. Any disagreements about the interpretation of this agreement shall be resolved by arbitration conducted by three arbitrators, one appointed by the District Commissioner Mufindi, one by the Norwegian Embassy in Dar es Salaam and the third one jointly agreed by the two arbitrators.

Signed this 21 day of November 2008

Mr Sumari Sangito
Managing Director, Green Resources Ltd
Government

Mr. Romanos Mdeya
Chairman, IdeteVillage

Mwaniki Ngibuini
Development Director
Green Resources AS

District Executive Director
Mufindi District

CC:
District Commissioner
Mufindi District

Subsidiary of Tree Farms A/S of Norway
P.O. Box 55, Mafinga. Tel: 255-26-2772164. Fax: 255-26-2772217 e-mail:

This 'agreement' exemplifies the attitude of Green Resources towards the Idete community. It is a one sided arrangement that rests on circumstances over which the local people have no control, yet they are obliged to render free services to the project in terms of Clause 9.

The ignorance demonstrated by GRL's biased reaction towards, and lack of comprehension of the concerns raised in the Timberwatch preliminary report are amply demonstrated by GRL's indignant response to our misgivings regarding their claimed ability to benefit the community. Likewise to concerns expressed regarding the negative impacts of tree plantations on the land, and the consequent losses to both present and future generations of the local community:

> "- Land tenure: The Idete project land has been leased from the surrounding communities following a fully informed, free and consentual consultation process for a period of 99 years. The objective of Green Resources is to manage the previously degraded land, and restore it to forest cover sustainably over the long term through sustainable reforestation and harvesting, providing a vital supply of timber for the region. The project will bring employment and increased infrastructure, schools and health clinics in the area, in line with the priorities of the local communities. With the longevity of the project in mind it seems unsubstantiated and inappropriate to suggest that the project is a short-term project. Forests are a long-term store of carbon. They covered vast area of the Earth's surface for millennia and contain 60% of the carbon stored n terrestrial ecosystems. Their duration exceeds that of any industrial facility." (GRL response to TW preliminary report)

GRL considers the consultation process "free and 'consentual' [sic], but the authors of this report believe this claim can be refuted. GRL also states that the land is "previously degraded", for which claim there is no independent scientific basis or evidence from our field research. The area is grassland, not a tree dominated biome, and therefore planting alien trees here would not improve the land.

How will the community be compensated for its losses?

GRL officials suggested that the communities will be compensated through job creation and other non-economic benefits from the project. According to the company, the community would be more than compensated when they received income from the project through renting out their land, and employment opportunities. The GRL General Manager emphasised that the community would in fact stand to be the first to benefit as it takes years for the company to start reaping profits, saying that while employment and other benefits are already received by the community, it takes longer than 7 years for the trees to mature (eucalyptus). As such, he suggests that the first 5 or so years of a plantation investment go to benefiting the community. This assumes that community members employed receive a living wage for decent work.

Some of the promised compensatory items are listed in the agreement between GRL and the Idete community shown above. However, as can be seen in the following photographs, clinics and schoolrooms that GRL promised to improve have not been. These amenities were cited in the land deal as a way in which GRL could compensate the community, however they are still in poor condition and it is doubtful that meaningful compensation has been effected.

How can compensation for losses be calculated?

There is no reliable measure for calculating compensation to the community. GRL's business proposal and feasibility study is the only available cost benefit analysis of the project. Government departments that sign these deals do not have the capacity to mount their own assessments in order to ensure these deals are mutually beneficial. Lack of capacity in community institutions precludes them from understanding the implications of the deals they are signing, let alone establish a cost-benefit analysis of the projects they commit their resources to.

Access to food and water

Access to food and water has been mediated by the market, but is yet to be fully developed in rural Tanzania. Communities operate at the fringes of the market for goods and services. In other theoretical models this is seen as a dual economy where urban is complex, mechanised and modern, while rural is traditional and 'backward' in comparison. A more educated observation would show that the rural-urban separation is not accidental but rather a result of colonial economic planning. When asked if the plantation project would have any impact on food and water resources at the national level, responses from different groups differed. They can be reduced to the categories of respondents, which also indicate a class bias. The responses are detailed in the table below:

Group	Response	Comments
Makungu Community	The CDM project will ultimately affect us. We have already seen the effect on our rivers and access for land for stock	This community is aware of the impacts of plantations, being home to Mufindi Paper Mills and its plantations where it pollutes water resources, and kills fish and other river life.
Idete Community	We are not sure how it would affect us as the land that we are using for food and grazing is not yet affected. However, if the amount of trees being grown increases within food producing land, this can become a problem. At present we have only allocated a portion of our land to GRL.	The Idete Community has limited experience with timber monocultures, but may be concerned about expansion. The GRL plantation in this area is only 3 years old, and villagers do not understand how establishing woodlots on their remaining land can contribute to the worsening the overall impacts of the Idete plantation project.
Green Resources Ltd	No impact at all. The Southern Highlands has been home to plantations for more than 100 years. There are many other impacts to the environment than just timber. Our voluntary standards are high enough and not imposed on us. We understand that the community is our business site, so we do make sure that we protect it for sustainability.	GRL believes that the future lies in employment creation as rural livelihoods are coming under pressure from many forces. So the easiest option is to go the employment creation route for people to meet their livelihood needs. This is the same thinking in many African as well as developed country governments as they consider African development. However, the reality on the ground is that the numbers and quality of jobs are not adequate to absorb the unemployed people and pay a living wage. As such, the traditional production and livelihood regimes need to be protected and enhanced to maintain sustainability.
Govt Officials	The plantation sector is an important aspect of the Tanzania economy, as such; any negative impacts will be ameliorated through legislative and regulatory guidelines.	Government finds sustaining traditional livelihood systems cumbersome and costly. Private development is often seen as a panacea as it means that government can only deal with the facilitation of private players. The day-to-day development challenges and support systems are then outsourced.

NGO Officials	Some see potential for improved livelihoods while others see the danger of a possible land grab system that would undermine land based livelihood access by rural communities.	The Tanzanian civil society NGO type community (like any in Africa) is not homogenous and does not have a monolithic approach to development issues. There is also the high dependence on overseas funding
Academics	Responses are split between the supporters of capital who see modernisation as the only development path, the critical, and those who are ambivalent about the potential benefits or impacts of these types of projects.	As with NGOs, academic responses to the expansion of timber plantations are divided. Those in forestry departments see them as beneficial if all guidelines are adhered to. The other group is the paid consultants that are often biased towards their client's position. There seems to be a difference between commercial consultants and university-based academics who seek a level of 'objectivity'. Academics and researchers at the University of Dar es Salaam who are also in the civil society movement oppose expansion of the agro-industrial model in communal areas, whether tree plantations or biofuels. Leading voices include activists and intellectuals such as law professor Issa Shivji founder of the Land Rights Research Institute. Their critique of this model is cutting edge.

Factors that will impact on lifestyle and culture

Future population growth does not appear to have been factored in by rural communities that view such land deals as positive. There also seems to be a lack of appreciation that the land being sold to GRL is held in trust by the village community on behalf of future generations. There is evidence of GRL consultation with the Idete community leadership. However village leadership does not represent all voices in the community. The Idete and Makungu areas do not have Community Property Institutions, but there are traditional authorities that link to government institutions. Their members are paid and supported by the central government, with the effect of shifting their loyalty away from the community to those who pay them.

Environmental issues affecting the community

How will grasslands be affected by the plantation project? What will be lost from the biodiversity of the area if plantations are established at Idete? The conversion of grasslands to monoculture tree plantations will have a permanent negative impact on the biodiversity of the area. This topic has been covered in the section of the report dealing with biodiversity. In a response to the preliminary report, Green Resources used FSC certification to refute the possibility of any harm to the environment. They argued:

> "- Green Resources aim to achieve both FSC and CCB certification on this project as it does with all other projects. Currently the project has successfully undergone pre-assessment for FSC, and is in the later stages of CCBA validation."
> (GRL response to TW preliminary report)

According to this statement, achieving FSC and CCBA certification is considered adequate to allay concerns about biodiversity loss, but the evidence found does not support this assertion. It also implies that "FSC and CCB certification" is guaranteed!

Tanzanian NGOs and grassland conservation

Funding limitations and the dependence of NGOs in Tanzania on support from funders with narrow sectoral interests keeps issues such as government obligations under the CBD (Convention on Biodiversity), on the back burner until these become key funding issues such as REDD is now. While further surveys and research need to be carried out, it is difficult to suggest the extent to which these issues are affecting the performance of local organisations. Norway's efforts to commit many local organisations to forest/climate related policy and conservation projects will not serve the interests of protecting Tanzania's dwindling montane grasslands, and may in fact contribute to their further destruction. Based on our experiences in Tanzania, there is a poor knowledge of environmental issues in general, and it is clear that there is a need for work-shopping with local environmental NGOs and grassland communities.

The effects of plantation roads

In areas where tree plantations are the only major activity, it is fair to suggest that roads have been built purely to facilitate access to them, and maintenance is virtually non-existent. The tractors and equipment used by plantation-owners result in poor road conditions that make community movement and transport difficult and expensive. Heavy trucks carrying logs cause further damage to these roads. Without decent road access people in rural areas remain remote and excluded from economic activities and employment in urban areas.

Between Sao Hill and Makungu, the road is in poor condition and this creates movement problems for the community. The timber industry claims to have put more money into roads than the government has invested in road infrastructure in remote areas. However this should not absolve them from responsibility for the damage caused by their heavily loaded trucks. This selfish thinking is consistent with the extractive nature of global capitalist logic as introduced by imperial colonialism. This self-serving approach to infrastructural development, appends rural communities and their economies to the logic of this extractive investment.

The research team negotiating a difficult section of road

In some areas, roads are specifically for the extraction of logs

Further general reading:

PAMBAZUKO NEWS 2010-10-07, Issue 499 - ***Unclean development mechanism –*** Blessing Karumbidza and Wally Menne
www.pambazuka.org/en/category/features/67532

Saunders, C., 2003, '***Traders of nothing — How carbon emissions may save capitalism'***, Australian Financial Review, January 18–19, p45–46.
http://timberwatch.org/uploads/Traders%20of%20nothing.pdf

The new GRL tree nursery

The new GRL tree nursery has the capacity to produce many thousands of seedlings a day, which makes sense if the company will be planting more than the existing 25000 ha. An extension programme through which communities are encouraged to plant timber trees on their land (woodlots) already provides an outlet for increased seedling production, but the existing and planned expansion of Mufindi Paper Mill's plantations could take a large part of the nursery's production output.

Hi-tech equipment has an impact on employment levels. Presently plantations are established with manually produced seedlings, which generate some local employment. High-tech nurseries employ fewer people and presuppose the existence of a skills or literacy base upon which further training could be pursued. In this region, technically advanced operations tend to exclude local job seekers with low literacy and limited schooling.

This nursery could support a plan to convert more land to plantations than is presently included in the GRL business and EIA plans. GRL has not revealed where it would get the land to plant all the seedlings, so as to justify investing in such a high output facility. The suggestion coming out of discussions with GRL officials at the Sao Hill Mill office is that they are promoting individual household and community woodlots. These are being promoted as a panacea for poverty and as a way to mainstream local involvement in the timber and carbon market.

The large South African designed nursery at Makungu indicates the extent to which tree plantations are envisaged for this region

A South African designed Hi-tech seeding machine is intended for the large-scale production of tree seedlings

The tree plantation land-use option may appear attractive but participants do not have the information needed to know what income might be earned during the many years it takes for trees to grow to be commercially viable. Plantations are a high risk land use activity, and are highly susceptible to fire, theft and climatic variation. It is therefore difficult to calculate the costs of opportunities lost as a result of effectively giving their land to Green Resources Ltd in exchange for uncertain returns.

By encouraging woodlots on village land, the company transfers responsibility for the risks relating to fire and other losses, and the long term destruction of their land, to the community. This amounts to little more than a form of victimisation where the limited resources of an already poor community are being appropriated by a company from a wealthy nation in order to serve the interests of wealthy shareholders and polluting industries.

Public facilities in Idete village

A promise made by GRL as part of its land acquisition deal is that it would improve living conditions. There was not much evidence of this in Idete where public facilities were in a state of disrepair. The school, clinic and village office needed major maintenance and repairs, while a half-complete building intended to serve as a new village office remained unusable. Houses in Idete indicate a low living standard. From the pictures below, it is fair to suggest that people live below the poverty datum line and experience deprivation, income and asset poverty. They are locked into a cycle of poverty that the GRL project will not change. A different investment regime is required to change this scenario by ensuring a more equitable distribution of benefits. This would entail a combination of increasing income from production on their land and improving livelihood strategies, with decent jobs for some members of the household. Given the poorly paid, dangerous and unhealthy work offered in plantations, GRL employing people already in poverty translates to further marginalisation.

Idete office: GRL started building a new one but not much progress since planting trees

Women at the Idete clinic, which offers basic medical services to the community

The poor state of an Idete School classroom

A rustic home in the Idete community

Lifting people out of poverty requires a redistributive public investment programme based on enhancing people's livelihood strategies. When people have their own land as in this case, the priority should be to use the land productively, while ensuring that it remains in a condition fit to do so far into the future. After establishing household food security, the next step is to link production to a market, to increase household income. Food security and household income improves health and access to education. The cumulative effect of this is increased production, which leads to improved living standards and income, and increases the asset base. This lifts people out of poverty to a state of subsistence, and then puts them in line for better standards of living. However, this requires increased government intervention in the poor sectors of the economy as well as better planning and coordination. Many African governments find such things cumbersome and thus prefer to outsource 'development' to private investors.

Timber in the local economy

It is encouraging that there is more evidence of local timber utilisation in Tanzania than in South Africa. The industry is dynamic, involving a range of players from small-scale operators using hand tools, to international companies using modern equipment. As such it has the potential to increase community participation in the beneficiation of locally produced timber.

The table in the picture below was designed and made by a carpenter in Makungu village. Such entrepreneurship is evident in many villages. However poor people find it difficult to access the equipment needed for this type of work. One of the limiting factors is poor access to electricity. There is a need for local alternative energy to power village based manufacturing.

	
A small-scale sawmill cutting planks	Locally manufactured coffee table

This timber workshop (below) is on the road from Morogoro to Iringa. The owner-operator is a retired teacher who purchased the equipment and land to set up this workshop. He employs his sons and transfers skills to apprentices who wish to establish their own workshops in the future.

	
A roadside workshop producing furniture items for local consumption	Mufindi Wood Poles is a medium sized enterprise that has grown over the years

The timber sector has seen the entry of small players using simple, often modified, hand held equipment. However this sector also uses poorly paid migrant workers under poor working conditions. Workers are not provided with protective clothing and work for a fraction of their labour's worth. A middle-sized industry player, Mufindi Wood Poles Plant & Timber Ltd, employs 30 workers. Indications are that cumulatively, small and medium saw mills and related activities add value to the Tanzanian timber sector. A study of this sector would inform policy to improve its potential to benefit local people rather than larger, more mechanised outsider companies.

The Mufindi paper mill

Mufindi Paper Mills (MPM) situated at Makungu is a good example of how to make the endemic problems of the plantation model even worse. An interview with the General Manager of MPM, Mr Y.V. Choudhary indicated his disrespect for local economies. He views MPM as a saviour that deserves no criticism because of its investment role. The standard of environmental and community practices within the plantations and villages affected by MPM activities is very low.

The community raised misgivings about Mufindi Paper Mills. According to the community, the establishment of the mill has led to the death of snakes, birds and fish in the area, especially along the river where effluent and sludge from the industrial process is dumped. The loss of birds and fish directly impacts people's livelihood strategies and food security. Killing snakes undermines the ecosystem and biodiversity balance. The communities feel undermined. MPM does not seem to respect the local people's culture and beliefs, planting trees and opening roads over graves despite pleas from the community. Many community members interpret this as being intended to frustrate the community until they seek to relocate from their ancestral land. Mr Choudhary (MPM) confirmed this fear by suggesting that these people should leave, as they do not work for him and are there illegally. He further stated that these complaints were baseless, political and came from criminal, trouble-making unthankful people that he has kindly allowed to live on company property.

While MPM proudly refers to its good environmental practices, merely walking out of their office premises and driving along plantation roads reveals evidence that even minimal good plantation management has been neglected. This is easy to understand in light of Choudhary's claim that there is no active local civil society body to bother about. Choudhary sees MPM's role in the Tanzanian timber industry as that of saviour, given that the company was previously government-owned (then called Southern Paper Mills) and running at a loss. He is of the opinion that MPM should therefore be handled with kid gloves, and be free from any critical scrutiny, yet be considered a panacea to local unemployment. Like GRL, Mufindi Paper Mill is seeking to expand its plantations in the region.

> Morogoro — KILOMBERO District in Morogoro has accepted move by the Mufindi Paper Mills Ltd (MPM) 'Mgololo' in Iringa to invest in 30,000 hectares of land in Uchindile Village where they are expecting to plant trees for paper making. Kilombero District Commissioner Eng Evarist Ndikilo told the 'Daily News' that the district has agreed to give MPL the piece of land to increase revenue and create employment for Morogoro youths. "This land was idle and we did not have any development plan for it hence the MPM request came at a good time," he said.
> Source: http://allafrica.com/stories/201007191403.html

To say "This land was idle" demonstrates ignorance at best: The loss of arable land, reduced soil quality and the siltation of local streams is a growing problem in the timber growing areas of Tanzania. The river systems (Ruaha and Kilombero) fed by the Southern Highlands catchment are experiencing increased siltation, and the quality of riparian land has declined in the face of the growing population and increased demand for food.

The minimum standard for plantation establishment prohibits planting trees on steep slopes where they will increase erosion and deplete topsoil. These guidelines have evidently been over-ridden, possibly by profit margin considerations. While international awareness has put GRL plantations under scrutiny, it is not known if MPM has followed appropriate procedures.

A common problem with pulp mills is the unplanned and irresponsible dumping of waste. This is more noticeable at bigger mills as these produce proportionately more waste containing toxic chemicals, which affect soil, water, people and wildlife.

Dumping site next to wetland just outside MPM close to the Makungu community

Sao Hill plantations supply much of MPM's raw material

The road to Idete passes through newly established MPM eucalyptus plantations

Blessing Karumbidza (rf) meeting with members of the Makungu community

The Environment, Energy and Carbon Question

One of the biggest threats to the natural environment of Tanzania is charcoal production. If GRL is truly interested in stopping climate change in a way that protects the environment, the place to start in a country like Tanzania would be with turning the tide of deforestation for the purpose of charcoal making. It is important to take a look at the charcoal industry and its links to energy, land and livelihood.

Poor rural communities are responding to the demand for charcoal from urban homesteads. Tanzania's energy supply lags far behind demand, and it is estimated that Tanzania can meet only 7% of its energy requirement with electricity, the rest depending on other sources such as charcoal, which has proliferated as an economic response. A problem with this is that rural labour and energy has been divested from agricultural livelihoods to charcoal making. The price of charcoal is higher in urban areas than in rural centres of production. Truckers and pick-up (utility vehicle) owners buy charcoal for between 12 000 and 18 000 shillings per bag depending on the distance from town, but the same bag fetches 35 000 to 45 000 in urban centres.

A cost benefit analysis of charcoal production shows that the real cost of a bag of charcoal is higher than 120 000 shilling (this does not include the cost to the environment). The loss of labour from agriculture means the rural poor are faced with higher food prices, but have no means by which to purchase their food requirements. This reality flies in the face of the food security regime that suggests that people do not have to grow their own food to be food secure but can engage in other activities to obtain the means with which to buy food.

Returning to the energy-carbon link, planting alien tree monocultures in grassland does not seem to be environment-friendly in a country where investment in renewable energy could protect forests through 'avoided deforestation', and secure climate fund payments for ecosystem services, as opposed to market based REDD and CDM mechanisms.

The report below about Norway funding projects to reduce deforestation in Tanzania highlights contradictions in plantation promoting, grassland destroying 'development' claims in Africa. The Norwegian government wrongly describes alien tree plantations as stemming deforestation; in reality they are planted in functional grasslands, not deforested woodlands.

Norway to fund Tanzanian Trees - Posted on 25 April 2008
http://www.icenews.is/index.php/2008/04/25/norway-to-fund-tanzanian-trees/
Over the next five years, the government of Norway has pledged a total of USD 100 million to Tanzania for projects which aim to reduce deforestation and combat climate change. According to reports on Reuters, the two countries signed an agreement on Monday regarding the funding. The project will see Norway assist with research and education on the issue of deforestation in Tanzania as well as begin pilot areas to put deforestation protection methods into practice. Norway will also participate in developing methods to measure a forest's impact on carbon absorption.
Norwegian Prime Minister Jens Stoltenberg hopes that the projects will help Tanzania stand before other developing nations as an example of using a nation's forests to combat global warming. "How to do it, and how to combine the idea of rural development with creating new sinks for carbon dioxide by planting new trees is exactly what we are going to do in Tanzania," he said.
Tanzania is one of the foremost destroyers of forests in the world, following Sudan and Zambia, according to the office of the Norwegian Prime Minister. Norway, the fifth largest oil exporter in the world, is attempting to become "carbon neutral" by the year 2030.

Also see: ***Norway gives Tanzania $100 million for forests***
http://www.enn.com/top_stories/article/35044

This assumption is misleading. Planting trees in grassland has nothing to do with stopping deforestation, though it could be true as Norway's Prime Minister suggests that Tanzanians are cutting down trees to open land for agriculture and now mostly for charcoal making.

The answer to the deforestation suggested above is not to replace grasslands with plantations. A well formulated response and genuine concern to help should rather target restoring the natural forests that are being cut down, not planting new trees where they have not been. The full press release indicates a different agenda, clarified in the last sentence that reads: "Norway, the fifth largest oil exporter in the world, is attempting to become "carbon neutral" by the year 2030." This is what tree plantations are really about, acquiring carbon credits in order to be seen as carbon neutral, and not about helping Tanzania reduce deforestation. In allowing conversion of grasslands into tree plantations under the CDM, the government of Tanzania has lost opportunities to acquire investment in renewable energy, or through the double-edged sword that could deliver forest conservation through a REDD mechanism.

Effects on the local economy

Rural development and the upliftment of poor rural people is one of the main promises made by international investors such as GRL. However, more often than not, these so-called upliftment programmes bypass and undermine the efforts of local entrepreneurs. According to local traders, it makes more sense to them for such investors to support local producers of food, goods and services that local people need, instead of introducing foreign things that change their lifestyles and culture.

The agricultural potential of grasslands in the Southern Highlands has been played down in order to promote and to justify land use change from crops, like cassava, bananas, fruit trees and vegetables as shown below, that provide the household with a balanced and secure culturally sensitive diet, to inedible timber plantations.

Food store sells food grain from smallholders

Roadside market for locally made charcoal

Local grasslands support the cattle economy

Productive home gardens feed the family

Conclusions and recommendations

Summary

Apart from the obvious attraction of obtaining long-term control over productive African land, GRL expects to be able to sell carbon credits to Norway, based on dubious claims; firstly that its tree plantations will be an effective carbon sink, and secondly that CDM finance is essential for the project to be financially viable. It looks like FSC forest certification has been awarded to the Idete plantation project with some fancy footwork by SGS. Now all that remains is for the CDM EB to make a decision. We hope they will read this report first and consider voices on the ground that are clearly against this project and what it represents for local livelihoods!

Together with the other GRL tree plantations in the Mufindi area, the Idete project has been poorly conceived, badly implemented, and irresponsibly managed, yet the company still portrays itself with blustery exaggeration as "Africa's leading forestation company". Media hype promoting GRL's projects has been substantial, yet on the ground it is far from what GRL portrays to the world.

Buy-in from greedy financiers, desperate polluters and ruthless carbon traders has given GRL the false assurance that they can now replicate the disasters of Idete, Mapanda and Uchindile across the face of Africa, beginning in Moçambique and with further imperialistic expansion plans for Uganda, the Sudan and Kenya.

General conclusion

The Green Resources Ltd Idete tree plantation project can be likened to a crazy medical experiment; that could kill the subject (the local grassland ecology) and leave their family and dependents (the Idete community and grassland biodiversity) to die from neglect. It is a problem that this aspiring CDM project is being rolled out to full scale before its impacts and long term effects have been properly assessed. Unfortunately, it seems to be the norm that such tree plantation project proposals are not subjected to thorough pre-assessment when they are implemented on poor black people's land in a third world country that is dependent on external donor funds. False claims, inadequate information, and unpredictable assumptions of the outcomes of the project have been used to underpin the CDM project description document (PDD), the environmental impact assessment (EIA), and therefore by extension the company's faulty arguments for future sustainability and profitability to its funders and shareholders.

Norway's responsibility

Norwegian policy makers, government bureaucrats, and investors who support these kinds of projects in developing countries should be aware that a collective claim for damages could take much of Norway's oil fund to compensate the victims. A decision to continue can be seen to be a racist economic gamble that views poor communities as incapable of the sophistication to analyse and revolt against such projects. As such, the Norwegian government through its support for Green Resources Ltd appears to remain determined to continue its reckless destruction of grasslands in Africa.

UNFCCC culpability

The Norwegian government and the UNFCCC should take responsibility for the problems associated with CDM-type tree plantations and other similar projects that they have created, including those being driven by the prospect of REDD finance for plantations to replace "degraded" forest habitat, as in Indonesia. They have helped create a benchmark for what can be described as a social and ecological disaster; for the countries, their people, for their land and its biodiversity, water and soils.

The worst outrage is that the UNFCCC has promoted the false notion that tree plantation projects such as those of Green Resources Ltd at Idete can help prevent climate change, and should therefore be used as a means of offsetting the ongoing greenhouse gas emissions caused by polluting economies.

Harm must be acknowledged

The enormous harm that can be caused to local communities and their land by resource exploitation using tree plantation projects, especially those motivated by the lure of CDM finance through carbon credits, must be acknowledged. The Idete project has been justified through many misleading claims and promises, while in reality there are numerous problems with its tree plantations. Under these circumstances, there is good reason to remove recently established plantations and to ensure that the land is fully rehabilitated, and returned to its rightful owners with full compensation.

False forest certification

The CDM Due Diligence report on the wishful Idete plantation CDM project makes repeated reference to the FSC 'forest' certification standards being applied by Green Resources Ltd. (**www.regjeringen.no/upload/FIN/okonomiavdelingen/Idete%20CDM%20due%20diligence.pdf**).

In reality FSC certification legitimises destruction of the grassland ecosystem. It certifies as acceptable the pollution and dangerous plantation work where people are often injured or poisoned. FSC certification seems to be the ultimate conjurers trick – to turn something rotten into something good - using the FSC logo as its magic wand. It can be used to open the door to foreign land-grabbers by providing false assurances of viability and sustainability for one of the most environmentally and socially destructive land-uses on our planet. Tree plantations are not forests and it is time that the perverted role that FSC plays in promoting the wasteful consumption of timber and wood-based products is recognised.

Restoration of the project sites

Nowhere has the question of who will be responsible for restoration of the land affected by the Idete plantation project been addressed. After 100 years (but probably far less) the Idete land will be completely degraded; destroyed, devalued, like an old car wreck with no residual value but as scrap metal. The top soil will have been depleted or washed away; the nutrients taken by the plantation trees, or leached away thanks to soil acidification. The surrounding soil and water resources will have been polluted; the natural plant diversity will have been destroyed and replaced by alien invasive weeds. Any topsoil that might remain after the plantation trees have been cut for the last time will hardly be able to be ploughed thanks to tree roots and stumps left by the plantations.

Limited benefits of community woodlots

The negative effects of establishing woodlots and tree plantations on community land need to be exposed and highlighted. There appears to be no firm commitment on the part of GRL to buy the logs that communities might produce, let alone to take responsibility for the risk of wildfires, the cost of maintenance, and negative environmental impacts. Such 'woodlots' are in effect a gift of free community land and labour to the company. GRL's boasting about donating 'free seedlings' for these community woodlots is insulting to the generosity of the community. Ultimately, GRL will derive the greatest benefit from those woodlots, while the community carries the full risk; a single fire could destroy the entire value of a woodlot, resulting in a substantial loss to the community.

Referencing and information resources

Wherever possible, references and links to relevant documents and other sources of information on the Internet have been included in the body of this report. Some websites are listed in this section below as suggested additional sources of information.

CDM watch - www.cdm-watch.org

Carbon trade watch (CTW) - www.carbontradewatch.org

Centre for Energy, Environment, Science and Technology (CEEST)
http://cd4cdm.org/countries.htm

Climate Justice Now! - www.climate-justice-now.org

Conservation International (CI)
http://www.conservation.org/learn/climate/Pages/overview.aspx

Food and Agriculture Organisation (FAO)
http://www.fao.org/docrep/009/a0413e/a0413E05.htm

Friends of the Earth - www.**foe**.co.uk/resource/briefing_notes/dangerous_distraction.pdf

Global Forest Coalition – www.globalforestcoalition.org

Greenpeace International (GP)
www.greenpeace.org/international/en/publications/reports/sinks-in-the-cdm-after-the-cl-2/

International Finance Corporation (IFC)
www.ifc.org/ifcext/media.nsf/Content/CarbonFinance

Norwatch - www.fivh.no/norwatch/english

Norwegian government
www.regjeringen.no/upload/FIN/okonomiavdelingen/Idete%20CDM%20due%20diligence.pdf

Pan African Climate Justice Alliance - http://www.pacja.org

Tanzanian CDM process
http://www.norway.go.tz/News_and_events/Energy/Developing-CDM-Projects-in-Tanzania/

Third World Network - http://www.twnside.org.sg/climate.htm

United Nations CDM site – www.cdm.unfccc.int

UN Environmental Programme (UNEP) – UNEP RISOE – www.**cdm**pipeline.org

UNFCCC Kyoto Protocol - http://unfccc.int/resource/docs/convkp/kpeng.pdf

United Nations forum on Forests (UNFF) - www.un.org/esa/forests

Worldwide Fund for Nature (WWF) -
wwf.panda.org/what_we_do/how_we_work/businesses/climate/offsetting/gold_standard/

World Rainforest Movement – www.wrm.org.uy

"The Southern Rift Montane Forest Grassland-Mosaic ecoregion is composed of several structurally and compositionally distinct vegetation communities, the most dominant of which is grassland (White 1983)."

"Several other vegetation types are set within the grassland matrix, the most prominent of which is Afromontane forest, although this constitutes less than 5 percent of the landscape, and is confined to fire-sheltered pockets, moist escarpments, valleys and watercourses (Chapman and White 1970; Kerfoot 1963-64a, Dowsett-Lemaire 1989)."

"High biodiversity is found throughout the different vegetation types which have different species richness each one representing a unique ecosystem. Blue swallows, a species of global concern and listed as endangered in East Africa are found on the FMU."

Source: FOREST MANAGEMENT CERTIFICATION REPORT: PUBLIC SUMMARY 24 May 2007 Doc. Number: AD 36-A-05
Forest Management of plantations in the Iringa and Morogoro Regions of Tanzania– Mapanda Uchindile and Idete Project Areas. Total Certified Area 30042ha. Certificate Nr. SGS-FM/COC-005066 Date of Issue 08 Aug 2008

CDM Carbon Sink Tree Plantations – A case study in Tanzania

Blessing Karumbidza and Wally Menne – The Timberwatch Coalition

This study looks at a carbon offset tree plantation project of the Norwegian owned company, Green Resources Ltd (GRL), situated at Idete in southern Tanzania. GRL aims to register the project under the CDM (Clean Development Mechanism) in order to be able to sell carbon credits to the Norwegian government. It appears the deal is conditional upon the project being certified by the Forest Stewardship Council (FSC), in support of the notion that the project is environmentally responsible. However these tree plantations will destroy up to 7,000 hectares of what GRL claims to be "degraded" grassland, and deprive local people of access to biodiversity resources and cropland. This report aims to unravel a complex situation in order to analyse the project's impacts on people and Nature.

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